Development of School-Based Health Promotion for Adolescents Health in Indonesia: Challenges and Future Strategies in Health and Education Sectors

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Development of school-based health promotion for adolescents health in Indonesia:

Challenges and future strategies in health and education sectors

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Abstract

Global evidence clearly indicates that health-risk issues such as smoking, consumption of unhealthy food, physical inactivity, mental health problems, unintentional injury, unsafe sexual activity and alcohol and drug abuse are common in adolescents. In the long term, these health-risk issues relate to chronic disease, disability and premature death. An effective prevention strategy addressing the health risks among adolescents is important to improve the quality of life during adolescence and throughout adulthood, and school is an ideal setting to promote adolescents' health.

School-based health promotion has been developed as both a global and a country strategy to prevent health risks among adolescents. In Indonesia, a school-based health program has evolved since 1960, with collaboration between the National Health and Education Ministries, as the two key stakeholders. However the participating Indonesian schools are still struggling to conduct health promotion activities with their students and the local school community. This was highlighted by a preliminary study in this research which demonstrated that only one out of nine junior high schools had actively implemented the school-based health promotion program. In addition, national figures for major health-risk behaviours among adolescents in Indonesia continue to show a higher proportion of smoking, bullying and unintentional injury compared to other countries in Asia. Evidence relating to the needs and challenges of key stakeholders in Indonesia to effectively implement a school-based health promotion is required urgently to support the development of policy to improve such programs.

This thesis aimed to examine the needs and challenges confronting both the health and education sectors in implementing the school-based health promotion program in Indonesia. The research findings will inform the stakeholders in developing strategies to better and more effectively implement school-based health promotion programs in Indonesia. This research used a variety of methods including:1) a comprehensive needs assessment;2) a case study approach in two schools in Depok and 3) a secondary data analysis of Depok school-based health survey data from Indonesian Ministry of Health. Data was gathered using in-depth interviews, observation and group discussion in several settings, including Indonesia (in Jakarta and Depok), Australia (in Queensland) and China (in Guangzhou, Hong Kong and Macao).

This research discovered the primary needs for an effective school-based health promotion program are: sufficient human resources; an effective government system and governance structures; school-based health activities on a regular basis; maintaining an equal work load between the health and education sectors; and a stronger advocacy process for school-based health promotion programs at the national and district level. The key challenges for implementing effective school-based health promotion were: failure to transfer policy into practice, problematic communication between key stakeholders in the partnerships and lack of resources at school level.

One of the most challenging issues in relation to improving partnerships between the health and education sectors is the different expectations of each partner and the lack of clarity of roles and responsibilities. The limited budget for implementing the school-based health promotion program is one of the main issues for the majority of the selected schools analysed in this research. Lessons learnt from China and Australia highlighted that the leading sector in the school-based health promotion program can be any institution or organization (not necessarily the national government, as is the case in Indonesia), that strong community action is necessary for success, that school leadership is a critical element of program implementation and effective partnerships are very important in school-based health promotion.

In conclusion, this research has demonstrated firstly, the important of preventing health-risk issues among adolescents, secondly, it has identified challenges and ways to improve school-based health promotion program in Indonesia. Finally, this study has demonstrated the necessity to shift the mindset of all related stakeholders and school communities to increase preventive health promotion approaches, rather than the curative approach, in developing school-based health activities. The future plan for strengthening the school-based health promotion program requires the development of a more comprehensive policy approach, strategies to facilitate effective partnerships and ways to strengthen community involvement.

Statement of Originality

"This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself."

Signed : _____

Date : _____

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List of Abbreviations

Arisan	A housewife group
ASHRAE	The American Society of Heating, Refrigerating and Air-conditioning Engineers
BMI	Body Mass Index
CDC	Centre for Disease Control
CHD	Coronary Hearth Disease
CHEP	Centre for Health Education and Health Promotion
CI	Confidence Interval
COPD	Chronic Obstructive Pulmonary Disease
CPHD	Centre for Physical Health Development ("Pusat Pendidikan dan Pengembang Jasmani)
ETS	Environmental Tobacco Smoke
FDA	Food and Drug Association
FGD	Focus Group Discussion
FRESH	Focusing Resources for Effective School Health
GLM	General Linear Model
GSHS	Global School-based Student Health Survey
HAS	Hong Kong Healthy Schools Award Scheme
HBM	Health Belief Model
HDL	High Density Lipoprotein
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
HPS	Health Promoting School
HPSMP	Health Promoting Schools Mentoring Project
IMOH	Indonesian Ministry of Health
K-12	Kindergarten to grade 12
Karang	
Taruna	A youth group
KIA	Maternal and Child Health
MOEd	Ministry of Education
MOH	Ministry of Health
MS	Mainstream Smoke
NCD	Non-Communicable Disease
NGO	Non-Government Organization
NHS	National Health Service
NHSS	National Healthy School Standard
NIDA	National Institute on Drug Abuse

PAR	Population Attributable Risk
PHBS	"*Perilaku Hidup Bersih dan Sehat*" (a healthy and clean behaviour program in five different settings, being workplaces, households, hospitals, schools, and public places).
PHC	Primary Health Centre
PKK	"*Pembinaan Kesejahteraan Keluarga*" (family welfare movement)
PKPR	"*Pelayanan Kesehatan Peduli Remaja*" (adolescent health care program)
PMR	" Palang Merah Remaja" (Adolescents Red Cross)
POM	Food and Drug Association
PROMKES	"*Promosi Kesehatan*" (Health Promotion Centre)
SCT	Social Cognitive Theory
SEL	Social and Emotional Learning
SHP	School Health Program
SHPS	School Health Portfolio System
SKRT	*" Survey Kesehatan Rumah Tangga*" (A national Household Health Survey)
SS	Sidestream Smoke
STI	Sexual Transmitted Infections
SWOT	Strength Weaknes Opportunity Threaten
TMC	Transtheoritical Model of Change
Trias UKS	A school health program consists of three main aspects being health education, health services, and school environment.
UK	United Kingdom
UKS	*"Upaya Kesehatan Sekolah"* (school health program)
UNICEF	United Nations Children's Fund
USA	United State of America
WGHPSGS	Western Gateway Health Promoting School Grant Scheme
WHO	World Health Organization

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Part 1. Introduction, Literature Review, Conceptual Framework and Methodology

Chapter 1. Introduction

1.1. Introduction

Adolescent health is one of the important aspects in the human life cycle. Adolescence is a suitable time to build healthy behaviour and a strong foundation for a better life style and quality of life in older age. This period of transition in becoming a young adult is associated with a greater chance of participating in deviant behaviour and a tendency to try negative behaviour that leads to health-risks. According to WHO (2004) Examples include alcohol and other drug abuse, poor dietary behaviours, poor individual hygiene, mental health problems and related behaviour, physical inactivity, unsafe sexual behaviours, tobacco use, violence and unintentional injury. In the long terms these health-risks are associated with chronic diseases such as cardiovascular diseases, cancer, diabetes, chronic obstructive pulmonary diseases and stroke, which may lead to disability and premature death.

In order to address these health-risks adolescents, an intervention strategy focusing on promotion and prevention approaches using a settings approach is necessary. School-based health promotion is the most suitable for promoting adolescent health because the school setting is where adolescents learn while interacting with peers. Experiences in developing and developed countries have shown that a school-based approach is an effective strategy in reducing risky behaviour in adolescents (Aldinger et al, 2008, Easterling et al, 2003).

In Indonesia school-based health promotion has been used since the 1960's in order to improve the health status among children and adolescents. The Ministries of Health and Education are the key stakeholders. School-based health promotion in Indonesia, referred to as UKS has focused mainly on hygiene and first aid program. Recently school-based health promotion program are called Trias UKS. This approach uses broader concepts of health education and health services and creates environments to promote adolescent health.

Despite these initiatives, there are still issues concerning adolescent health-risk and the implementation of school-based health promotion in Indonesia. A previous national

survey in Indonesia showed health-risk issues in adolescents included smoking, poor food hygiene, bullying and unintentional injury. There are however no specific figures for health-risk issues among adolescents at a district level are available in Indonesia. With regards to the implementation of school-based health promotion, the preliminary survey showed only 1 out of 29 junior high schools had actively run the school-based health promotion programs. The schools have included the "UKS" in extra curriculum program but it lacked activities. The health activities in schools depend on contributions from both the Education and Health sectors as key stakeholders in school-based health promotion. It is important to review the needs of adolescents and the key stakeholders, particularly the challenges facing the education and health sectors in order to implement more effective school-based health programs.

This chapter will provide an overview of the thesis covering the rationale of the research including research background, aims, scope, methods undertaken and will describe the thesis structure.

1. 2. Background

The health-risks in adolescence may continue to adult age and lead to major chronic diseases and premature death. A Global School Health Survey (GSHS) conducted during 2006 and 2007 in Asian countries by CDC Atlanta showed that Indonesia had the highest prevalence of smoking (23%) among male adolescents aged 13 to 15 years compared to Thailand, the Philippines, China and India (CDC, 2006). Food safety has also become an issue for adolescents health in Indonesia as about 23.7% of food borne illnesses occurred in schools, originating mainly from the school canteen and street vendors (Badan POM, 2005) . The GSHS also reported that Indonesia had a high prevalence of bullying (54.2% in males & 43.7% in females), and unintentional injury (56.3% in males & 34.6% in females) (CDC, 2006). These figures were for Java Island and no data are available yet for the district level. Evidence at the district level is necessary for the district government to be able to develop intervention programs for adolescent health according to local priorities and needs.

An intervention program to address health-risks in adolescents requires integrated and multiple issues- based approaches of behaviour change instead of a conventional approach. The conventional approach focuses on adolescent health-risks in the individual

context using a cognitive and psychological-based approach, meanwhile the integrated approach uses a health promotion setting concept with the focus on community or population approach integrated with environment, policy, individual, and health services aspects (Pender et al., 2002; Rew, 2005; WHO, 1986).

School-based health promotion for adolescents' health uses the integrated health promotion concept in the school setting targeting the health of the school community. The concept of school-based health promotion is an effective strategy to reduce multi-risk factors related to chronic diseases among adolescents that requires effective partnership, policy implementation and community involvement (Chu & Simpson, 1994; Denman et al., 2002; WHO, 1999a)

In regard to addressing the health issues among adolescents, the Indonesian government has developed national policies and strategies since the 1960s focusing on the school setting. The school-based health program is one of the extra curricula activities in schools and it is supported by four Ministries, Education, Health, Religion, Interior. The key support is from the Education and Health Ministries. Partnership between these two Ministries is very important in sustaining school-based health promotion.

This thesis uses the term school-based health promotion to describe the range of health promotion activities including school health programs, health promoting schools and healthy schools. As a member country of WHO South East Asia Region, Indonesia was initially introduced to the Health-Promoting School concept during the period 1993 to 1998, and also was involved in the workshop on the Development of Health-Promoting Schools (HPS) in 1997. During 2007, the Indonesian government included the concept of HPS into the "UKS" program.

Recent reports show that schools in Indonesia still have difficulties in effectively implementing the school-based health promotion (WHO, 1999a). There is a lack of evidence about the implementation of school-based health programs in Indonesia, including information on the challenges or barriers that hinder the application of policy into practice. In addition, there is little evidence to show the need to develop a more effective school-based health program from the perspective of decision makers in the education and health offices, as well as from the school community perspective. Also, information on health-risk issues among adolescents from a school-based survey at a

district level are not available in order to prioritize health risk issues for the decision making process and program development at this level.

Therefore, it is crucial to study the implementation processes of the school-based health promotion program in Indonesia by identifying the needs from all related sectors. These include the health authorities, education authorities, school communities, as well as reviewing the challenges for implementation. In addition, learning from other countries' experiences will better support an understanding of the needs for the future direction of school-based health promotion. This approach is fundamental to improving adolescent health in Indonesia.

1.3. Research Aims, Method and Scope

This research aims to investigate the needs, challenges and the future direction of school-based health promotion for adolescents in Indonesia from the perspective of the education and health sectors. Furthermore, this research will investigate the national and district strategies for school health programs and assess these needs to first adapt the health-promoting school strategy and second address the challenges from the school community perspective in implementing the school health program. The thesis will review the global strategy of school health programs with the emphasis on the health promoting school approach and experiences from other countries such as China and Australia. The research will provide recommendations for future directions for more comprehensive and sustainable school-based health promotion strategies in Indonesia.

This research focuses on the two key stakeholders, the education and health sectors, even though there are numerous other stakeholders that are involved in the school-based health promotion development in Indonesia. This is because of the education and health sectors are the key players that make significant contributions in the school-based health promotion implementation. Also, this research is focusing on young adolescents aged 13 to 15 years, who are in the junior high school level or grade 7 to 9. In the Indonesian education system, the schools are grouped into kindergarten, elementary school (grade 1 to 6), junior high school (grade 7 to 9) and senior high school (grade 10 to 12). Junior high school students (aged 13 to 15 years) are in the transition between childhood (elementary school) and young adulthood (senior high school). Besides, the exposure of health-risk issues or risk taking behaviour commonly occurs in the age of 13 to 15 years or grade 5 to 8, known as the critical period of adolescence (Mulhall, 2007; Rew, 2005).

In order to identify the needs and challenges, this research employs mixed methods that is both qualitative and quantitative methods. The qualitative methods include in-depth interviews, observations and group discussions to explore needs and challenges from the view of decision- makers in the Education and Health sectors at the national, district and school level. This also will include the views of students and parents. The qualitative data is gathered from government offices at the national and district level. The national level data is from the Jakarta office, meanwhile the district level data is from the Depok and Bekasi districts. These places were selected because of the high accessibility in obtaining the information in term of location and cost. The information from the school communities came from 6 schools within Depok, Jakarta, and Bekasi, Indonesia. In regards to describing the experiences in health promoting school practice in China and Australia, this research also uses in-depth interview and observation methods. This research selected Australia and China due to high accessibility of obtaining the information and characteristic of these countries. This research involved one school in Queensland, Australia, three schools in Hong Kong, three schools in Guangzhou, and two schools in Macao, China. The data collection activities were completed during 2008 and 2009.

Quantitative methods were used to identify the needs for the health-risk issues among adolescents in the district level expressed by the students. Secondary data from the Global School-based Health Survey in 2006 in Depok city was used to identity the need. The survey covered 1650 students aged 13 to 15 years from 29 schools in Depok, West Java, Indonesia.

1.4. Structure of thesis

This thesis contains two parts which are presented in ten chapters and four appendices. Part one includes chapters of introduction, literature review and research method and part two consists of findings, discussion, recommendations and conclusions. The following briefly describes each of the chapters.

Two chapters in part one contain the literature review (ie. Chapter one and two). Chapter two describes the global figures of health-risk issues among adolescents and provides an understanding of the health-risk behaviours among adolescents, as well as reviewing the health-risk issues among Indonesian adolescents compared to other countries. This chapter reviews the health-risk issues among adolescents as a global challenge in

preventing chronic diseases. It describes the relationships between health-risks and chronic diseases, health-risks among adolescents in global terms, health-risk issues among adolescents in Indonesia and Asian countries, and illustrates the factors underpinning the health-issues among adolescents.

Chapter three examines the school-based health promotion approach to prevent health-risk issues among adolescents. This chapter reviews the intervention strategies to address health-risks at a global level as well as in the Indonesian setting, and describes the significance of studying school-based health promotion in the Indonesian setting. It begins by describing the differences between conventional and integrated approaches, followed by reviewing school-based health promotion as a setting based approach for adolescent health.

Chapter four explains the research conceptual framework and methodology. This chapter includes details on the research aim, questions and objectives, data collection and analysis methods, ethical issues, and limitations and strengths of the research.

Part Two of this thesis includes findings, discussion, recommendations and conclusions. The findings are described in Chapter Five to Chapter Eight, and the discussion and recommendations are in Chapter Nine. Chapter Ten, the last chapter, presents a conclusion.

Chapter five illustrates the national and district strategy of school-based health program in Indonesia. This chapter aims to review the existing program including the challenges, barriers and needs to implement the school-based health promotion from both the education and health government sectors view point. As an example of a district level, this research explores the implementation of school-based health promotion in Depok city, West Java Indonesia. In response to what the national and district strategies have done to address adolescent health issues, the following chapters investigate the situation in Indonesia particularly the common issues of health-risk among adolescents and the situation in schools regarding these health issues.

Chapter six describes the health-risk issues among adolescents in Indonesia in a case study of school-based health survey in Depok city. The purpose of this chapter is to provide evidence of health-risk issues that can be used in the policy and decision making process at a district level. This chapter provides information on the major health-risk

issues among adolescents in Indonesia by presenting the proportion of health-risk issues within gender and school type.

Chapter seven examines the existing situation in two schools as a case study. The two schools represent a school with good resources and a school with limited resources. It describes the schools' profiles and readiness to implement the school health activities, including the enablers, barrier and challenges, and how the health promoting school concept has been implemented in the two schools.

In response to the findings presented in Chapter seven, chapter eight investigates the international experience, particularly in Australia and China, in implementing the school-based health promotion concept. This chapter describes how schools and local authorities implement the program as well as learning which concepts can be adopted in the Indonesian situation.

Chapter nine contains a discussion of the major findings of this research and direction for the future. This chapter discusses in more detail the needs from the perspectives of the health sector, education sector and school communities. This includes discussions of how the major health-risk issues can be utilized in the advocacy process, and the strategy evolution and barriers found in the implementation of school-based health program. It also provides information on what can be learnt from Australia and China in implementing this type of program. Chapter ten of this thesis provides a conclusion generated from the findings chapters.

Chapter 2. Global Challenge and Needs to Address Health-Risk among Adolescents in Preventing Chronic Diseases

2.1. Introduction

Evidence have shown that major chronic diseases in adults are related to childhood life, in terms of disease risk factors. Health-risk behaviour as the disease risk factor, is formed from the early teenage years or adolescence. Therefore, it is fundamental to understand health-risk during adolescence to create healthy behaviour in order to prevent chronic diseases and to build a better quality of life among the young generation. The purpose of this chapter is to understand the health-risk issues and behaviour among adolescents in the global perspective and in Indonesia.

This chapter will review the information of improving adolescents' health-risk behaviour to enable them to have a better learning and growing process as well as to prevent chronic diseases in their future life. This chapter will review four aspects; chronic illness and its risk factors; health-risk issues in adolescents; health-risk issues among Indonesian adolescents and the factors underpinning health-risk issues in adolescents.

2.2. Chronic disease and its risk factors

Currently, chronic disease or non-communicable disease (NCD) is the most common cause of death worldwide that increasingly occurs in young adult and the elderly in recent times (WHO, 2005b). Morbidity rates of NCD have increased sharply in most countries in the world, which leads to higher mortality rates and disability. The World Health Organisation (WHO) estimates that NCD as the major cause of death among adults will increase about 17% by the year 2015 worldwide (WHO, 2005b).

Chronic disease is a main health issue not only in well developed countries but also in developing countries. In developing countries such as Indonesia chronic diseases accounted for 61% or all deaths in 2002 (WHO, 2005b). In Nigeria, it is estimated that heart disease, stroke, cancer and diabetes will be the leading cause of death by 2015, while India predicted that 66.7% of all deaths will be related to chronic diseases by 2020 (WHO, 2005b). About 160 million adults in China have hypertensive-related diseases (WHO, 2005b). In well developed countries such as Australia, the first leading

underlying cause of death was ischemic heart diseases (16%) in 2007. Data from US showed that smoking related disease such as lung cancer, ischemic heart disease, and Chronic Obstructive Pulmonary Diseases (COPD) were the most common cause of death during 2000 – 2004 (see Figure 2.1 below) (CDC, 2004). Data from the world bank showed that the total deaths caused by chronic diseases was actually higher in low and middle income than upper middle and higher income countries (WHO, 2005b). From a macro perspective, NCD affects more low and middle-income countries, because they have limited resources and complicated health systems for prevention programs. Global development and a country's growth contribute to the health status of the population, which become world challenges.

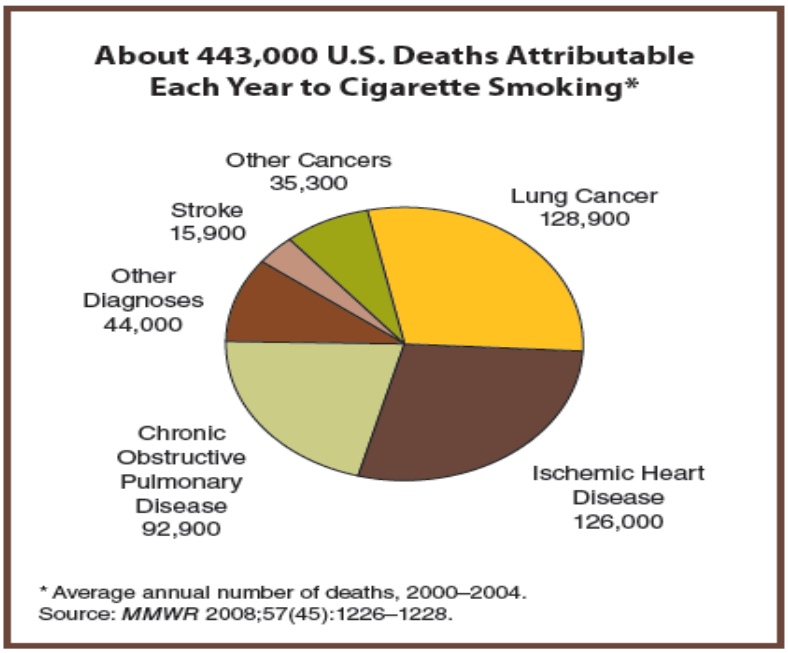

Figure 2.1 Deaths Attributable to Cigarette Smoking in US during 2000-2004 Source: CDC, 2008

(http://www.cdc.gov/tobacco/data_statistics/tables/health/attrdeaths/index.htm)

World challenges such as urbanisation and globalized life style change bring non-communicable diseases, such as depression, diabetes, cardiovascular diseases, cancers and injuries, as main causes of morbidity, disability, and mortality (WHO, 2008). The World Health Organization also predicted that traffic accident and tobacco-related diseases will increase tremendously worldwide in the next 30 years. The WHO also reported that premature tobacco-attributable deaths from ischemic heart disease,

cerebrovascular disease, and chronic obstructive pulmonary disease are estimated to increase from 5.4 million in 2004 to 8.3 million in 2030 (WHO, 2008).

Major chronic diseases, such as heart disease, cancer, chronic obstructive pulmonary diseases (COPD), diabetes and stroke are all related to multi-risk factors which are often interrelated (Bennet et al., 2008). The risk factors include inadequate diet, smoking, lack of physical activity, alcohol consumption, obesity, hypertension, hyperglycaemia and hyper cholesterol (WHO, 2002b). Most of the chronic diseases have more than single risk factors that lead to higher mortality risk.

Table 2.1. Major Chronic Illness and Common Risk Factors (Source: WHO, 2002)

Risk factors	*Stroke*	*Heart diseases*	*Cancer*	*Diabetes Mellitus*	*COPD*	*Hypertensive/ cardiac diseases*
Smoking	√	√	√		√	√
Blood pressure	√	√				√
Overweight	√	√	√	√		√
Imbalance of diet	√	√	√	√	√	√
Physical inactivity	√	√	√	√		√
Alcohol abuse	√	√	√	√		√

As seen in Table 2.1, one risk factor leads to several chronic diseases and each risk factor also relates to each other. As an example, a smoker can have risk of stroke, heart diseases, cancer, COPD, and hypertensive or cardiac diseases. Combinations of more than one or all of those risk factors lead to the risk of having more than one major chronic disease. Three main interrelated risk factors of chronic diseases, which are related to behaviour or called health-risk behaviour, include smoking, unbalance of diet, alcohol abuse and physical inactivity.

Smoking is a very harmful behaviour in many ways. Biological-based evidence explains the negative effect of tobacco on the human body, which includes nicotine, carbon

monoxide, carcinogen benzo and oxidative stress (CDC, 2004). The epidemiology-based evidence showed that cigarette smoking also diminishes health status and increases morbidity of respiratory, oral, lung, heart and other human organs (CDC, 2004). In combination with imbalance of diet, smoking can cause more serious and complicated chronic diseases.

Imbalance of diet has causal impacts on major chronic diseases such as heart diseases, hypertensive diseases, diabetes mellitus, stroke and cancer. Unbalance of diet refers to either too little or too much of certain nutrients or foods. An over intake of fat based food increases the total blood lipid which over a period of time leads to cardiovascular diseases, stroke, overweight and other blood lipid-related diseases (WHO, 2003a). Over consumption of high glucose index foods that raise the blood glucose level causes type 2 diabetes (WHO, 2003a). Meanwhile consuming insufficient fruits and vegetables over a long period relates to a greater risk of certain cancers. Basically, fruits and vegetables are high in fibre, vitamin C, and antioxidants, which prevent any of the carcinogenic effects from pollutants or other carcinogenic agents and processes, as well as lowering the blood glucose level (WHO, 2003a). Overall excess of calorie intake without adequate physical activity leads to overweight which is also a risk for all major chronic diseases (WHO, 2002b, 2003a). Physical inactivity cannot be separated from diet in terms of preventing overweight, cardiovascular disease and certain cancers.

Alcoholic drinks are very common in most of the Western, European, and some Asian cultures, and causes some health and social issues via intoxication, dependence and long term heavy consumption (WHO, 2002b). Intoxication leads to damaging outcomes such as car crashes or domestic violence, chronic illness and social problems. Alcohol dependence and long term consumption of heavy alcoholic drinks was the risk of liver cirrhosis, liver cancer and oesophagus cancer (WHO, 2002b).

Physical inactivity is a risk factor for overweight and cardiovascular disease, certain cancers and type 2 diabetes. Regular physical activity generally improves glucose metabolism, reduces body fat and lowers blood pressure (WHO, 2002b). Besides, physical activity lowers the risk of colon cancer because of reduced intestinal transit time and an increase in antioxidant level (WHO, 2002b). It also improves the hormonal metabolism that reduces the risk of breast cancer (WHO, 2002b). Physical activity reduces the risk of almost all of the major chronic diseases. Nevertheless, chronic diseases prevention should engage all the related risk factors as well.

Without a strong prevention strategy, chronic diseases can cause serious direct and indirect impact in life that influences almost all aspects of life. Burdens of chronic diseases includes poorer quality of life, disability, premature death and huge adverse economic effects on families, communities and societies in general (WHO, 2005b). Prevention strategies focusing on risk factors that can be modified is necessary.

Preventing chronic disease through modifying lifestyle related risk factors or health-risk behaviour is crucial for ensuring a good quality of life and for reducing expenditure on treatment. (Bennet et al., 2008). However, health programmers in some ways pay less attention to the population health intervention to address the common risk factors of chronic diseases, even if it was proven that it is cost effective and able to reduce significantly premature deaths by 47% and improve global healthy life expectancy by 9.3 years (WHO, 2008). As an example, in the case of Indonesia, the health authorities pay more attention to the clinical or curative strategy rather than to the promotive and preventive strategy by giving free medical treatment for lower income group. This will lead to issues that are more complicated because the chronic diseases become common in lower income group.

In Indonesia the pattern of death causing diseases has changed from communicable diseases to non-communicable diseases or chronic diseases. Indonesia Household Health Survey shows that the percentage of communicable diseases as death causing diseases decreased from 69.49% in 1980 to 44.57 % in 2001, meanwhile the percentage of non-communicable diseases as death causing diseases increased from 25.41% in 1980 to 48.53% in 2000 and 61% in 2002 (WHO, 2002a). The morbidity rate of NCD in Indonesia increased between 1995 and 2001. The prevalence of hypertension rose from 8.3% in 1995 to 21 % in 2001, the prevalence of diabetes mellitus increased from 1,2% in 1995 to 7.5% in 2001 (SKRT, 2001). The survey in 2007 showed that the three highest causes of death for age five years and above were stroke (19.4%), diabetes mellitus (9.7%) and hypertension (7.5%) (Indonesia Ministry of Health (MOH), 2007). The Indonesia National Health Survey showed that stroke was the highest cause of death for adults (Indonesia Ministry of Health (MOH), 2007). Particularly for the age group of 55 to 64 years stroke and hypertension were the highest cause of death (26.8% and 8.1% respectively) (Indonesia Ministry of Health (MOH), 2007). These facts lead to the importance of risk factor intervention approach for primary and secondary disease prevention.

There is chronic disease risk factor exposure through the whole life cycle beginning early in foetal life and continues into old age. The exposure of risk factors can be classified into several stages, starting during foetal development and maternal development; infancy; childhood and adolescence; adulthood; aging and older age (WHO, 2003a). Consequently, it is important to start focusing on health-risk issues to prevent chronic diseases in adult age by building a healthy life style as early as adolescence.

Focusing on the health-risk of adolescents is crucial because of specific characteristics of adolescents that put them at greater risk compared to younger age, at being exposed to the unhealthy behaviours which may lead to greater risk of chronic diseases or any other diseases that bring negative influence on their learning life and quality of life in their future.

2.3. Health-risk during adolescence

Adolescence can be divided into different categories, such as based on age and behaviour characteristics. Based on age, it can be categorized into three age groups, 10 to 13 years old as an early adolescents, 14 to 17 years old as middle adolescence, and 18 to 21 years old as late adolescents (Neinstein, 1991). In terms of behaviour characteristic, adolescence refers to the period when they are most likely to engage in an activity with a level of risk of being caught and being punished, because they tend to try new experiences and to experiment with breaking the rules (e.g. skipping school without parental permission, coming home later from school) (Rew, 2005). This unique behaviour characteristic influences other aspects in adolescents life, including their health status.

The health status during adolescence has strong association with behaviour because adolescence is a transition period between childhood when they still rely on adult decisions and young adult life when they first have responsibility of their own behaviour, particularly on health-related behaviour. There are different terms to describe behaviour issues during adolescence, including problem behaviours, risk taking behaviour, deviant behaviours, risky behaviours, and health-risk behaviours (Rew, 2005). The term risk taking behaviour has also been used for potentially health-damaging behaviours such as substance use, unsafe sexual behaviour, reckless vehicle use, homicidal and suicidal behaviour, eating disorders and delinquency (Igra & JR, 1996). Health-risk behaviour is mainly used to address issues related to health status during adolescence.

The term health-risk behaviour during adolescence is generated from epidemiological and psychological perspectives. The concept of *risk* in the epidemiology discipline means the probability of loss, injury, illness or disability (DiClemente et al., 1996). Psychologically, adolescents are most likely to have strong motivation to engage in activities with associated risk of health or life threatening outcomes, including experimentation with sexual behaviour, smoking, and alcohol use (Rew, 2005). These latter behaviours are considered as health-risk behaviours because they threaten the development, health, and well-being of adolescents. As adolescents become more independent and begin to experiment with new behaviours, some of these behaviours place them at risk for potentially negative health consequences whereas some health-risk behaviours such as unhealthy diet, smoking, physical inactivity and alcohol abuse during adolescence may also lead to major chronic diseases as long term effects (Green & Kreuter, 1999).

A study by Hemmingsson and Lundberg (2004) in Sweden showed that measuring the predictors of coronary heart diseases (CHD) during adolescence may describe a substantial part of the social gradient in CHD, cardiovascular mortality, and all-cause mortality among the 40–50 year old males in the study. Several common CHD risk factors, such as blood pressure, obesity, and blood cholesterol assessed in adolescents and young adults predict CHD risk in the future years (Hemmingsson & Lundberg, 2005). Those risk factors are also known as diet-related risk factors, which include excessive intake of salt, calorie, and fat from the dietary habit, which will lead to nutrition-related diseases.

Childhood body weight can predict the nutrition related diseases, such as obesity and diabetes mellitus in adult life (Hayman, 2002). Overweight children have greater risk of becoming obese adults; meanwhile, obese children also have a higher risk of remaining obese in older age (Hayman et al., 2002). A study by Rojas and Menchaca in 2006 showed that one third of the students in North Texas were overweight and nearly one fourth of the children in that study were at risk of developing type 2 diabetes mellitus (Rojas & Menchaca, 2006).

The health-risk among adolescents is not only related to chronic diseases but it also associated with other diseases that may lead to disability and mortality. The WHO identify health-risk among adolescents related to the leading causes of morbidity and mortality among youth and adults worldwide as the following (WHO, 2000):

- Smoking
- Unhealthy Diet
- Physical inactivity
- Emotional/mental health problem
- Unhygienic behaviour
- Sexual behaviors that contribute to HIV infection, other STI, and unintended pregnancy
- Violence and unintentional injury
- Alcohol and other drug use

The following sections describe more specifically the common behaviour risk factors among adolescents mentioned above.

2.3.1. Smoking

Cigarette smoking is one of the major health issues in the world that threatens the population health of all ages in both developed countries and developing countries. Smoking is a health-risk behaviour that is important during adolescence. Adolescents who smoke regularly are exposed to the addictive effect of tobacco, which most likely will continue into adulthood (Perry & Staufacker, 1996).

In developed countries, such as in Australia, smoking is one of the health-risk issues among adolescents. A school-based survey in 2005 showed that the prevalence of ever smoked in Australian adolescents aged 12 to 15 years was 29% among non-Indigenous and 47% among Indigenous populations (White et al., 2009). The survey involved 376 schools across Australia and about 673 Indigenous students and 13,873 non-Indigenous students (White et al., 2009). Particularly in Queensland, the 2008 health report stated that 17.2% of Queenslanders aged 14 and older smoke daily. The report also said that about 20.3% of women smoke during pregnancy and the percentage was higher among teenage and Aboriginal and Torres Strait Islander mothers (Young, 2008).

In developed Asian countries such as Taiwan and China (Hong Kong) the prevalence of smoking was also alarming. The survey in 2004 showed that the prevalence of currently smoke among junior high school students was 7.4% in males and 3.2% in females in Taiwan (Chen et al., 2008). In Hong Kong, a survey in 1999 showed that the prevalence of adolescents who currently smoke cigarette was 4.4% in males and 3.8% in females (Lee & Tsang, 2004).

In the less developed countries, such as in India, the issue of tobacco use is as in developed countries. A study in Chennai city found that the prevalence of tobacco use among school children was 41.1% in 2005 (Kumar et al., 2006). A survey in rural areas in the Jamnagar district in India in 2006 showed that 33.1% of adolescents aged 10 to 19 were addicted with one or other type of tobacco chewing (Makwana et al., 2007).

Some negative health effects of smoking have been clearly and comprehensively documented. The major chronic tobacco related diseases include respiratory cancer, chronic obstructive pulmonary diseases, as well as respiratory and cardiovascular diseases.

According to incidence and prevalence data, smoking is the main cause of cardiovascular diseases and related medical and social costs (Morewitz, 2006). One study of 1,398 adolescents and young adults showed that smoking, along with three other lifestyle habits, obesity, physical inactivity, and the use of butter were related to a 5.5 times higher risk of three cardiovascular risk factors: high LDL-cholesterol, low HDL-cholesterol, and high diastolic blood pressure (Morewitz, 2006). A study among aboriginal Canadian youth, showed that children who smoke six or more cigarettes per day after adjusting for age, sex, and BMI, were found to have a significantly higher mean of systolic blood pressure (p value: 0.036) and higher mean of plasma homosysteine level (p value: 0.008) (Retnakaran et al., 2005). Also, tobacco in any category or product leads to higher levels of stress compared to nonusers and puts youth at an increased risk (Brooks et al., 2008).

For adolescents, tobacco use will affect health in the short term as well as in the long term. In the short term, adolescents who smoke have higher rates of respiratory problems, lower levels of physical fitness, higher levels of triglycerides, and lower levels of high density lipoproteins, compared to adolescents who do not smoke (Henderson et al., 1998). In the longer term, cigarette smoking also has strong relationship with lung cancer among adolescents (Strand et al., 2004). This means that it is vital to make the younger generation more aware of the impact of smoking on their health and quality of life today and in the future.

Exposure to tobacco smoke can also affect non smokers by inhaling the cigarette smoke in an indoor space. The American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) defined two forms of tobacco smoke as *" the burning cigarette produces smoke primarily in the form of mainstream smoke (MS) – that smoke inhaled by the smoker during puffing – and sidestream smoke (SS) – that smoke released by the smouldering cigarette while not being actively smoked"* (Samet et al., 2005, p. 4). The SS

also refers to Environment Tobacco Smoke (ETS), passive smoking or involuntary smoking.

Involuntary smoking also gave a negative health impact on children and adolescents, particularly those whose parents are smokers. The health effects of involuntary smoking in children and adolescents, were increased prevalence of respiratory diseases, decrement in pulmonary function, increased frequency of chronic cough, bronchitis and pneumonia, middle ear effusion, increased severity of asthma, and risk factor for new asthma (Samet et al., 2005). A study in Europe showed that expose to tobacco smoke related to allergic sensitisation among children which lead to higher school absenteeism (Parker et al., 2009).

Regular smoking among adolescents most likely can be predicted by environmental smoking such as parents, peers and best friends (Otten et al., 2009). Smoking initiation is associated with parental involvement as well as parental tobacco use and permissiveness of home tobacco use (Muilenburg et al., 2006). A study in middle and high school students in Maryland, United State of America (USA), illustrated that the likelihood of youth being current smokers was positively associated with both parental smoking (in the comparison of parents with minimal concern versus strict concern about smoking: Odds Ratio: 2.3, 95% CI 2.1-2.4) (Kalesan et al., 2006). It is imperative to include the environmental smoking in the prevention program for adolescents (Otten et al., 2009).

Smoking among adolescents also relates to social image. A study among Mexican Americans aged 11 – 13 years illustrated that subjective social status significantly contributes to the smoking status among adolescents. The results of the study suggested the possibility that moderate-low social status adolescents assume smoking as a way to attain higher social status among Mexican American youth (Wilkinson et al., 2009).

Smoking prevention and cessation programs need to involve family members such as parents or older siblings and peers. Smokers are most likely to have more motivation to quit smoking when other family members and peers support them. A study in North Carolina, USA, during 1998- 1999, found that most of the mothers (90%) who smoke think that it is important to have their elementary school-aged children help them quit smoking (Tilson et al., 2001).

Peer group approach is one of the main strategies in tobacco use prevention among adolescents. A study in Ohio, USA, during 1999- 2000 concluded that prevention programs for seven to 12 graders should focus more on the peer group approach. This is

because of the higher rate of cigarette smoking and alcohol use among those students are closely related to perceptions that these substances are frequently used by close friends, followed by being older, perceiving that typical students frequently drink and smoke and this group have relatively low average academic function (Olds & Thombs, 2001).

Tobacco consumption is a preventable cause of death. Strategies to prevent smoking among adolescents developed by USA health authorities includes different approaches such as community-based approach, school-based approach, and health service- based approach. A combination of these approaches lead to a more effective prevention strategy for adolescents smoking cessation and prevention program (Krowchuk, 2005).

Prevention of cigarette smoking in adolescents using school-based setting can be an effective approach. School-based setting can actually involve peers, parents, and community members as part of the school community. A study among middle school students in Marion County, USA during 1997 to 2000, showed that the life skill training curriculum program had a significant positive impact to smoking prevention (Zollinger et al., 2003).

2.3.2. Unhealthy Diet

Health issues related to diet as a lifestyle risk factor can be varied depending on the different socio-demographic conditions of the population at risk. Malnutrition can be the main diet issue for a disadvantaged population such as people who have lower social economic status and less access to food as well as individuals with abnormalities in nutrient metabolism (Hayman et al., 2002; Tershakovec & Horn, 2002). Meanwhile over nutrition can be a priority issue for the population living in areas with more access to food and having a sedentary lifestyle. It is a very common pattern, in countries where the socio-economic status is improving and the dietary intake is also increasing (Hayman et al., 2002; Tershakovec & Horn, 2002).

Over nutrition intake that lead to overweight and obesity is the main dietary behaviour problem among adolescents in more developed countries. Prevalence of overweight is alarming among adolescent in most big cities globally. A survey in the US showed that the prevalence of students at risk of being overweight (BMI >= 85th percentile) was 46.5% and the prevalence of overweight students (BMI >= 95th percentile) was 29.1%. Meanwhile a survey in the state of Georgia, showed the prevalence of overweight children was 20.2% (Lewis et al., 2006). The overweight cases in this study also have significant

association with elevated blood pressure (King et al., 2006). Overweight and obesity among adolescents is also a public health issue in Australia. Particularly in Queensland, a Survey in 2006 showed the percentage of overweight students aged 5 to 17 years was 14.6% in males and 17.7% in females (Abbott et al., 2006). Meanwhile the developing countries or less developed countries experience mainly issues of food hygiene and undernutrition (WHO, 2003a). However, in some western countries eating disorders such as anorexia nervosa and bulimia, which lead to an under nourished condition, also commonly occur in female adolescents (Ponton, 1996).

There are two concepts of dietary behaviour issues among adolescents. Firstly, the eating behaviour during adolescence will influence their health, secondly, their eating behaviour builds the adult eating pattern (Henderson et al., 1998). Daily eating habits in younger age may lead to short term risks, while the chronic disease risks reveal years of eating pattern (Henderson et al., 1998). The long terms effect of unhealthy dietary behaviour during adolescence may lead to chronic diseases during adult life.

Worldwide evidence shows a significant relationship between diet and chronic illnesses such as heart diseases in adult and younger age from many years ago. Table 2.2 shows several studies illustrated by Andrew M Tershakovec and Linda Van Horn in Hayman (2002), which indicated the link between diet and cholesterol level.

Table 2.2. Several studies of relationship between diet and cholesterol level

Sources	Findings	Target group
Shea and colleagues, 1991	Significant relationship between total fat and saturated fat intake and cholesterol level	4 – 5 years old Hispanic children
Bogalusa Heart study, Frank, Berenson, & Webber, 1978	Positive association between saturated fat intake and cholesterol level	10 years old children
Niklas, 1988	Positive association between dietary cholesterol and cholesterol level	4 and 7 years old children
McGill et al, 2000 Newman et al, 1986	Correlation between blood lipid levels and early atherosclerotic changes	Children and young adults

For overweight and obesity, high calorie intake may be the main issues that need to be addressed. Children and adolescents commonly prefer to eat sweets or any sweet tasting foods. This preference can lead to positive or negative impact for adolescents dependent on how much they consume sweet foods. Excess sweet food consumption causes overweight, tooth decay, high blood sugar or may be type II Diabetes in certain conditions. A study found that sugar-sweetened beverages, sugars and sweets, and sweetened grains had a negative impact on diet quality, but sweetened dairy foods and

beverages as well as pre-sweetened cereals had positive impact as they also contain high calcium (Frary et al., 2004).

The traditional method of gaining knowledge and skill of dietary behaviours is not always necessarily followed by change in behaviour. Evidence from several studies showed no significant difference of dietary knowledge between obese and non-obese groups (Casazza & Ciccazzo, 2006). Computer-based approach is an alternative strategy to improve dietary pattern of adolescents that is more effective for behaviour change. Children practicing one of the computer-based interventions to increase fruits and vegetables intake increased their fruits and vegetables consumption by 1.0 serving more than the control group (Casazza & Ciccazzo, 2006). This approach may be effective when applied in schools that have more resources, but it may be difficult to be applied in schools with limited resources because of less access to the computer.

For adolescents, food strongly relates to love, affection, and friendship (WHO, 1998b). Therefore, a school-based program can be one of the effective approaches to prevent diet related health problems, because schools are the place where adolescents make friends and develop relationships with peers, teachers, and parents. In terms of the school setting, the food that is available in the school will give a significant influence for food preference among adolescent.

2.3.3. Physical inactivity

Physical activity for adolescents is important for growth mechanism as well as to prevent the risk of having some major chronic diseases. Adolescents need to be physically active to obtain optimum growth (Kemper, 2002). Physical inactivity is one of the vital risk factors of several chronic diseases such as cardiovascular diseases, cancer, obesity, diabetes mellitus, chronic obstructive pulmonary diseases (COPD), osteoporosis and coronary heart diseases (Hayman et al., 2002). Health experts agree that an adequate amount and intensity of regular physical activity can reduce the atherosclerotic process, which means reducing the risk of heart diseases (Kemper, 2002).

The importance of physical activity in preventing chronic diseases has been found through a number of epidemiological studies. A review of forty-three studies done by Paffenbarger and others in 1986 indicated that the population attributable risk (PAR) for physical activity on all causes of mortality, including CHD, was higher than other risk

conditions such as hypertension, hypercholesterolemia and smoking, because of large number of respondents in that study were physically inactive (Kemper, 2002).

Physical inactivity becomes an important issues since evidence showed that as the children grow older the less they did the physical activity. A study by Rowland in 1990 described that total daily energy expenditure per kilogram of body weight (kcal/kg) decreased between the age of 6 to 14 years by almost 50% in both boys and girls (Kemper, 2002). It is also known that physical activity was associated with decreased likelihood of depression among youth (Goodwin, 2006).

Globally, physical inactivity was predicted as causing 1.9 million deaths, about 10 – 16% of each breast cancer, colon, and rectal cancer and diabetes mellitus and 22% of ischaemic heart disease (WHO, 2002b). Countries such as in Europe, USA and Canada, experienced a higher proportion of deaths attributable to physical inactivity (8-10%), compared to other regions (WHO, 2002b).

Contributing factors to physical inactivity among adolescents are mainly related to environmental, social, psychosocial factors and gender. Environmental aspects refers to physical environment such as facilities availability and access for adolescents to keep active, while the social and psychosocial aspects refer to support from active peers, parents, and school personnel (Andersen et al., 1998; Neumark-Sztainer et al., 2003; Norman et al., 2005; Prochaska et al., 2002). In addition, self-perception in physical activity is also an important aspect in making physical activity as part of their priority in daily activities (Neumark-Sztainer et al., 2003; Norman et al., 2005). Besides, sedentary behaviour among adolescents particularly watching TV, sitting when playing computer games, in combination with excess calorie intake and high physical inactivity are known as a risk factors for children's overweight (Norman et al., 2005). Also, there is a gender difference in physical activity among adolescents. A study showed males were more engaged with physical activity than female students (Wu et al., 2006).

Scientific evidence has shown that physical activity affects individual health in both adolescents and adult. An international conference on physical activity in 1994 resulted with guidelines for the general adolescent population, as follow (Hayman et al., 2002, p. 105; Kemper, 2002, p. 105):

1. *All adolescents should be physically active daily, or nearly every day, as part of play, games, sports, work, transportation, recreation, physical education, or planned exercise, in the context of family, school, and community activities. The*

activities should be enjoyable, involve a variety of muscle groups, and include some weight bearing activities. The intensity or duration of the activity is probably less important than the fact the energy is expended and a habit of daily activity is established.

2. *Adolescents should engage in three or more sessions per week of physical activities that last 20 minutes or more and require moderate to vigorous levels of exertion. Moderate to vigorous activities are those that require large muscle groups and at least as much effort as more than seven times their basal metabolic rate.*

Intervention or promotion programs for physical activities have been developed using a variety of methods. School sports participation is known to be associated with physical and mental health benefits (Harrison & Narayan, 2003). Family support also gives positive contribution for physical activities in school (Kuo et al., 2007). Creating a supportive environment, particularly in school, is important to motivate the students to keep active and join the sport activities. The intervention strategy can not be separated from other related health risk issues such as unhealthy diet, as they are strongly related to each other in order to prevent overweight and obesity in adolescents.

A school-based intervention strategy to increase physical activity among adolescents is one of the solutions. Because it can combine a variety of methods such as family support and other supportive environments as well as integrate the activities with other health-risk issues required by the school community.

2.3.1.4. Emotional/mental health problem

The term mental health can be defined in different perspectives. According to WHO, mental health refers to a positive state of psychological well-being, "*the capacity of the individual to form harmonious relations with others and to participate in or contribute constructively to, changes in his social or physical environment…*" (Pilgrim, 2005, p. 3). Meanwhile, mental health promotion can be understood as "*the promotion of happiness, the right to freedom and productivity, the absence of mental illness, and the fulfilment of an individual's emotional, intellectual and spiritual potential*" (Pilgrim, 2005, p. 117).

For all individuals, mental, physical and social health are vital strands of life that are closely interwoven and deeply interdependent. Globally, in recent times mental health issues are increasingly becoming one of the major public health issues, especially after

the global financial and economic crisis. About 450 million people worldwide suffers from a mental or behaviour disorder, but only very few receive basic treatment (WHO, 2001). One of the mental health issues, unipolar depressive disorders, is the number four leading cause of disability-adjusted life years (DALYs) in all ages (WHO, 2001). Particularly for adolescents, mental health is crucial as many mental disorders in adults begin during childhood and adolescence (WHO, 2001).

Mental and behavioural disorders become common in childhood and adolescents. There is a relatively high figure of depression during adolescents and young adulthood (Lewinsohn et al., 1993). The prevalence of mental and behaviour disorders in children and adolescents in different countries and ages between 1993 to 2001 can be seen on Table 2.3. A survey in Zurich, Switzerland in 1998 found that the highest prevalence of child and adolescents psychiatric disorders was 22.5%.

Table 2.3. Prevalence of child and adolescents behavior/psychiatric/mental disorders in selected studies

Country	Age (years)	Prevalence (%)
Ethiopia [1]	1-15	17.7
Germany [2]	12-15	20.7
India [3]	1-16	12.8
Japan [4]	12-15	15.0
Spain [5]	8,11,15	21.7
Switzerland [6]	1-15	22.5
USA [7]	1-15	21.0

Sources: WHO, 2001, p.36

[1] Tadesse B et al. (1999). Childhood behavioural disorders in Ambo district, Western Ethiopia: I. Prevalence estimates. Acta Pshychiatrica Scandinavica, 100 (Suppl):92-97.

[2] Weyerer S et al. (1988). Prevalence and treatment of psychiatric disorders in 3 -14 year-old children: results of a representative field study in the small rural town region of Traunstein, Upper Bavaria. Acta Psychiatrica Scandinavica, 77:290-296

[3] India Council of Medical Research (2001). Epidemiological study of child and adolescent psychiatric disorders in urban and rural areas. New Delhi, ICMR (unpublished data).

[4] Morita H et al. (1993). Psychiatric disorders in Japanese secondary school children. Journal of Child Psychology and Psychiatry. 34:317-332.

[5] Gomez-Beneyto M et al. (1994). Prevalence of mental disorders among children in Valencia, Spain. Acta Psychiatrica Scandinavica, 89: 352-357.

[6] Steinhausen HC et al. (1998). Prevalence of child and adolescent psychiatric disorders: the Zurich Epidemiological Study. Acta Psychiatrica Scandinavica, 98: 262-271.

[7] Shaffer D et al. (1996). The NIMH Diagnostic Interview Schedule for Children version 2.3 (DISC -2.3): description acceptability, prevalence rates, and performance in the MECA study. Journal of the American Academy of Child and Adolescent Psychiatry. 35:865-877.

The mental health issues that commonly occur during adolescence are related to depressive disorders and substance use dependency (WHO, 2001). The substance use dependency are mostly related to drugs, alcohol and tobacco (WHO, 2001). The depressive disorder is defined as condition of sadness, loss of interest in activities and decreased energy. Also, it includes other symptoms such as loss of confidence and self-esteem, inappropriate guilt, thoughts of death and suicide, diminished concentration and disturbance of sleep and appetite (WHO, 2001). As suicide is a mental-related cause of death, early signs of suicide or suicide attempt is considered as a serious mental health disorder.

Suicide is the second leading cause of death among youth age 15 to 19 years in US, and for each adolescence suicide, it is predicted 200 adolescent attempt suicide (Conner et al., 2007). Suicide is the fifth leading cause of death for age 15 to 34 years in China, which is strongly related to long standing difficulities such as depression, chronic stress and previous exposure to suicidal behaviour (Conner et al., 2007). A study among high school students in US in 1997 described several behaviours that are associated with attempted suicide, including substances use initiation, physical and sexual abuse, which occurred early in life before students reach high school (Thatcher et al., 2002). Bulimic episodes are also known to be significantly associated with suicide attempt in adolescents (Thatcher et al., 2002).

Another important mental-related issue during adolescence is bullying, which occurs more frequently nowadays. Bullying is one of the common emotional or psychological related health issues among adolescents that may lead to greater risk of anxiety disorders during adolescence and adulthood (Due et al., 2009). Also, bullying in adolescents is known as a contributing factor in many of the tragic school shootings in some countries (Due et al., 2009). A study in USA showed that adolescents who attend schools and live in countries where socioeconomic differences are bigger are at greater risk of being bullied (Due et al., 2009).

Several risk factors for mental health disorders during adolescence are poverty, single parent family, marital discord, divorce, parental mental illness and substance use, abuse and neglect, exposure to extreme violence, chronic physical illness, developmental delay and mental retardation (Sells & Blum, 1996). Psychological problems that occur during adolescence along with lower paternal status predict mental health problem during adulthood (Pilgrim, 2005).

In the psychological perspective, the intervention strategy needs social support and networking from family, peer group and community to be focused on increasing problem solving and decision making skills, as well as to provide effective role models (Pender & Stein, 2002).

The intervention strategy for emotional or mental issues among adolescents could apply a different approach. Specifically for suicide attempt behaviour, prevention may be directed toward social stressors, vulnerabilities of the individual, and availability of suicide methods. This means the prevention strategies may include community involvement, gaining knowledge and skills in suicide and problem solving and restricting access to suicide opportunity (Y. Cohen et al., 1996). School-based screening for suicide prevention is useful to identify suicidal and emotionally troubled students (Scott et al., 2009). Another example of a depression intervention program for adolescents is an intervention program in a school setting, the universal intervention, which combines two major cognitive-behavioural components, cognitive restructuring and problem-solving skills training (Sheffield et al., 2006).

A school-based intervention program is an alternative approach to prevent depression among adolescents, but the strategy should be focused not only for gaining knowledge and awareness because it may not always lead to behaviour change. More integrated and multi-sector approaches are more effective for the intervention or prevention strategy to address mental health problems among adolescents. Involvement of parents, peer groups and supportive social environments are also an important part in the school-based setting approach.

2.3.5. Hygiene and Sanitation

The word sanitation is generated from the Latin word, *sanitas*, which means 'health'. Sanitation is an applied science that is related to the concepts of maintenance, restoration, or improvement of hygienic practice (Marriott, 1999). Sanitation and hygiene are two

words that relate to each other to protect individuals from infectious diseases and hazardous elements (Marriott, 1999).

Sanitation is one of the main issues in infectious diseases prevention particularly in developing countries or huge population countries, because the most common infectious diseases such as diarrhoea are strongly related to the sanitation condition. Poor sanitation, hygiene and unsafe water are serious worldwide issues that cause the death of around 1.5 million children under five annually, mainly because of diarrhoeal diseases (Black & Fawcet, 2008). Diarrhoeal disease is still one of the major causes of death for children (5 to 14 years old) in developing countries (WHO, 2003c).

Hygiene and sanitation in the school setting involves issues in the school physical environment that also relate to safe water facilities, toilet facilities and safe food availability (WHO, 2003c). In addition, oral hygiene among adolescents, as part of hygienic behaviour, is essential in gaining adolescents health (WHO, 2003e). These aspects contribute significantly to create a healthy learning environment for the school community.

Inadequate food sanitation leads to food borne illness which has general symptoms such as headache, abdominal pain, nausea, diarrhoea, vomiting, fatigue, dehydration or fever (McSwane et al., 2006). Particularly for school age children and adolescents, food sanitation is crucial because school is one of the retail establishments where most food borne illness outbreaks occurred, besides in restaurants, camps, institutions, supermarkets, churches, vending locations, and any other places that provide a massive amount of food for public consumption (McSwane et al., 2006). In most developing countries school age children and adolescents may have higher risk of getting food borne illness at school, as they have higher accessibility to food provided by the school or from the street vendor.

Food borne hazards that can cause illness or injury include biological, chemical, or physical hazard. The biological hazards are bacteria, viruses, and fungi that are found or grow in the food. Chemical hazards include any toxic substances that can be naturally part of the food or added during food processing. Meanwhile the physical hazards include hard or soft unfamiliar substances such as glass, metal, wood, human hair and other non edible food that can cause injury or illness (McSwane et al., 2006).

Unsafe food and water are known to cause most diarrhoeal or infectious diseases (WHO, 2003c). Table 2.4. shows several cases related to unsafe food that caused school children morbidity and mortality.

Table 2.4. Foods implicated or suspected to have caused disease in school children and college students
• **In 1981 in the United Kingdom, 2500 children were infected with Campylobacter enteritis by drinking milk.** • **In 1984 in Malaysia, 114 students were infected with Bacillus cereus from eating fried noodles.** • **In 1992 in Saudi Arabia, cake with cream topping infected 14 school aged children with Salmonella typhi.** • **In 1993 in the USA, 80 children aged six and under were infected by Bacillus cereus from eating chicken fried rice.** • **In 1996 in Japan, 8753 children were infected by E.coli from eating radish sprouts** • **In 1996 in Indonesia, 152 children aged 7 to 12 were infected with E coli, when they ate sweetened green-been porridge with coconut milk. Two death resulted.** • ***In 2004 in Bali, Indonesia, 159 students suffered food poisoning by *Staphylococcus* bacteria from eating rice meal in school canteen, 65 of them were hospitalized.**

Sources: WHO, 2003c; * (Antara, 2004).

Poor oral hygiene can cause oral diseases, including dental caries. Dental caries is the most frequent oral health problem that mostly occurs in children and adolescents. About 80% or approximately 20 million children and adolescents younger than nineteen years in low income families have tooth decay. In US, students aged five to seventeen years lost 1.6 million school days because of acute dental problems. It is also known that dental caries is the single common chronic disease of childhood in many countries (Christina S. Melvin, 2006). Even in a very well developed country like US, dental care is still the most prevalent unmet health need in children (Mouradian et al., 2000).

Oral health problems in school age children may lead to poor academic performance in school as they may get distracted from the pain, having difficulty in speech and eating, and chronic toothache (Christina S Melvin, 2006). Having oral health problems also means they become unsociable and have less interaction with peers (Christina S Melvin, 2006).

Hygiene and sanitation related diseases frequently occurr among the most impoverished population. Lessons learnt from different countries show that this target population not only have limited social economic condition but also they have different perceptions, concepts and values about sanitation, cleanliness, and health, which are affected by their culture, beliefs, and environmental aspects. In Africa, the pilot project in Imo found that

education was not the exemplary filling the gap between water, sanitation, and better health (Black & Fawcet, 2008). It is not necessarily only by providing the hardware that will solve the problem, but it will also require the appropriate 'software' that will meet the community needs in changing sanitary lifestyle in the community. The hardware or the toilet can always be provided or created by technology but it will require the 'software' tools, such as maintenance and repairmen skills to enable the community to use the toilet in a more sustainable way (Black & Fawcet, 2008).

Poor sanitation is mainly related to social economy, demography and cultural issues that lead to people having difficulties in accessing healthy and clean sanitation. Different countries with a different wellness status, different culture and geographical area may have a different perspective and value of sanitation (Black & Fawcet, 2008). For particular populations in developing countries, research showed that sanitation in terms of using toilets is a kind of taboo and an unimportant aspect in their life, and it has very little meaning, which lead to unawareness of having healthy sanitation (Black & Fawcet, 2008). In some communities, such as in village areas in Indonesia, it takes time for the people to change from using their very traditional way (in the river) to the modern way of using toilets (personal observation and interview).

Inadequate sanitation and hygiene bring negative impacts beyond health. Especially for school age children, an unhygienic environment and facilities in the school contribute to an insufficient educational prospect. Exposure to unclean sanitation and unhygienic conditions means having greater risk of infectious diseases which leads to higher days of lost schooling (Black & Fawcet, 2008). Every student has a right to access clean sanitation and hygiene in all of the school premises to enable them to have sufficient progress in education.

Creating a healthy school environment needs an extensive effort to build good physical, emotional, and social well-being. It is important to create a supportive clean environment that enables the students to feel comfortable in learning at school (Koren & Bisesi, 2003). As part of the environmental factors, facilities sanitation in school is an important concern to prevent infectious diseases among school age children and adolescents. The school facilities include toilet, class room, canteen, play ground and teachers' and staff offices. Schools should give prime consideration to the number, accessibility, and quality of hand washing facilities and toilets for the students to use. The sufficient number of toilets for student is at least one toilet for every ten students (Lawrence & Mae, 2003).

Schools also need to provide proper facilities for hand washing such as liquid soap, clean water, and disposable paper towel (or hot air dryers can be used). School students need to be encouraged to wash their hands properly after visiting the toilet, before eating, before drinking, after playing outside, after play with water, sand, or soils and after touching animals (Lawrence & Mae, 2003).

Evidence from several developing countries in Latin America, Asia, and Africa found that the key point of mass improvement of sanitary behaviour is more than hygiene education. Particularly for toilet use, knowledge itself is not strong enough to make people change their habits to use healthy toilets (Black & Fawcet, 2008). Contributions from different organisations, institutions, and professionals are required for considering certain influencing dimensions such as culture, norm, tradition, geography, economy and social dimension. A similar situation also applies in understanding peoples' behaviour toward food sanitation.

Applying proper food sanitation and personal hygiene can prevent the food borne illnesses. Several main aspects that link to almost all food borne illness include time and temperature abuse, poor personal hygiene and inappropriate hand washing, cross contamination and contaminated ready-to-eat foods (McSwane et al., 2006).

Providing food at food establishments, including in school canteens, requires a food safety standard to prevent occurrence of any food borne illness. Following or meeting the food safety and quality standard in each stage in the flow of food is important. The flow of food includes receiving, storage, preparation, cooking, and serving. Basically, each different type of food has a specific handling requirement. General requirement aspects in each stage of the flow of food can be seen in appendix 1. Recent food establishments that are also common in the school setting are temporary and mobile food providers.

Temporary and mobile food facilities have become popular recently in food business. The temporary and mobile food facilities include food provided at street fairs, festivals, events catering, food sampling, and mobile carts. The foods provided in the school, including the street food outside the school, can be categorized into temporary and mobile food facilities. (McSwane et al., 2006). There are some certain requirements for the temporary and mobile food facilities that need to be met by the vendors to prevent food borne illness. The more variety and complex the menu the higher the risk and hence require more public health concerns to reduce the risk (McSwane et al., 2006).

Numerous strategies have been developed to create healthy sanitation and hygiene in schools. The international water and sanitation centre has developed the life skill-based hygiene and sanitation program using FRESH (Focusing Resources for Effective School Health) framework to create a healthy and safe environment in school settings (Postma et al., 2004). An example is in Tajikistan, where UNICEF developed a project focusing on water, sanitation and hygiene education for children and adolescents in the school and community setting. The project indicated that youth participation brought powerful meaning for the best practice and sustainability of the program in building healthy and hygienic behaviour in schools as well as in the family and community (Postma et al., 2004).

School-based health programs for hygiene and sanitation are definitely important, so as to reduce the loss of school days due to health impact of unhygienic and poor sanitation in schools. School is the second greatest risk place, after their home, for adolescents to be exposed to poor sanitation and hygiene.

2.3.6. Sexual behaviours that contribute to HIV infection, other STI, and unintended pregnancy

Reproductive health is increasingly important for the young and sexually active age group, concerning preventing sexually transmitted infections. Adolescents have a higher risk to contract sexually transmitted infections (STI) such as HIV, gonorrhoea, syphilis and pelvic inflammatory diseases because the adolescents have typical characteristics to try or experience new or challenging activities, including sexual experimentation (Jemmott et al., 2002).

Almost all countries worldwide put the adolescent population at risk for most of the sexual-related diseases. In the USA, adolescents face the challenge of an increasing genital herpes epidemic, high prevalence of human papilomavirus infection, high cases of Chlamydia; and the fact that they become the population at risk for the HIV infection (DiClemente & Crosby, 2006). A study in Haiti during 2006 to 2007 showed that 18% of adolescents had experienced sexual violence during their lifetime (Gomez et al., 2008). Additionally, the average age of sexual debut in developing countries is decreasing (WHO, 2003b). A study showed that the age of having sexual experience for the first time is as low as 9 – 13 years for boys and 11 – 14 years for girls (WHO, 1999b).

Sexually transmitted infection occurs frequently among teenagers. In the US, more than 3 million teenagers are infected with STI annually or about one in every four cases of STI were teenagers (Eng & Butler, 1997). The higher rate of STIs in adolescents is directly related to the lower age of sexual initiation in adolescence, which is strongly associated with socio economic status, ethnicity, race, education background and substance use (D'Angelo & DiClemente, 1996).

The WHO indicated that factors that cause STIs in adolescents were insufficient knowledge and understanding about STIs prevention and lack of support from parents or family members and school communities (WHO, 2003b). Factors contributing to STIs among adolescents that most of studies used as a measured outcome include sexual behaviour such as age of sexual intercourse initiation, condom and contraceptive use, and frequency of sexual intercourse (Robin et al., 2004) and number of partners (Coleman, 2007).

Determinants of sexual behaviour among adolescents are influenced by socio economic, cultural, and environmental dimensions (Coleman, 2007). In some countries, teenage sex worker is often found as a result of low skilled-education and economic pressure (WHO, 2003b). Cultural and environmental aspects relate to media propaganda or misperception of sexual relationship and communication between adolescents, parents, and peers in term of sex-related issues (Coleman, 2007). Prevention toward sexual behaviour among adolescents become more challenging as it needs to address all the social, cultural and environment aspects.

A review by DiClemente and Crosby (2006) noted that the intervention strategy to prevent sexually transmitted diseases among adolescents is basically dependent on the different adolescent's group characteristic and the setting type. Evidences in the USA showed that several different intervention strategies come out with the expression of 'no intervention is prefect' that is suitable to address all issues in sexual risk behaviour among adolescents (DiClemente & Crosby, 2006). A study in the USA suggests that it is crucial to involve family, individual, and relationship environment in decision making about sex, contraception, and childbearing (Manlove et al., 2009).

In some cultures sexually related diseases are very sensitive issues among adolescents. The prevention strategy should be designed in a more suitable way that is convenient and comfortable for the adolescents to seek health services. Experience from the health service in USA, demonstrates that providing health services for sensitive health issues

like sexually related diseases brings a positive impact on youth perceptions of care (Jonathan D Brown & Wissow, 2009).

School-based health intervention for reproductive health to prevent unhealthy sex behaviour is crucial to provide students with sufficient skill to delay sexual activity until they are biologically, socially, and mentally mature (WHO, 2003b). Adolescents should be educated to understand about reproductive health as well as about family life and population issues, in order to obtain a better quality of life and relationship (WHO, 2003b). Intervention through schools is most likely to be effective because it involves peers that may help convey the messages as reproductive health is a sensitive issue for adolescents.

2.3.7. Unintentional Injury

The term unintentional injury can be seen to be based on several dimensions such as external cause (e.g. motor vehicle collisions, falls, drowning, fire, poisonings), type of activity, location of activity, product involved, mechanism of injury, nature of injury, body region affected and levels of injury severity (Lescohier & Gallagher, 1996). Examples of unintentional injury include motor vehicle injuries, falls, poisonings, fires and burns, drowning, respirations, and sport injuries (Christoffel & Gallagher, 1999)

Regarding the safety issues, unintentional injury is the main threat to children and adolescent health and well-being (Alexander & Roberts, 2002). Unintentional injury is one of the major health problems in adolescence, which causes about 80% of deaths among adolescents and young adults. Additionally, it can be seen from the box 2.5 below some facts regarding injuries in childhood and adolescents in global terms.

Table. 2.5. Injuries in Childhood and Adolescence: the Facts

• More than 875 000 children under the age of 18 years die from injury every year • Injury are a leading cause of death in age between 1 and 18 years • The two largest cause of child and adolescents injury deaths are road traffic crashes and drowning • Intentional injuries, such as child abuse and youth violence, are also a leading cause of death, especially among older children	• Non-fatal injuries affect the lives of between 10 million and 30 million children and adolescents each year. • Children in poor families are more at risk of injury. • Many injuries occur in the home or while at play. • Most injuries can be prevented.

Source: (WHO, 2005a, p. 4)

Other common injuries that happen among adolescents in the USA (age 10 to 19 years) are sports injury which are about 21% to 25% (Lescohier & Gallagher, 1996). The risk of sports injury is higher as the major physiological changes also occur during this age period (Abernethy & Bleakley, 2007). In most countries, where football is a popular sport, head injuries and concussions in football (soccer) become common (Delaney et al., 2008) (McCollum, 2009). Adolescence is the period when individuals are learning and trying different sports activities. Most individuals in this period of age also have more risk taking behaviour.

Modifiable determinant factors of unintentional injury include personal, physical and psychosocial environment and equipment factors (Barss et al., 1998). Alcohol consumption is an example of a personal behaviour that causes unintentional injury, that mostly occur in adolescents (Barss et al., 1998). A study in China in 2005 found that unintentional injury during adolescence is related to less sleeping hours. Adolescents aged 13 – 17 years who slept less than 7 hours a night during the school week were approximately two times more likely to have unintentional injury (OR = 1.1, $p<0.05$) than those who slept 7 hours or more (Lam, 2007).

Prevention of injury among adolescents include active roles of health care practitioner, parents, school teachers, or sport instructors. Prevention programmers should consider the policy and regulation aspects and improve skills and awareness in injury protection (Neinstein, 1991). It is also important to recognize injury patterns in particular population groups and clarify general and specific characteristics from different related aspects (Lescohier & Gallagher, 1996). Approximately one-third to one-half of adolescent injuries occurred at school, and are more frequent in boys than girls (Neinstein, 1991).

Global initiatives for unintentional injury prevention among children and adolescents have been developed, which involve different approaches and concepts. Particularly for adolescents, the prevention can be focused on setting approaches such as school and parent involvement as well as the school community, and a health care approach (WHO, 2005a). A Transtheoritical Model of Change (TMC) is another approach to prevent injury among adolescents based on behaviour change concept. The TMC showed that high school students had made safety behaviour changes in their farm work, although it was not statistically significant, due to the limited number in the sample group (Kidd et al., 2003). An example of injury prevention is a community-based intervention strategy.

A study in China to address fall injuries showed that there was a significant reduction of fall injuries among adults from 17.86% to 7.19% ($p < 0.000$) compared to the control group. Generally, the intervention included health education, support from health care, hazard assessment, and risk factors modification (Xia et al., 2009). Although the study targeted adult age, it may be valid for the adolescents.

School setting intervention to prevent unintentional injury among adolescent is one of the appropriate solutions. An alternatives strategy is to provide the students with adequate skills to avoid unintentional injury and creating a safe environment in school.

2.3.8. Alcohol and drug use

Substance use and abuse are major problems in most countries in the world. Substance use pattern can be grouped into different levels from abstinence, to use, to the pathological entity of abuse and dependence. Varieties of substance use include alcoholism, addiction, and chemical dependency (Bukstein, 2002).

Substance abuse is one of the main risk behaviour issues among youth in most of the western cultures and is becoming a problem in some of the eastern cultures due to the modernization or western culture influence through fast growing high technology media communication. Several surveys in the USA and Europe have shown the alarming figure of alcohol use among youth, especially adolescents. Below are the figures for substance use among adolescents (age 12 – 18 years) in the USA. Source: (Bukstein, 2002)

University of Michigan Annual Survey (2000)

- Having used alcohol:
  - over 80% twelfth graders
  - over 70% ten graders
  - over 50% eight graders
- Having been drunk at least once in the past 30 days:
  - 32.3% twelfth graders
  - 8.3% eight graders
- Having used any illicit drugs:
  - 54% of twelfth graders
  - 26.8% of eight graders
- Indicating use of marijuana in the preceding 12 month:
  - 37% of twelfth graders
  - 32% of tenth graders
  - 16% of eight graders
- 6% of high school seniors report daily marijuana use
- Raising figure of ecstasy use:
  - 5.6% in 1999 to 8.2% in 2000 among twelfth graders
  - 1.3% in 1999 to 3.1% in 2000 among eight graders

Centre for Diseases Control Youth Risk Behaviour Survey (1999)

- 50 % of adolescents consume alcohol on at least one or more occasions in the 30 days preceding the survey
- 4.9% of adolescents use alcohol on school premises
- 33.4% of adolescents had episodic heavy drinking (at least once a month).
- 7.2% of adolescents use marijuana on school premises

As can be seen from the figures above regarding substance use issues in University of Michigan survey in US, mainly the students in eight, ten and twelfth grades (age range between13, 15, and 17 years old) have risky behaviour on substances use.

Evidences from European countries show that young people in the United Kingdom are the heaviest drinkers in the world. The regular alcohol drinking rate among 15 years old adolescents in UK was 17% (McArdle, 2008). Adolescent alcohol use is also one of the major health issues in Australia, as it counts 19.8% males and 17.1% females aged 14 – 17 years as regular drinkers (Hayes et al., 2004). Alcohol abuse is not only a major youth health problem in well developed countries such as USA and Europe, but also in some of the developing countries such as some countries in Africa and Asia (Jernigan, 2001). This global alcohol abuse evidence becomes agonizingly serious when it comes to the behaviour and health consequences of adolescents alcohol use.

There are many behaviour and health consequences of substance abuse. The behaviour consequences include: inability to carry out main role obligations (such as missed classes at school or work absenteeism), frequent legal problems, a raise in risk taking behaviour or self-exposure to harmful situations, and/or keep using the substance even though having constant social or interpersonal problems caused, or worsened, by substance use (Bukstein, 2002). Meanwhile, several health consequences of alcohol abuse include adolescent conduct disorder symptoms such as defiance, self injury, and for long term use it will lead to chronic diseases such as diabetes, obesity, and cancer (McArdle, 2008). Teenage alcohol drinking is also more likely to lead to alcohol-related unintentional injuries such as motor vehicle injuries, falls, burns and drowning (Jernigan, 2001; WHO, 2007).

Determinant factors of alcohol abuse and dependency among adolescents relate to social, cultural and environmental aspects (McArdle, 2008). Bukstein (2002) summarized several different characteristics of determinant factors of adolescents alcohol use, such as parent/family risk factors, peer-related risk factors, individual risk factors, community or neighbourhood characteristics, and the possibility of genetic factors (Bukstein, 2002). These risk factors contribute significantly to alcohol drink initiation as well as alcohol dependency among adolescents (Bukstein, 2002). These factors are essential to be taken into account in developing more effective intervention strategies of adolescent alcohol abuse.

Intervention strategies for prevention and treatment of adolescent alcohol abuse can be focused on educational, skills-based, family-based, and community-based factors. Focusing the intervention only on a single factor may not be effective and combining all of these factors will bring a more effective intervention (Bukstein, 2002). Particularly for the treatment strategy, the role of health care, health professionals, as well as family therapy and peer support will contribute to a more successful treatment (Bukstein, 2002). The USA health department developed a guidance book for parents, educators and community leaders to address drug abuse including alcohol, tobacco, marijuana, and other illegal drugs, among adolescents (NIDA, 2003). The prevention strategy, which is basically a school-based prevention strategy, consists of several programs for each school level and involves strong participation from the community and families (NIDA, 2003).

Overall, global evidence has shown that the health-risk among adolescents requires more attention. As Indonesia is an Asian country, it will be valuable to look at the figures for health-risk issues among the neighbourhood countries.The next section will describe the health-risk issues among adolescents in Indonesia in comparison with the neighbourhood countries.

2.4. Health-risk issues based on Global School-based Students Health Survey in Indonesia and other Asian countries.

A Global School-based Students Health Survey (GSHS) is a survey that is designed to provide information on major health-risk issues among adolescents (age 13 to 15 years) around the world using the same instruments and data collection method. Findings from this survey reveal alarming figures of certain health-risk in Indonesia. Details of this survey can be found in the Centre for Diseases Control, Atlanta (website address : http://www.cdc.gov/gshs/countries/seasian/index.htm).

Findings from the GSHS 2007 in Indonesia covered Java Island, which is one of the biggest islands in Indonesia. Findings from GSHS showed that Java had the highest proportion of male students who ever smoked during the last 30 days, which was 23.4%. See Figure 2.5 to compare to the other countries. The proportion of female students who ever smoked was the highest in Philippine (5.8%).

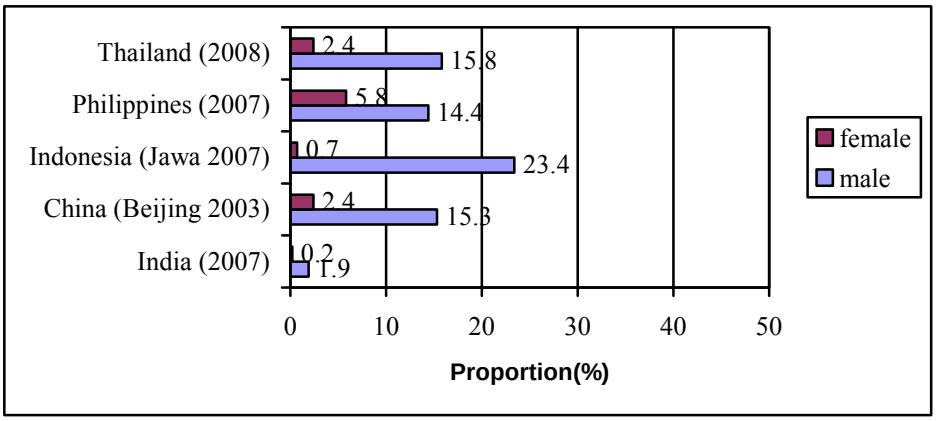

Figure 2.5. Proportion of students who smoked cigarettes on one or more days during the last 30 days.
Source: Global School-based Student Health Survey (Fact Sheet- CDC Atlanta)

The involuntary smoke is a major smoking related issue in Indonesia. Figure 2.6 shows that most of the students (89% in males and 84.3% in females) were exposed to the environmental tobacco smoke. The proportion was the highest in Indonesia, followed by China (64.9% in males and 58.1% in females).

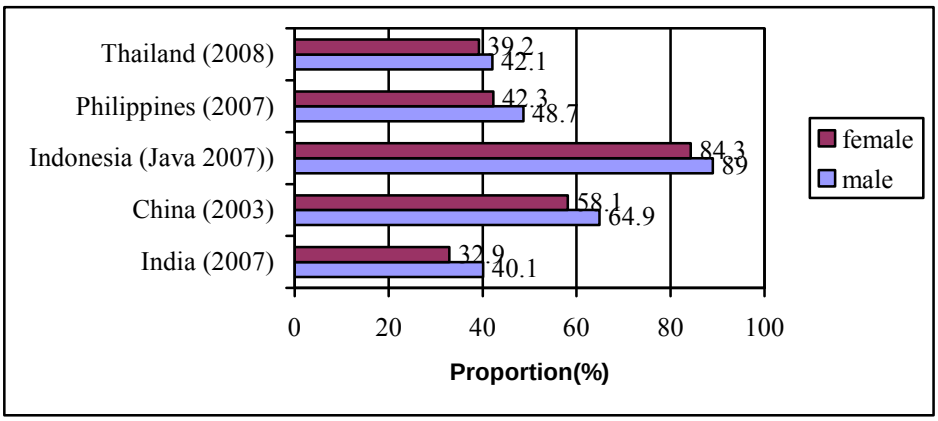

Figure 2.6. Proportion of students who reported people smoking in their presence on one or more day during the past 7 days.
Source: Global School-based Student Health Survey (Fact Sheet, CDC Atlanta)

The survey found that injury is one of the health-risk issues among adolescents. The proportion was highest in Indonesia and Thailand, especially among male students (56.3% and 56.2% respectively) followed by Philippines (52%), while among female students were 34.6%, 38.3%, and 39.7% respectively (see Figure 2.7). The survey in India did not provide the proportion of injury.

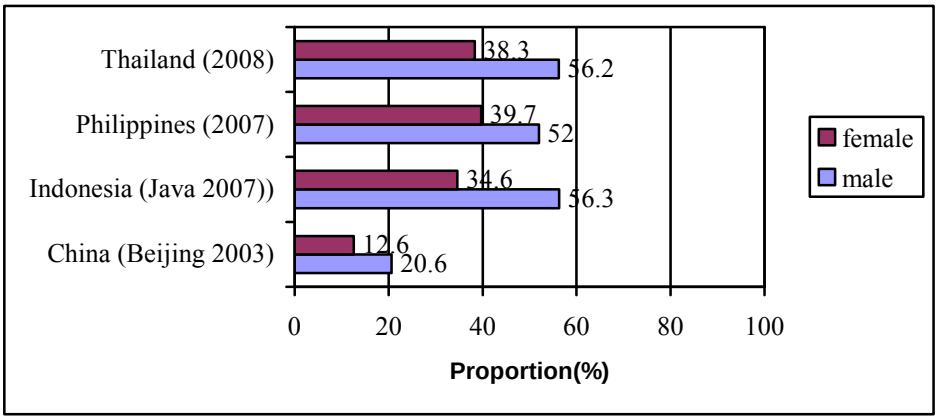

Figure 2.7. Proportion of students who were seriously injured one or more times during the past 12 months
Source: Global School-based Student Health Survey (Fact Sheet, CDC Atlanta)

Sedentary life style or physical inactivity in adolescents also needs to be considered. Figure 2.8 shows that the highest proportion of sedentary life style was in Thailand (40.5% in female and 38.5% in male) and followed by Indonesia (35.8% in female and 35.2% in male). The sedentary life style in this survey refers to spent three or more hours per day during a typical or usual day sitting and watching television, playing computer games, talking with friends, and doing other sitting activities.

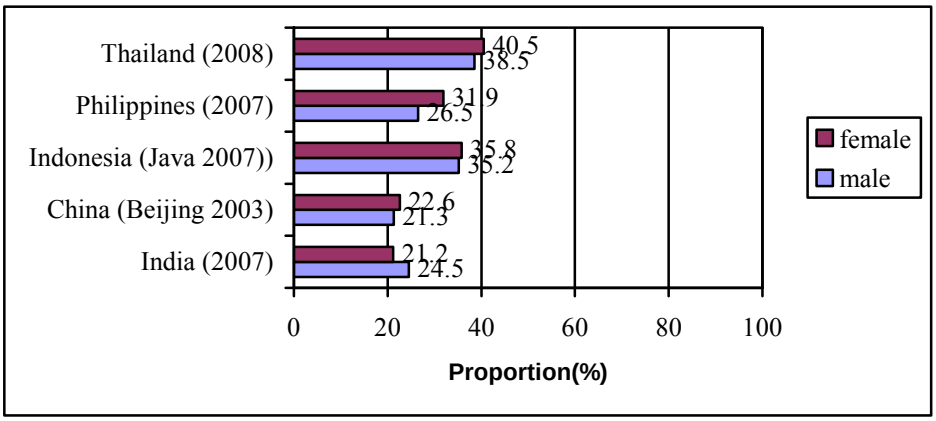

Figure 2.8. Proportion of students who have sedentary life style (spent three or more hours per day during a typical or usual day sitting and watching television, playing computer games, talking with friends, or doing other sitting activities)
Source: Global School-based Student Health Survey (Fact Sheet, CDC Atlanta)

Figure 2.9. shows that bullying is common for most adolescents in Indonesia. The proportion was higher in male (54.2%) than female (43.7%) compared to the other three

countries. The survey did not show the proportion in India, as no data was available in the report.

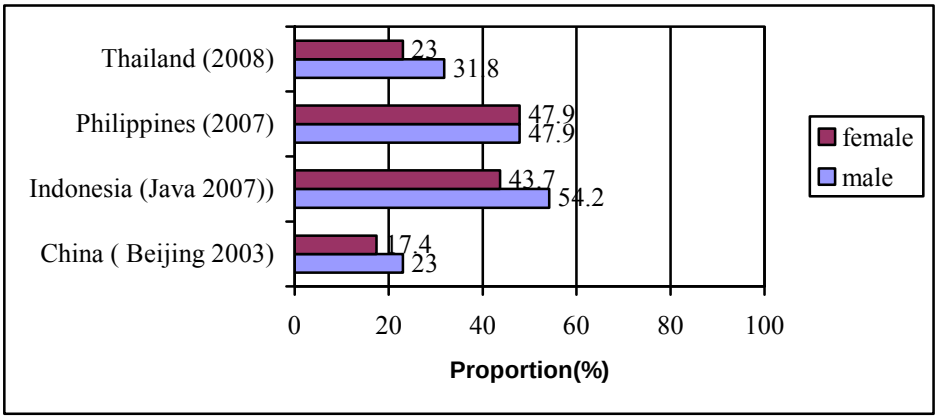

Figure 2.9. Proportion of students who were bullied on one or more days during the last 30 days
Source: Global School-based Student Health Survey (Fact Sheet, CDC Atlanta)

Mental health related issues, such as feeling lonely, are also one of the main issues among adolescents. In figure 2.10 it shown that the proportion in Indonesia was 9.7% in females and 6.8% in male. The highest proportion was in the Philippines (20.8% in female and 12.8% in male).

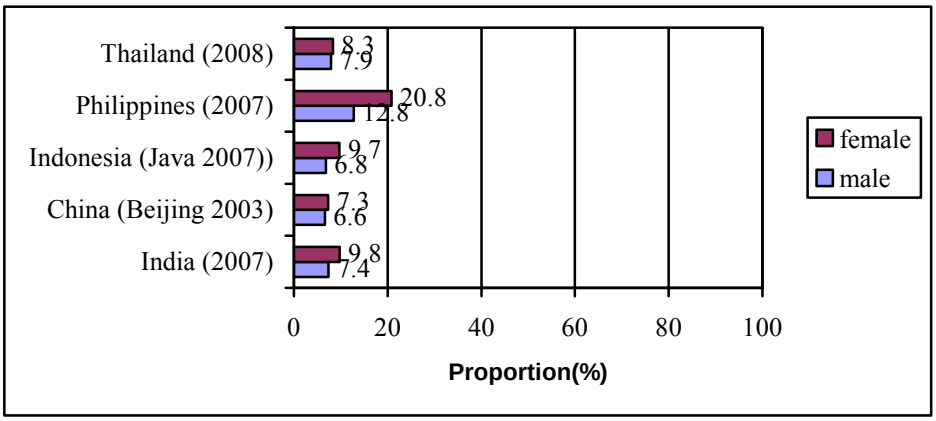

Figure 2.10. Proportion of students who felt lonely most of the time or always during the last 12 months
Source: Global School-based Student Health Survey (Fact Sheet, CDC Atlanta)

Regarding the diet-related issues, feeling hungry and overweight are two main issues that need to be considered. Figure 2.11. shows that Philippines and Indonesia had the highest

proportion of students who felt hungry most of the time or always because there was not enough food in their home. The proportion in Indonesia was 6.4% in males and 3.1% in females. The proportion in males was double that of females. Meanwhile figure 2.12 shows that the proportion of overweight was very low in Indonesia compared to the other countries (1% in males and 0.3% in females), which can be assumed that under nutrition still needs more attention than the overweight issue among adolescents in Indonesia.

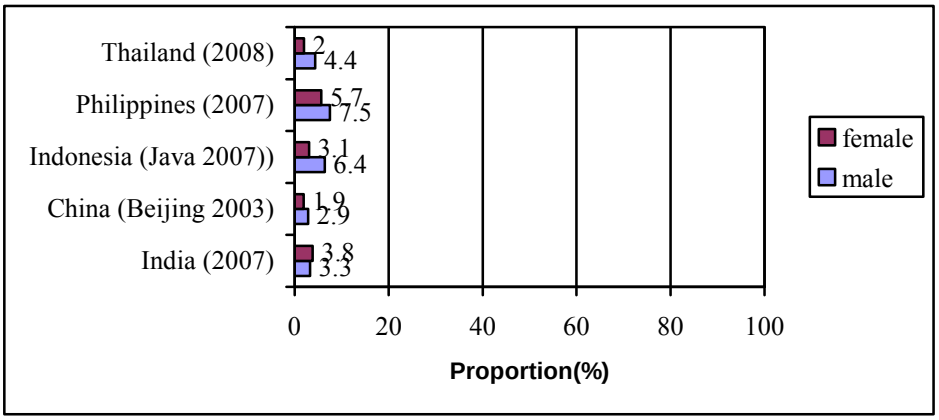

Figure 2.11. Proportion of students who went hungry most of the time or always during the past 30 days because there was not enough food in their home
Source: Global School-based Student Health Survey (Fact Sheet, CDC Atlanta)

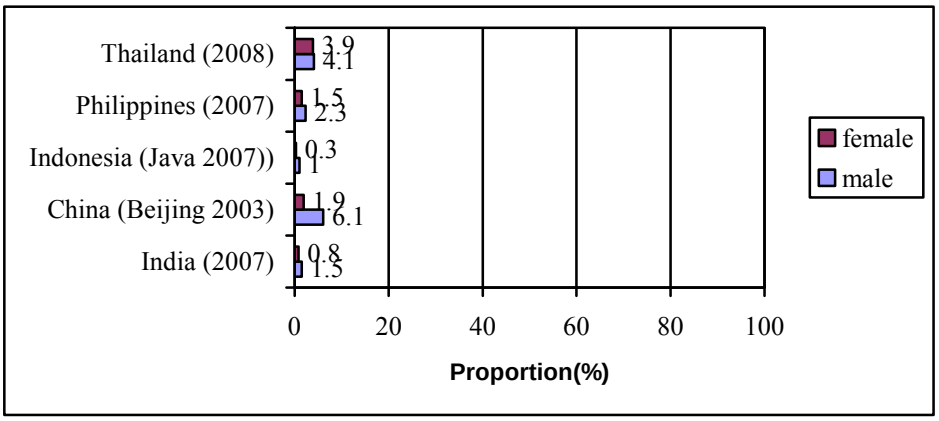

Figure 2.12. Proportion of students who are overweight (95th percentile or above of body mass index by age and sex based on data from Cole, Bellizzi, Flegal, and Dietz, BMJ, May 2000) .
Source: Global School-based Student Health Survey (Fact Sheet, CDC Atlanta)

Regarding the hygiene issue, Indonesia put more concern on washing hands before eating and frequency of brushing teeth. Figure 2.13 shows that the proportion of never or rarely washed hands before eating was higher in males (5.3%) than females (2.4%). The highest

proportion was in Thailand (8.2% in males and 9.7% in females). Meanwhile, Figure 2.14 points out that the proportion of students who clean or brush teeth once or less a day was low compare to the other countries. The proportion in Indonesia was 2.8% in males and 1% in females. Again, the proportion was higher among male than female adolescents in all the five countries.

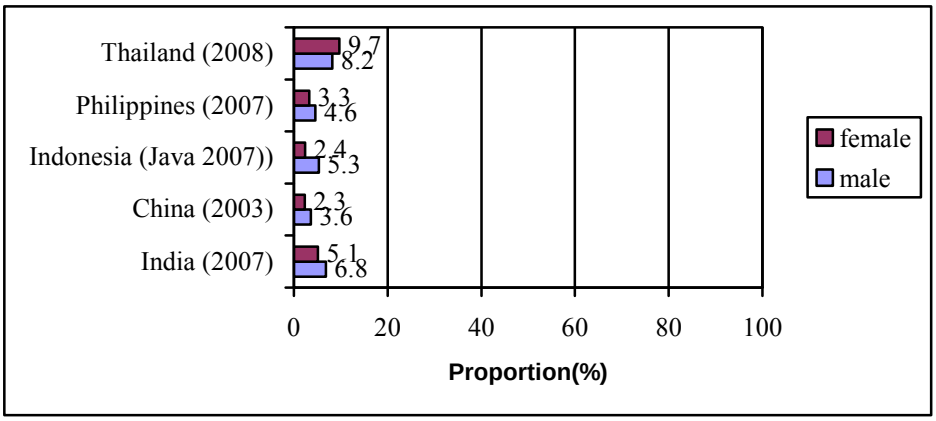

Figure 2.13. Proportion of students who never or rarely washed their hands before eating during the last 30 days
Source: Global School-based Student Health Survey (Fact Sheet, CDC Atlanta)
http://www.cdc.gov/gshs/countries/seasian/index.htm

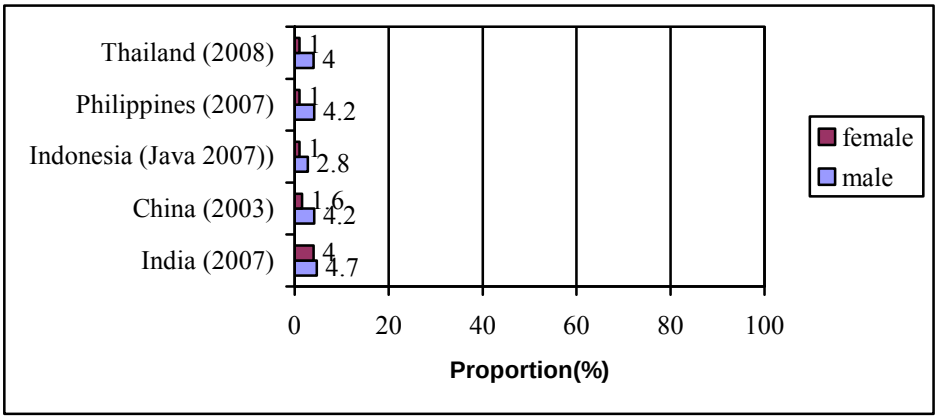

Figure 2.14. Proportion of students who cleaned or brushed their teeth less than once per day during the last 30 days
Source: Global School-based Student Health Survey (Fact Sheet, CDC Atlanta)
http://www.cdc.gov/gshs/countries/seasian/index.htm

Alcohol abuse is actually not the main health issue among adolescents in Indonesia due to cultural and religious influence. The majority of Indonesians are Moslem, who believe that alcohol drink is a forbidden drink. Figure 2.15 shows that the proportion of alcohol abuse was the lowest in Indonesia (2.7% in males and 0.8% in females) compared to the other three countries. There was no data available for India in the report.

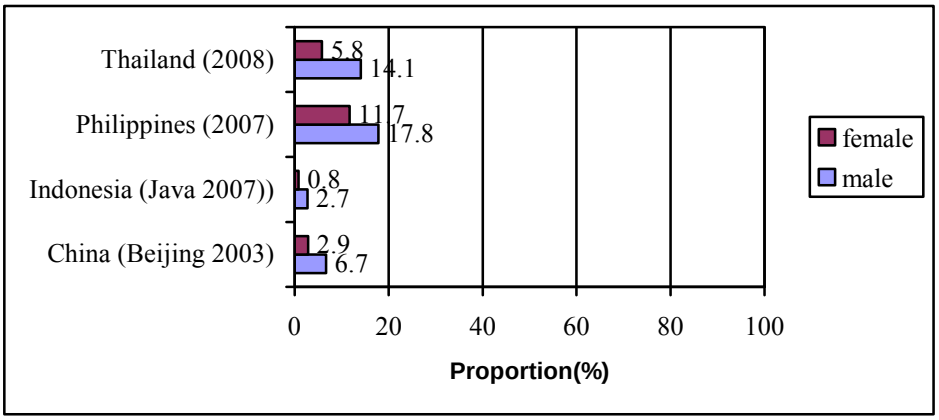

Figure 2.15. Proportion of students who had a hang-over, felt sick, got into trouble with their family or friends, missed school, or got into fights, as a results of drinking alcohol one or more times during their life
Source: Global School-based Student Health Survey (Fact Sheet, CDC Atlanta)
http://www.cdc.gov/gshs/countries/seasian/index.htm

Overall, major health-risks on Java island, Indonesia, found from the survey were smoking, sedentary life style, bullying, injury, feeling lonely and sad, diet-related issues, hygiene related issues, and alcohol abuse. Indonesia had the highest proportion in smoking issues, bullying, and injury compared to India, China, Thailand, and Philippines. In almost all the health-risk issues presented in the figures show that male adolescents tend to have more health-risk than female. This may relate to gender different in adolescents' risk taking behaviour and the growing process. This evidence shows the need to focus more on smoking, bullying, and injury in Indonesia. In fact, other sources may show health-risk issues that specifically occur in Indonesia. The next section will provide evidence of the health-risk issues within Indonesia.

2.5. Health-risks among Adolescents in Indonesia

The population of adolescents aged 10 to 24 years in Indonesia counted for approximately 64 million or 28.64% of all age population in 2007 (BKKBN, 2009). According to Indonesia Centre of Bureau Statistic, among the 15-19 year age group, those attending junior high school in urban and rural areas are 87.5% and 69.2%, respectively (WHO, 1998c).

Recent figures on health-risk issues among Indonesian adolescents are rarely available for publication. Information on adolescents' health-risk are mainly documented unpublished in the local government and academic institutions. Health-risk figures on Indonesian adolescents that are available in publications are restricted to particular issues such as smoking, reproductive-related health risk, and food hygiene.

2.5.1. Smoking issues

Similar to the figures in other countries, smoking is one of the main health-risk issues among Indonesian adolescents. Figures from Global Youth Tobacco Survey, a school-based survey for grade 7 to 9, in different provinces in Indonesia during 2004 to 2005 showed relatively high proportion of smoking in adolescents, particularly males, almost similar to the adult figure (Figure 2.3 and 2.4)

National smoking prevalence in adult >= 15 years old in Indonesia in 2004

- 63% males smokers (52% daily smokers, 11% occasionally smokers)
- 4.5% females smokers (1.2 daily smokers, 3.3% occasionally smokers)

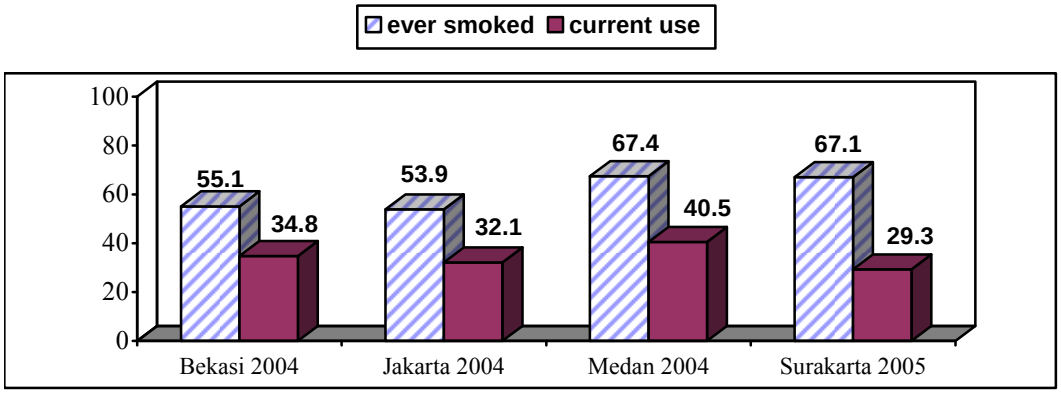

Figure. 2.3. Smoking Prevalence among Male Adolescents (13 to 15 y o) in Indonesia during 2001 to 2005 (CDC, 2008)

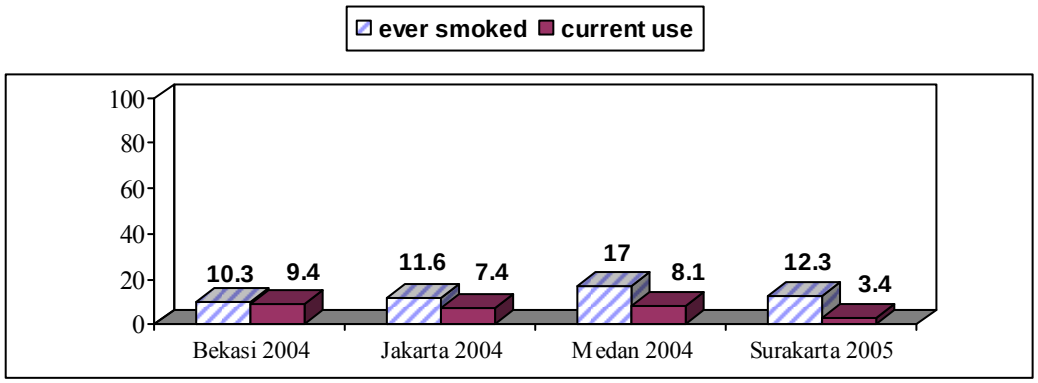

Figure. 2.4. Smoking Prevalence among Female Adolescents in Indonesia during 2004 to 2005 (CDC, 2008)

2.5.2. Reproductive health issues

Health authorities and organisations in both local and international capacities have recently made reproductive health a priority for adolescents, particularly with the concern of HIV prevention. A report from a reproductive health project organized by United State Agency for International Development in 2003 indicated that Indonesian adolescents have risk of reproductive-related diseases due to changes in norms, beliefs and culture in terms of sex-related concerns (Situmorang, 2003). Sexual-related concerns in Indonesian adolescents include teenage marriage, premarital sex, unwanted pregnancy, awareness of STI and reproductive health, and use of contraception among singles (Situmorang, 2003). Table 2.5. describes some facts from local small studies regarding the sex-related behaviour among adolescents. Although the facts were based on several small studies in

different places, years, and population covered, and could not be generalized, the findings were surprising and at least can be used as a preliminary description of issues in sex-related behaviour among youth in Indonesia. A national routine survey on sex-related behaviour of adolescents in Indonesia is not available as it is considered a very sensitive issue for Indonesian culture. Consequently, the figure may be an iceberg phenomena.

Table 2.6. Facts about Adolescents Reproductive Health Issues in Indonesia during 1981 to 2006

- Average age at first marriage in rural women with low education background was 17 years among women currently aged 25 – 29 years.
- It is common for parents in rural area to arrange marriage for their daughter soon after menarche due to social and economic reasons.
- The proportion of teenage pregnancy was higher in rural than in urban area.
- Premarital sex is common among young Indonesian recently
- 10 – 31 % of youth engaged in premarital sex.
- Age of first sex among single adolescents was >18 years (Suryoputro, 2006)
- Boys prefer to have sex with 'casual friend' or prostitute than with girl friend due to less responsibility.
- Most young men visit prostitute regularly, and most of them do not feel a need to use condom

Source: (Situmorang, 2003) (Suryoputro, 2006)

The specific risk factors of sexual behaviour among Indonesian late adolescents (age 18 to 24 years) include low religiosity, low self esteem and self respect, strong social support of premarital sex, and low knowledge of reproductive health (Suryoputro, 2006). However, there is not sufficient information on sexual behaviour among younger adolescents (12 to 17 years), because the age of first sexual experience is mostly 18 years and older. Even though the sexual behaviour started mostly in late adolescents, the intervention may be targeted at younger age group to build stronger self esteem and safe sexual behaviour.

2.5.3. Food safety

Other health-risks among adolescents in Indonesia that currently interests health authorities is food safety, especially for school age. Most cases of food borne illness

occurred in school premises, which was about 23.7% (Badan POM, 2005) . The latest outbreak took place in schools during 2004 causing 1067 students to got sick (Badan POM, 2005). The contaminated foods were mostly from the school canteen and street vendors outside the school.

Food from street vendors is one of the contamination sources that causes food borne illness. A study about contaminated food in Jakarta in 2005 showed that about 24.4% of food from the street vendors was contaminated (Pracoyo et al., 2006). The type of bacteria that is frequently found in food street vendors is *Bacillus sp* (18.1%). Contamination with this bacterium causes diarrhoea diseases in children.

The safety of food street vendors is a major issue in Indonesia due to contamination by bacteria as well as containing illegal food additives. A study indicated that Salmonella Paratyphi A was found in 25% to 50% of food from street vendors. This bacteria is known to cause typhoid fever in children (Judarwanto, 2006). The illegal food additives that are commonly used by the street vendor are borax, formalin, B rhodamin (as food colouring) and methanil yellow (as food colouring). Laboratory tests found that those illegal food additives were present in street vendor food which are favourite foods among students (Judarwanto, 2006). Those illegal food additives are known as carcinogenic in long term consumption (Judarwanto, 2006).

Street vendor food is very common in schools in Indonesia. A study showed that school students consumed about 36% of energy, 29% of protein, and 52% of iron from the street vendors food in schools (Judarwanto, 2006). A study in Jakarta found that only 5% of the school students brought food from home while other students always buy food at school (Judarwanto, 2006). Although the food still contains nutrients, the safety of the foods is still questionable.

Schools in Indonesia still do not have regulations or a policy for food quality standard for students at the schools. Foods that are available from the school canteen as well as from the food stalls or vendors are inadequately monitored. Junk foods and unhygienic foods are still frequently available in schools.

Particularly for Indonesia, a school-based health program is absolutely important as school is also a place where adolescents may be exposed to health-risks. If school consciously or unconsciously ignores this unhealthy exposure to the students and school community, this means schools will loose an opportunity of significant contribution to

improve the quality of the learning process and health status of students as well as for the school community.

Understanding the epidemiology figures of health-risk among adolescents is important for the decision making process. Most of the decision makers have some barriers to utilizing the data in decision making. The barriers are mainly because of the gap between the researcher and the decision maker, such as being unfamiliar with the policy issues, failure in interpreting the policy context, different data presentation format, lack of trust, and fear of social or economical consequences (Pappaioanou et al., 2003). Therefore, it is necessary to provide evidence-based information in a way that the decision makers and policy makers can understand and feel persuaded. Data on health-risk, particularly health-risk issues in Indonesian adolescents, are noteworthy in order to present information that is more valid for local health authorities, scientific forums, and the community.

The figures for Indonesia are representing the conditions on one large island with the largest population in Indonesia. In terms of program and strategy development and implementation, it is necessary to have information on health-risk issues among adolescents in the smaller areas such as at district level. This is because the decisions and policies are under authorization of the district level. Therefore, it will be very useful to provide health-risk issues data on the district level to be used as the evidence-based information in the decision making process in the government sectors.

Theories and some studies have shown that analysing adolescent health needs is necessary to understand adolescent behaviour because the factors influencing youth health are mainly associated with the behaviours particularly the health risk behaviour. As it has been described in the previous sections, all of those health-risk behaviours are basically interrelated and have similar key determinant factors. Therefore, it is necessary to understand the main factors, that actually underpin the health-risk behaviour in adolescents, that can be focussed on to develop the most effective strategy in improving adolescents' health status.The next section will review further factors underpinning health-risk behaviour during adolescence in general in order to acquire sufficient understanding about the key factors.

2.6. Factors underpinning health-risk issues during adolescence

Assessing determinant factors of health-risk behaviour among adolescents requires deep understanding about adolescent development, adolescents' perspective of health,

relationships, and pressure from peers, society, and the environment (Rew, 2005). In addition, genetic aspects may have a contribution to the human behaviour and health status (Becker et al., 2006). Adolescent growth and development is a fundamental of behaviour of how they interact with other personality and environment factors (Rew, 2005).

Adolescence is the stage when individuals develop enormous changes in the physical, psychological (emotional and cognitive), social, and spiritual domain of life (Rew, 2005). Each of those developments explain how adolescents behave and engage with life. Adolescent life also means experiencing new ideas, relationships, and activities. Adolescents has unique characteristics that put them in greater risk of negative behaviour in their current life as well as in their future. This period of life becomes crucial, as it will influence their health status in older age.

Physical development is part of human life that begins at birth and reaches its peak, normally, during late adolescent. Understanding basic information about adolescents physical development including sexual maturation is crucial because they directly influence the health-risk behaviour during adolescence (Rew, 2005). Early sexual maturation in female adolescents is associated with health risk behaviour such as unsafe sexual behaviour and drug use (Wiesner & Ittel, 2002). Physical development normally occurs concurrently with emotional, cognitive, social, and spiritual development but individually, not always in similar amounts of growth and development (Susman et al., 2002). Individuals may have emotionally adult maturity although he or she still in the adolescent physical stage.

Personal, environmental, and societal pressures may put adolescents at greater risk from tobacco use, substance abuse, human immune deficiency syndrome (HIV/AIDS), sexually transmitted diseases (STIs), unwanted pregnancies, violence, unintentional injuries, and mental disorders. These behaviours affect adolescents' health today as well as in the future (Figure 2.2) (Henderson et al., 1998).

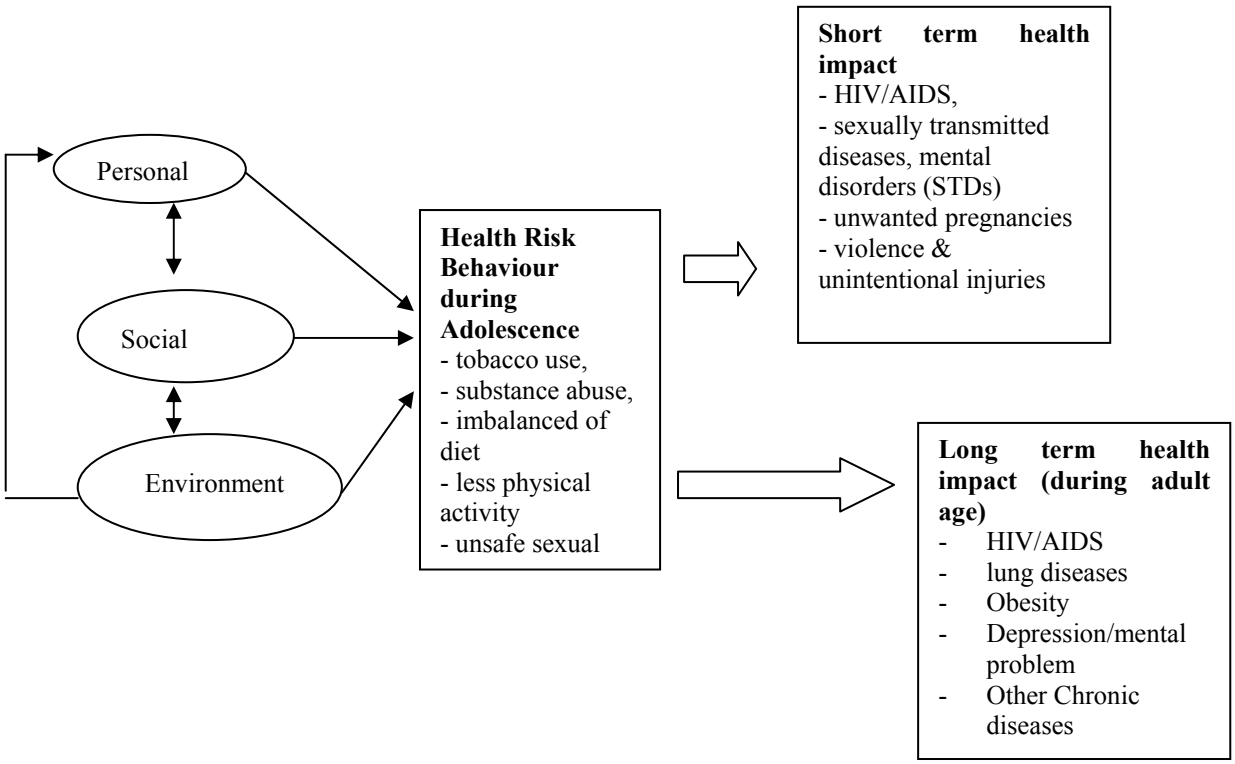

Figure 2.2. Factors Affecting Teen Health Behaviours

Personal factors that relate to adolescent behaviour refer to psychological aspects arising from the genetic making of the individual and influence from environmental conditions as well as social pressures (Rew, 2005). Alexander (2002) indicated that psychological aspects such as the adolescents' temperament were associated with the risky behaviour such as smoking, drinking, and risk taking behaviour.

Environmental factors that relate to adolescent risk behaviour include communication and relationship with their family including parents and siblings, connectedness with the school environment such as friends and teachers, as well as with other members of the community, and exposure to media, cultural, and traditional influences (Harrison & Narayan, 2003) (Igra & JR, 1996). Almost every young person has a huge exposure to the media, which can be harmful in certain ways. The media may trigger unhealthy behaviour among adolescents such as violence, sex, drugs, obesity, eating disorders, school performance and anti-social effects (Strasburger, 2009). However, the media can be used as a health educator, particularly for sexual behaviour issues (Jane D Brown et al., 2002)

Societal pressure to the adolescent's risk behaviour is mainly from peer groups, such as friends in school or adolescent role models, and social engagement. Adolescents tend to have better self esteem when they get accepted by peers. Adolescence is the period of finding role models or idols, which can be peers, parents, siblings, other family members or public figures. Consequently, programs promoting health for adolescents should consider creating opportunities for adolescents to actively contribute in positive social functions, interaction with caring and supportive adults, recognition by peers, and skills development (Harrison & Narayan, 2003).

Adolescents' perspective on health is associated with numerous aspects such as the social and cultural dimension of family, peers, and community in adolescent life. Basically, children and the young generation already have substantial understanding about the factors contributing to good and bad health. Smoking and poor diet are two factors widely understood by the young generation to be negative factors. Besides, children and young people living in urban areas perceive environmental factors as important influences on health (Oakley et al., 1995). However, many young people do not put sufficient concern on healthy lifestyles. A study by Weiller (1997) showed that health is not one of the top ten concerns among rural adolescents (Weiler, 1997). Their understanding and perceptions about health are not commonly aligned with a healthy life style or behaviour either.

From the psychological perspective, contradictive individual characteristics, such as cheerfulness and hostility, are associated with health-risk in childhood as well as in adolescence (Wills et al., 2002). One study by Friedman in 1995 indicated that cheerfulness during childhood was inversely related to longevity. However, individuals with high cheerfulness scores in childhood were more likely to smoke, drink, and take risks as adults, due to more expose to social events (Wills et al., 2002). Cheerfulness is advisable and it needs to be directed to more positive ways. Meanwhile a 25 years follow up study by Siegler and colleagues in 1992 described that a hostility score at age 19 was significantly associated to smoking, higher Body Mass Index (BMI,) and inadequate ratio of total cholesterol/high density lipoprotein (HDL), and it has significant relationship with hypertension and heavy drinking for data at age 42 (Wills et al., 2002).

Another important part of adolescent development is relationship, which is fundamental for a better quality of life in older years. In this case, proper social developement during this period of time is vital in order to build effective relationship skills (Wills et al.,

2002). As part of social development, human interaction, in conjunction with morality, and spiritual dimension shape adolescents' decision making and behaviour (Rew, 2005). The relationship between adolescents-parents-peers plays a role in building personality, and with adequate moral and spiritual dimensions creates strong personality in adolescents to enable them to avoid risky behaviour.

As part of the relationship, communication between parents, teachers, and students plays an important role in creating healthy behaviour. A review by Riesch et al concluded that improving parent-child communication may gain parenting practices, including acting as role models of health behaviour and practices (Riesch et al., 2006).

In the case of adolescents, linking the health aspect with academic functioning is fundamental due to the fact that adolescence is a period of both learning and growing. Health indicators that are mostly used to relate to the academic function can be categorized into socio psychological and physical indicators (Boot et al., 2009). Better general physical well-being is known as one of the health indicators that has a positive impact on academic function (Boot et al., 2009). Other health related aspects that are associated with academic functions are social support, study related issues and health, help seeking behaviour, and life-events in the past (Boot et al., 2009) (Riesch et al., 2006). Consequently, it is a matter of urgency to identify health risk issues among adolescents, as it may indirectly relate to academic functioning in school.

2.7. Conclusion

This chapter reviewed the evidence from various studies and theories and shows that neglecting health-risk among adolescents can cause greater risk of some major chronic illnesses in older age and loose some of the important learning processes of life. Evidence showed common health-risks that cause adolescent morbidity and mortality worldwide including smoking, unhealthy diet, physical inactivity, alcohol abuse, unintentional injuries, unsafe sex-related behaviour, emotional and mental health issues and unhygienic and sanitation issues. Those health-risks are interrelated with each other and either individually or in combination are associated with major chronic diseases such as stroke, heart diseases, diabetes, cancer and chronic obstructive pulmonary diseases.

Indonesian adolescents, like adolescents in other countries, are experiencing similar health-risks affecting morbidity and mortality rate. Those health-risk figures describe a general global challenge to prevent chronic illnesses as early as adolescence, especially in

Indonesia where limited information is available. However, information regarding health-risk for Indonesian adolescents is restricted within small studies that only represent a small scope of certain populations. Understanding the health-risk behaviour among adolescents will enable policy makers and practitioners to improve the health status among adolescents and prevent chronic diseases in later years. Sufficient evidence representing the Indonesian adolescents' health-risk to describe the size of the health-risk issues among Indonesian adolescents is not yet available. Therefore, this chapter concludes that is important to know the health-risk issues that is more valid for local health authorities, scientific forums, and the community in order to prioritizing health needs among adolescents for more effective intervention strategy.

In order to address the health-risk issues in adolescents illustrated in this chapter, the health and education authorities need to develop appropriate intervention strategy. School-based health promotion can be an effective strategy due to multi health determinants among adolescents and the need to involve peers, parents and teachers. The next chapter will review more about the intervention strategy to address health risk issues among adolescent.

Chapter 3. School-based Health Promotion Approach to Prevent Health-risk Issues among Adolescents

3.1.Introduction

The previous chapter has explained that the health-risk issues among adolescents is alarming and needs to be prevented in order to improve the quality of the learning process and the health of adolescents and school community members. The previous chapter also emphasizes the need of school-based health promotion to address the health-risk issues among adolescents because it involves multi determinants of health and can reach students as well as other school community members such as teachers and parents. The purpose of this chapter is to review different intervention strategies to address adolescent health in a global perspective as well as in the Indonesia setting and to describe the significance of studying the school-based health promotion in the Indonesian setting.

The first section of this chapter will review the public health intervention for adolescents health, particularly the cognitive and psychosocial concepts for behaviour change as the conventional approach and health promotion as the integrated public health intervention approach. The second section will review a school-based health promotion as the global strategy for adolescents health. The third section will review the intervention strategy of adolescent health in Indonesia, including the school health program.

3.2. Conventional and Integrated Approaches in Public Health Intervention for adolescents health

Public health can be defined as the science and art to enable the public to prevent diseases, to prolong life, and to promote health using planned efforts (Orme et al., 2007). The efforts include addressing policy issues related to community health, managing health and diseases, and providing health care. Managing public health always needs partnerships that involve different disciplines, professionals, organisations, and institutions, to provide evidence and research based policy support for the health and wellbeing of the community (Orme et al., 2007).

The public health concept and focus changed with the three stages of development. The first movement focused on hygiene and sanitation, clean water, improving the environment and the standard of housing. The second movement emphasized the medical

concept, particularly on germs, bacteriology, diseases prevention and immunization program. The third public health movement, the new public health perspective, started to focus more on the prevention and promotion approaches to improve the health and well being of society (involving community, other non health partners, organisations, and institutions) (Orme et al., 2007).

In recent years, health promotion has also included the impact of globalization on health. Labonte (2007), described that globalization affects health as a result of how globalized financial markets operate. Labonte offers that this influence is felt across many levels (global, national and local) and impacts on the health opportunities and health outcomes of various populations and communities. A countries resources as well as its political development influence how a country manages and responds to health issues. Nations with either good and poorer financial resources may not adjust to globalized markets if there is a lack of political tradition and will which leads to either effective or less effective national policies (Labonte, 2007). Labonte highlights the impact of globalization and how it impacts on the health of the poorest communities in the developing countries where the stock capital in financial, human, natural, social are limited and compromised (Labonte, 2007).

The effect of globalization leads to more challenging health promotion practices. Health promoters need to have a better understanding of both economical aspects as well as trade policy (Labonte, 2007). This is necessary to incorporate the issues raised by a global community, which may lead to a different conceptual framework of both disease and health related issues (Labonte, 2007). However, it is important to understand whether the global donor agencies and global intervention have directed their resources, strategies and assessment in a way that effectively supports the health promotion concept (Labonte, 2007).

The health promotion strategy also faces the challenge to address the issues of whether the previous concept of market-oriented and the economic cost-effective approaches supported or delayed health promotion concept. Other issues surrounding health promotion are whether the concept of a diseases-based health care or better access to primary medical will continue to dominate the health reforms (Labonte, 2007). These issues should be taken into account by the health promoters and creating more challenging effort in the implementation.

As the impact of globalization impacts across all levels and sectors of the international community, creating healthy public policy is a major global commitment. In fact, nations that are economically more powerful are sometimes less consistent in implementing the pledge by moving the business towards the economically weaker nations. An example of this practice is how the tobacco industry in Canada is allowed to have business trade with the developing countries while the Canadian government itself support the restrictive domestic tobacco legislation (Labonte, 2007). Besides the issues of the impact of globalization, investigating both traditional and modern public health concept provides a basic understanding of health promotion approach.

At the beginning, the traditional public health concept is known as public health medicine. It is limited to diseases epidemiology, infectious diseases, immunization, and single sector management. It embraces the concept of diseases particularly infectious diseases which were very common issues during that period of time (Naidoo & Wills, 2005).

Modern public health consists of several key elements and focuses on the population perspective, distinguishes government roles in managing major socio-economic causes of illness, strengthening partnership with the local community and other agencies and improving capacity of communities, professionals and organisations to work together to improve health (Naidoo & Wills, 2005). The health promotion concept is more integrated, and it involves multi sectors and a multi discipline approach as a community based process and partnership.

As a comparison, Table 3.1 describes the differences between public health medicine and health promotion in terms of program focus, knowledge base, core tasks, area of practice, process and values. It can be seen from the table that public health medicine focuses more on diseases, while the health promotion concerns more with health in broader way. The knowledge-based is multi disciplined not simply on health and medicine aspects but public health is also related to sociology, social politics, education, psychology and other disciplines. The public health medicine core task is directed to a quantitative concept such as epidemiology and diseases approach, meanwhile the health promotion strategy is directed at policy development, setting approaches, community need assessments, and behavioural change. The traditional concept is also restricted to health practice, but modern public health is more integrated involving different sectors. Importantly, traditional public health tends to develop a top down process while the modern public

health applies more a bottom up process. The bottom up process in certain ways is more effective than the top down approach, because it is concerned with what actually clients or the population needs.

Table 3.1. Public Health and Health Promotion

	Public health medicine	Health promotion
Focus	Diseases prevention, monitoring, and management	Protection and promotion of health
Knowledge base	Biomedicine, Epidemiology, Health economics	Sociology, social policy, education, psychology
Core tasks	Research into the aetiology, incidence and prevalence of diseases Surveillance and assessment of population health Managing outbreaks of communicable disease (and non-biological hazards) Planning, monitoring, and evaluating screening and immunization programmes Planning programmes and services to improve health care provision	Developing policies to protect and promote health in different settings Education and information for health and behaviour change Working with communities to identify and meet needs Organisational development
Areas of practice	Health sector	All sectors where people 'work, live, and play'
Process	Top down: collecting information and policy development	Bottom up: collaboration and partnerships, capacity building of communities and individuals

Source: (Naidoo & Wills, 2005)

Before discussing the modern concept of health promotion, the following will begin with the explanation of traditional public health or conventional approaches to behaviour change and the key strengths and weaknesses of the concept.

3.2.1. Conventional approach of behaviour change: Cognitive and Psychological-based Approach

Behaviour change has been the focus of public health intervention including health promotion, for many years. Health experts used theories to explain the behaviour change among adolescents. Theories that scientists used for adolescents health-risk behaviour include theory of social cognition, health belief model and theory of decision making (Rew, 2005).

Scientists may use the theory with a different focus dependent on different disciplines. As an example, psychologist may focus on the development of an adolescent's identity and its relationship to health and health risk behaviour, while nurses may focus on adolescents' ability to provide self-care to promote health and sociologist may be interested in the impact of the environment on the adolescent's health and health-risk behaviour (Rew, 2005). In nursing science, practice theory is oriented to action, and it is known to be more useful in intervention development strategy (Walker & Avant, 2005).

Many theories are used to understand adolescents behaviour, such as social cognitive theory, health belief model, decision making model, precede-proceed model, self efficacy theory, peer cluster theory, self-regulation theory, willingness model and other behaviour related theories (Rew, 2005). The next paragraphs will review two main theories that are frequently used to study adolescents' behaviour, which are theory of social cognition and health belief model.

3.2.1.1. Social Cognitive Theory

Social cognitive theory (SCT) of human behaviour according to Bandura is driven by interaction between cognitive and other personal factors that are also formed by the environment and behaviour itself. Associations between person, environment and behaviour elements explain the interaction, that is known as *reciprocal determinism* (Bandura, 1986; Rew, 2005). The element of person includes cognition, affect, beliefs, expectations; and the element of environment includes social setting, other individuals, groups, media; while the element of behaviour refers to observable, intentional, and goal-directed actions and required skills (Bandura, 1986; Rew, 2005). Rew (2005) found that this theory may have difficulty in explaining causal relationships because of the complexity and comprehensiveness of interaction between each element (Bandura, 1998; Rew, 2005). Theoretically, the social cognitive theory is a comprehensive concept to understand human behaviour. However, operationally, it requires more careful analysis in order to assess a causal relationship, because of the complicated interaction between the elements.

The concept of SCT is looking at the behaviour of the individual thinking process which involves individual capability types such as symbolising, forethought, vicarious, self-

regulatory and self-reflective (Rew, 2005). In addition, aspects that are important in understanding SCT concepts includes modelling theory, environmental influences, individual skill and goals and the concept of *innovation* and *diffusion*. These concepts have been used to analyse individual behaviour including adolescent health risk behaviour in many studies and have been applied for health intervention including in prevention and promotion strategies.

An example of SCT use for behaviour study among adolescents is a study of attitude development toward smoking by Strauss et al (2001). They were looking at health beliefs, self-efficacy, social influences, and self esteem that was measured by the Piers-Harris children's self-concept scale, to learn their relationship with physical activity (Strauss et al., 2001). Another example is a study by Sargent, et al (2002) about analysing media influence on smoking behaviour in adolescents (Sargent et al., 2002). This study used behaviour model as the framework to analyse the behaviour, which integrated several smoking risk factors such as individual, peer, parental and media (Sargent et al., 2002). A study by Tencati et al (2002), is another example of the usefulness of SCT as a framework for health promotion intervention to prevent substance use in adolescents. This study successfully combined social learning theory and empowerment theory as the model to develop health promotion intervention to prevent substance use among adolescents (Tencati et al., 2002).

Although several studies, as mentioned above, showed the benefits of SCT concept in understanding adolescents health-risk behaviour, Rew (2005) argued that SCT is complex and comprehensive and makes it hard to test it by in vivo. A study by Winter et al (2003) tried to test SCT to predict leisure time physical exercise. The results cannot support the predictive capability of the theory (Rew, 2005; Winters et al., 2003).

3.2.1.2. Health Belief Model Theory

Another approach that is commonly used in understanding human behaviour is the health belief model (HBM) theory. For many decades, nursing and public health experts have used the concept of HBM to address health-risk behaviour. The concept originated from the social and psychological science to explain human behaviour (Pender et al., 2002), and to understand reasons of negative health behaviour and indentify factors that may

lead to positive health behaviour from cognitive and social science theory (Rew, 2005; Rosenstock, 1960).

The HBM analyses behaviour from an individual perception focus which includes perceived susceptibility, perceived seriousness, perceived threat of diseases, perceived benefits and perceived barriers into three categories: individual perceptions, modifying factors and likelihood of action (Rew, 2005). Many studies have used the HBM concept to address particular health issues for example, to identify predictors for breast cancer screening (Fulton et al., 1991), immunisation for infectious diseases, secondary prevention and tertiary prevention of diseases (Pender et al., 2002). Particularly for children and adolescents, Bush and Iannoti had adopted the HBM to develop the behaviour approach model (see figure 3.1).

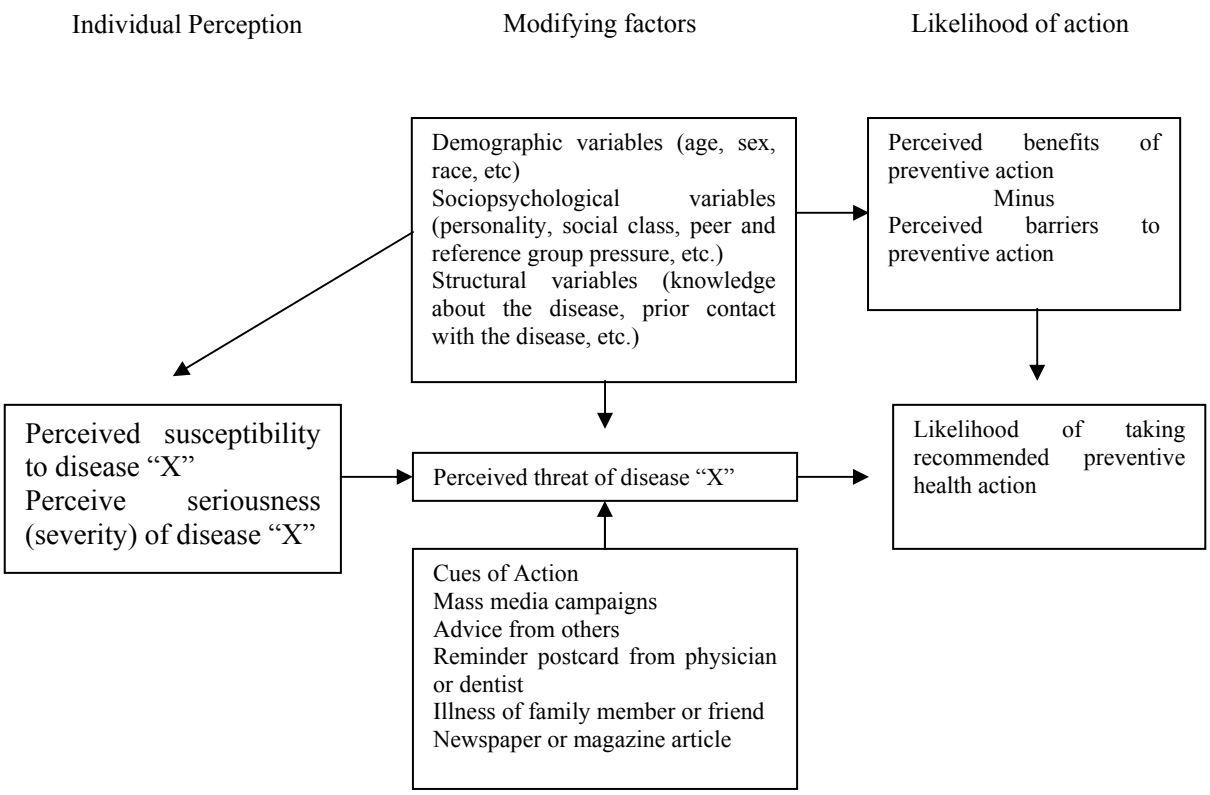

Figure 3.1. The Health Belief Model for children and adolescents
Source: Bush and Iannoti (1990) cited from Rew (2005) p.259

The HBM for children and adolescents (Figure 3.1) tried to combine a variety of concepts including health belief model, social cognitive theory, cognitive development theory and behavioural intention theory (Rew, 2005). It consists of three main factors: modifying factors, readiness factors and behaviour factors. As can be seen from Figure 3.1. the modifying and readiness factors were used to explain the relationship between d emographic aspects, such as sex, age, social economy status and expected outcomes or medical use as an example (Rew, 2005).

The concept of HBM had been incorporated in the health promotion model to enable health authorities to develop more effective health promotion programs focusing on individual characteristics, cognitive processes and behavioural outcomes (Pender et al., 2002; Rew, 2005). For example, a study by Wu and Pender (2002) showed the use of HBM in health promotion approach to identify cognitive factors that influence the physical activity in Taiwanese adolescents (Rew, 2005; Wu & Pender, 2002). This study showed that self efficacy was the best predictor of physical activity among Taiwanese adolescents and that peers' influence was stronger than parents (Wu & Pender, 2002).

Based on the theory of behaviour change, Nola & Karen, (cited in Hayman, 2002) recommended three main interventions to improve self-schemas, self-competence, and well-being among adolescents. The interventions are (1) involvement and support from family members and peer group, (2) endorsing activities and health behaviour aspects that can improve self-schemas and possible selves and (3) providing role models and opportunities to build positive behaviour (Hayman et al., 2002).

Both social cognitive and HBM are mainly analysing the behaviour focused on a psychological approach with the focus on an individual level. This concept is theoretically important and useful to explain adolescents behaviour as well as to discover determinants or contributing factors of positive and negative health behaviour. However, in terms of the real situation in the field, theoretically based approaches of SCT and HBM alone may not be able to provide suitable intervention strategies.

As the determinants of health in adolescents is multi factor, it requires understanding from different disciplines and an integration of a variety of approaches to actually develop more appropriate intervention strategies for adolescents health. Apart from an individual perspective, other perspectives, such as from the health authority and education authority, also need to be considered in improving the health of adolescents. An

integrated approach in addressing health-risk among adolescents is the health promotion approach. The next section is reviewing further the health promotion approach.

3.2.2. Integrated Health Promotion Approach

The World Health Organisation (WHO) defined health promotion as *"the process of enabling people to increase control over, and to improve their health"* (WHO, 1998a, p. 11). It signifies the importance of individuals and groups to have capacity in identifying and realising aspirations to meet the need to change or cope with the environment, if " *a state of complete physical, mental, and social well-being is to be achieved"* (Kaplun, 1993, p. 9). Health promotion as one of the prevention strategies becomes very important for global public health issues including for the disease prevention.

Understanding the concept of health promotion strategy means managing public health issues from main aspects of health determinants such as environment, social, culture and economic aspects. The expression of "enabling people" refers to giving people sufficient capacity to actually apply healthy behaviour in all aspect of their life for themselves as well as making themselves an agent of change for surrounding people to have a more healthy behaviour. Since chronic illnesses are strongly related to behaviour risk factors, the health promotion strategy of behaviour or lifestyle risk factors control is crucial to prevent chronic illnesses.

The health promotion concept can be implemented using different approaches depending on program orientation, implementer and target population. Ewless and Simnet categorised the different approaches into five categories (1) medical approach, (2) behaviour change approach, (3) educational approach, (4) client-centred approach, (5) societal change approach. Table 3.2 describes with more detail the approach for the case of smoking as an example.

Table 3.2 Five approaches to health promotion – summary and example

	Aim	Health promotion activity	Important value	Example- smoking
Medical	Freedom from medically defined disease and disability	Promotion of medical intervention to prevent or ameliorate ill health	Patient compliance with preventive medical procedures	**Aim – freedom from lung disease, heart disease and other smoking-related disorders Activity – encourage people to seek early detection and treatment of smoking related disorders**
Behaviour change	Individual behaviour conducive to freedom from disease	Attitude and behaviour change to encourage adoption of 'healthier' lifestyle	Healthy lifestyle as defined by health promoter	**Aim – behaviour change from smoking to not smoking Activity – persuasive education to prevent non-smokers from starting and to persuade smokers to stop**
Educational	Individuals with knowledge and understanding enabling well-informed decisions to be made and acted upon	Information about cause and effects of health-demoting factors. Exploration of values and attitudes. Development of skills required for healthy living	Individual right of free choice. Health promoter's responsibility to identify educational content	**Aim – clients will have understanding of the effects of smoking on health. They will make decision whether or not to smoke and act on the decision. Activity – giving information to clients about the effects of smoking. Helping them to explore their own values and attitudes and come to a decision. Helping them to learn how to stop smoking if they want to**
Client-centred	Working with clients on their own terms	Working with health issues, choices and actions that	Client as equals. Clients' right to set agenda. Self-empowerment of	**Anti smoking issue is considered only if clients identify it as a concern. Clients**

	Aim	Health promotion activity	Important value	Example- smoking
		clients identify. Empowering the client	client.	**identify what they want to know and do about it**
Societal change	**Physical and social environment that enables choice of healthier lifestyle**	**Political/social action to change physical/social environment**	**Right and need to make environment health-enhancing**	**Aim – make smoking socially unacceptable, so it is easier not to smoke than to smoke. Activity – no-smoking policy in all public places. Cigarette sales less accessible, especially to children, promotion of non smoking as social norm. Banning tobacco advertising and sports' sponsorship**

Source: Ewless and Simnet, 2003, p.45

Table 3.2 shows that the health promotion can be delivered with a variety of approaches depending on the aims. In terms of preventing health-risk behaviour such as smoking combining one more approaches is essential because smoking issues relate to multiple aspects such as individual, social, economical, cultural and political. The variety of approaches in health promotion requires appropriate program development in the government sectors.

In terms of program development, health promotion work can be implemented either top-down, bottom-up or both depending on the different capacities and government systems at different levels. Ewless and Simnet (2003) describe the bottom-up and top-down program development based at different levels. At the individual level, the health promoter can be in a different position spectrum, such as persuasion, giving advice and being in a neutral position. At the persuasion position, being able to give advice but still in a neutral position and allowing the client to make decision (Ewles & Simnet, 2003).

In the situation where health promoters or government capacity and health information systems are already well established, the top-down model may work better. Meanwhile the bottom-up approach in which the health promoters actually develop the program

based on community initiation may work when the community has sufficient awareness and capacity to express their needs in particular health issues to the local authority and to convince the policy makers and decision makers to accommodate their needs. Either top-down or bottom up is also applied in the healthy setting approach.

Setting is important to develop the detailed plan and strategy as different settings require different tactics in health promotion program. The WHO defined settings for health as " *the place or social context in which people engage in daily activities in which environmental, organisational and personal factors interact to affect health and wellbeing"* (WHO, 1998a, p. 19). The setting can be grouped as workplace, hospital, school and household. The age group target adjusts the setting that the health promotion program will focus on.

As for adolescent health, the setting approach is an effective health-risk prevention strategy because adolescents are more likely to engage in a particular setting such as in school. The health-risk prevention strategy for adolescents needs to involve multi approaches and disciplines in a more integrated way. The concept of health promotion introduced in the Ottawa Charter is a comprehensive strategy that uses multi approaches that may be suitable for adolescents' health program.

3.2.2.1. The Ottawa Charter for health promotion

The health promotion concept that was introduced for the first time in the Ottawa Charter consists of five main approaches, including build healthy public policy, create supportive environment, strengthen community action, develop personal skill and reoriented health services (WHO, 1986, 1998a). Building healthy public policy in a health promotion strategy means making policy that involves different approaches including legislation, fiscal measures, taxation and organisational change. Since health is always related to other aspects in human life, creating a supportive environment such as community environment, working places, public places and natural resources, becomes very important. Community action will make a significant contribution in the health promotion activities, because without active community participants, the program likely to be less effective and unsustainable. Individual skills also need to be considered as the change or the behaviour improvement to practice healthy living starts at the individual level. Health services have responsibilities in health promotion and it also involves different settings such as individuals, community groups, health professionals, health service institutions and governments (Kaplun, 1993). The next several sections will describe further about

the five main dimensions of health promotion strategy generated from the Ottawa Charter.

3.2.2.1.1. Build healthy public policy

Policy can be defined in different ways depending on the context. According to Titmuss in 1974, the term policy was used to describe "*the direction of an organisation, a decision to act on particular problems, or a set of guiding principles directed towards specific goals" As stated by World Health Organisation, healthy public policy was build "to create a supportive environment to enable people to lead healthy lives"* (Naidoo & Wills, 2005, p. 67; WHO, 1986).

Some aspects that may direct public health and health promotion management include policy direction, general macroeconomics, environmental and demographic conditions. Policy at the higher level, such as at national level, commonly influences the technical and operational aspects of health programs at the lower level. Therefore, it is crucial to have strong and healthy policy support in the health program (Naidoo & Wills, 2005). Healthy public policy also refers to a condition where the government sectors at all levels are aware of and responsible for all the decisions they make concerning the health of the community (Eager et al., 2005).

Policy development involves ideological beliefs and values, economical aspects, political load, evidence based information and research. Several main steps in the policy making process defined by Walt in 1994, are (1) problem identification and issue recognition; (2) policy formulation; (3) policy implementation; and (4) policy evaluation (Naidoo & Wills, 2005).

Building healthy public policy for lifestyle risk factor control programs is very challenging as it requires many different disciplines to be involved in the policy development to provide more sustainable programs. The health promoters should be able to have enough evidence and involve appropriate partners to convince the policy makers (Eager et al., 2005; Kaplun, 1993). Adequate evidence can be gained from several sources such as surveillance systems, accurate and valid reporting and recording system for the health institutions, global and local scientific evidence, community needs assessment, as well as the evaluation report of the previous programs (Eager et al., 2005).

3.2.2.1.2. Create supportive environment

Implementation of any health program is strongly related to the environment where the target communities are living. As an example, quit smoking programs may not be that effective without a supportive environment such as smoking bans in public places, restrictions on cigarette advertising, or age restriction for cigarette purchasing and cigarette accessibility (Eager et al., 2005).

Involving environment aspects in health promotion programs should include not merely the physical environment but also economic, socio cultural or political environment. All of those environmental views are interrelated with each other in public health and health promotion program management and implementation. Anti smoking programs can be used as an example of how the political environment plays an important role in supporting the program implementation. Another example is dietary habits to prevent obesity. The public health sector should consider the higher availability and accessibility of high fat foods which usually are more tasty and cheaper (Eager et al., 2005)

Lifestyle risk factors have a substantial relationship with the environment in term of influencing individual and community behaviour. A supportive environment can be created by involving all the related stakeholders, such as local government authority, education department, professional organisations and industry sector. As an example, a quit smoking program in high school adolescents needs active contribution from the education sector, local government, family and other school community. The school should provide a smoke free environment in the school. The parents and family at home also need to create a smoke free home and the adolescents social environment should also support the non smoking behaviour, especially the peers group. Those supportive environments will make the quit smoking program in high schools work more efficiently, resulting in better outcomes and may be in shorter period of time (Eager et al., 2005).

3.2.2.1.3. Strengthen community action

Targeting the health promotion program for community needs to have a clear understanding about the community. Community can be defined in different ways depending on the field of interests and concepts, such as place/locality, network of interests or social system (Chu & Simpson, 1994). Nutbeam in 1986 defined community as follows: " *A community is a specific group of people usually living in a defined geographical area who share a common culture, are arranged in a social structure, and exhibit some awareness of their identity as a group. In modern societies, individuals rarely belong to a single, distinct 'community' but maintain membership of a range of*

communities based on variables such as geography, occupation, social contact and leisure interests" (Eager et al., 2005). Gallagher et al (2003) described community by geographical area, culture, religion, or other group characteristics (Easterling et al., 2003). In a health promotion approach, defining the community structure and characteristics is required to develop the program in a more effective way according to community needs.

As one of the community actions needed is community participation. It is necessary to improve program efficiency, make it more sustainable, cost sharing, to enhance equity, capacity building and empowerment (Chu & Simpson, 1994). According to Chu (1994) there are four different community participations depending on the level of power and ownership of the process. Community participation includes community control, community management, community representation and community involvement. Community control is when agenda setting and the decision making process are under the community power. Community management refers to participation when the community takes part in planning, designing, implementation and maintenance, which is entirely responsible for the management process. In the condition when the community participates in the decision making process in a particular social system, it refers to community representation (Chu & Simpson, 1994).

Public health professionals have actually developed community based programs for some years. Community based programs in the new public health perspective are focusing more on community participation or engagement and community empowerment. Community engagement is more effective because it involves the community as the foundation to develop the strong and independent community activities (Gilchrist, 2007).

A community based approach in health promotion strategy has been largely applied for managing public health issues in different settings. Effective community based approaches require effective communication, networking, relationships and understanding the concept of 'social capital' as well as 'social marketing'. Human relationships and being open minded are important in building effective communication. Capacity and skills to make good relationships and having good personalities leads to active networking (Orme et al., 2007).

The concept of social capital and social marketing are essential in developing a community-based approach. Social capital basically consists of "*shared understanding, levels of trust, associational memberships and informal networks of human relationships that facilitate social exchange, social order and underpin social institutions*" (Orme et

al., 2007, p. 143). The key points of social marketing can be categorized into the words '*bonding, bridging and linking'*. It is essential to bind with the people as part of the community to make closer communication. Bridging means the efforts to manage or bridge the difference between individuals, groups or institutions. Linking refers to the connection that has been built that makes different group of community work together sharing power, information and resources (Orme et al., 2007).

In other words, it is crucial to understand the characteristics of individuals as well as a community before setting the health intervention program or developing community networks and community actions. Active and sustainable community participation or involvement also requires strong partnerships and collaboration between the all stakeholders, including communities, government and other related professional organisations or institutions.

Community plays an important role in any health intervention program, including the health promotion activities. Studies in several districts in India and Indonesia show that community based interventions are more effective in risk factor control programs for non-communicable diseases (Orme et al., 2007). Several key issues in strengthening the community action include the role of community leaders, local public figures and active potential community members. Maintaining the relationship over a longer period of time, between all stakeholders within the community is also very crucial. Although the intervention program may stop or finish at certain point in time, if the relationship still continues, the community will independently run or continue the program.

3.2.2.1.4. Develop personal skill

As part of the community, individual roles bring significant contribution to the health program and it is imperative for the program to be integrated with other approaches in the health promotion concept. Developing personal skills in health promotion strategies means improving the capacity in understanding and the awareness for certain health issues that enable the individual to cope with or prevent certain illnesses (Eager et al., 2005). Several methods to enhance personal skills include health education, campaign, prevention and clinical practice and other integrated methods in different community settings, including hospitals, workplaces, schools and the household setting (Kaplun, 1993).

Developing personal skills by integrated based approaches can be performed in more specific ways by taking into account the setting and individual targets. The setting can be health service institutions such as hospitals, primary health centres, health clinics, schools or workplaces. The individual target may include health officers, non health government officers, health volunteers or community members with particular characteristics such as tradition, culture, religion, age and gender (Eager et al., 2005). The individual target in a particular setting is basically focused on the behaviour change aspect.

Changing behaviour is one of the most challenging issues in health promotion implementation, as it requires a relatively long time to change individual behaviour, especially when it already is a habit or long term behaviour. Instead of time, other important elements to be considered in change behaviour include psychological aspects, values, culture beliefs and socio-economic conditions. All the stakeholders and players in health promotion programs for lifestyle risk factors should understand that the outcome of the intervention program and activities a require relatively long period of time to see improvement, for example to see the improvement from heavy smokers becoming non smokers it will take two years or more (Chu & Simpson, 1994).

3.2.2.1.5. Re-orient health services

Re-orient health service in the health promotion action means directing the health service concept to the promotion and prevention approach in line with the curative and clinical services. The health service should also provide services that meet peoples needs and involves all players including individuals, communities, health professionals, health institutions and government to collaborate in managing public health issues (Jones et al., 2002)

In terms of the health promotion program for lifestyle risk factors, health services can give sufficient contributions to motivate and provide enough resources for the community in any of the activities to control life style risk factors. As an example, communities can utilise the available health workers and facilities to control blood pressure and diet. The local health service or Primary Health Care (PHC) can provide nurses and blood pressure measurement testing in the community activities, so that people can receive more information or health education related to blood pressure and measurement of their blood pressure more regularly (Eager et al., 2005).

PHC as the basic level of health service institution originally provided more services mainly for the curative and clinical aspects. It is very challenging for the PHC to also strengthen the promotion and prevention services for the community, because of their work load. They normally spend most of the time curing the patients and do not have sufficient time and budget for the prevention program activities. This situation not only happens in developing countries that have limited resources but also occurs in more developed countries such as in the United Kingdom (UK) and United State of America (USA) (Jones et al., 2002).

It requires more effort and time to strengthen the prevention and promotion capacity of health services. It needs active and sustainable contribution from the related stakeholders at the local level, such as the education sector, local authority, local health office and other community groups or professionals groups. Active and strong collaboration with the local potential community members and leaders can optimise the roles of local primary health service institutions in promoting the health of the community.

Overall, the five approaches of the health promotion concept described earlier are used as the fundamental approaches in developing the health promotion strategy for adolescents health. Preventing health-risk among adolescents requires not only a single approach with the focus on the multi risk issues, the setting-based approach can be the appropriate tool to improve adolescents health. The next section will review how the setting-based health promotion approach addresses the health-risk issues among adolescents in the school setting.

3.3. School-based health promotion as a setting-based approach for adolescents health

Settings approach is very crucial in initiating health promotion strategy development. As it was stated in the Ottawa Charter,

" Health is created and lived by people within the settings of their everyday life; where they learn, work, play and love. Health is created by caring for oneself and others, by being able to make decisions and have control over one's life circumstances, and by ensuring that the society one lives in creates conditions that allow the attainment of health by all its members."(WHO, 1999a, p. 14).

In the new perspective of public health, the settings approach has been known as the focus for the development of health promotion. A wide range of institutional and community settings such as city, workplace, prison, hospital and schools are used as the

starting point to identify issues and to develop the prevention or promotion strategy. The terminology is slightly changed for institutional settings such as hospitals and schools, and becomes 'health-promoting hospital' and 'health-promoting school' (Denman, 2002).

It has been suggested that for a setting approach, it is necessary to modify the traditional conceptual blueprint of health promotion to include an organisational as well as a medical concept. Baric (1993) gives the following examples:

- Organisations as systems – their structure and size, their mechanisms and processes, effectiveness, technology, power structure, productivity, relationship to the environment;
- People in organisations – management theories, responsibilities and goals, motivation, status and role, group dynamic, leadership, conflict and change, consumerism;
- Accountability – the concept of self-assessment and evaluation, the concept of auditing and social responsibility, health gain as an indicator, control over negative or undesirable side-effects.

In particular for adolescents, the health programs are closely related to education programs because individuals who are not in good physical and mental health will not get optimum education. Certain comprehensive and creative strategies to improve the well being of students, teachers, families and communities is necessary. The third international Conference on Health Promotion, held in July, 1991 in Sundsvall (Sweden) described a broad range of illustrations on how comprehensive approaches of health promotion may lead to a significant improvement in the quality of school health and education for health (Haglund et al, 1993, cited from Chu, 1994, p.165).

Education is a development indicator that is frequently used to measure improvements in community well being and national development. Education for youth is an essential part of the life change, growth and development. An effective education system contributes to the overall achievement of a school-based program. An effective education system relates to education reform that generates educational change that enables schools to implement and achieve the most up-to-date learning approaches. Positive educational change includes enhancement in all aspects of learning process, mainly are relationship between all players and education values (Fullan, 2001). The potential change in education, according to Fullan, requires understanding that is more comprehensive. This includes concepts such as meaning, coherence, connectedness, synergy, alignment and

the capacity for continual improvement. Consequently change within a school setting is not only complex but also very challenging (Fullan, 2001).

Both schoolteachers and the school principal are key players that contribute the most to future changes within a school community. In addition, both of them are also the target of change besides the students and other school community members. Professionalism in teaching contributes to successful schools and it accounts for one third of the variance of student progress (Fullan, 2001). The key areas that teachers should be master include teaching skills, classroom environment and professionals characteristics such as high expectations, passion for improvement, accepting and responding to responsibility and effectively working as a team (Fullan, 2001). Sufficient support from the school principal leads to creating and achieving the teacher's professional capacity and supports developing more coherent professional community (Fullan, 2001). Improving professionalism within the school environment also requires the balance of both top down and bottom up inputs. Sufficient support from the district authority is also powerful in terms of sustainability, partnership and directing the changing process of school community (Fullan, 2001).

The school is an effective setting in health promotion because it is the place where most of the school age children and adolescents spend their time and also it can reach other school community members such as teachers, staff and parents/guardians. Evidence from the school health evaluation in UK showed that schools can build substantial learning and health with proper support, program planning and activities (Ewles & Simnet, 2003). The appropriate health promotion setting approach for adolescents health is a school-based health promotion which is also called health promoting school.

To become a health promoting setting, schools may have to re-examine their very ethos, philosophy and purpose and accept the fundamental principles associated with the management of change (Denman, 2002). As illustrated by Denman (2002), Whitehead and Tones have posed five main points that help test the peculiar characteristics, benefits and disadvantages of particular settings, that are relevant to schools:

- Access. Identify the target group who may be accessed through a given setting, the number of people who will be reached and to what extent is their state of learning-readiness compatible with the program aim?
- Philosophy and purpose: How the overall goal and philosophy of the setting is compatible with the philosophy and purpose of the program.

- Commitment: How the organisation and its members are committed to the programme goals.
- Credibility: How credible are the institution and the resources that will be the health promoters, and how the public will respond to them.
- Competence: regardless of commitment and credibility, do the potential health educators and health promoters create the knowledge and skills to communicate with and educate clients within the setting?

Beside the strong collaboration between health and education, it will also require sustainable and close partnership with other government sectors in order to achieve a comprehensive school-based health promotion (Chu, 1994).

Another important element for effective school-based health promotion is school connectedness or school bonding. School bonding consists of two main interdependent components such as connection and commitment. Strong school bonding was related to a commitment of less tobacco, alcohol and drug use. School connectedness is created by the socialization processes that comprise a chance for participation, actual involvement, teaching of social, emotional and cognitive proficiencies so that students will have good performance in school and other places (Catalano et al., 2004).

School-based health intervention program has been used to address health issues among school age children and adolescents. Most of the intervention program showed successful experiences in improving students' knowledge and awareness but few intervention programs showed a positive change in behaviour. A control trial study showed that the intervention program had little effect on children's behaviour (Sahota et al., 2001).

Health promotion strategy becomes one of the imperative approaches in the new perspective of public health. The new public health program focused more on health inequality, poverty, environment, promoting health and lifestyle related diseases prevention. Experts are more concerned with applying the health promotion concept to improve public health status (Orme et al., 2007).

A school-based health promotion is one that continuously strengthens its capacity as a healthy setting for living, learning and working. A school based intervention program plays an important role in national development. As stated by the WHO (WHO, 2001), it will promote health and learning through

a. Collaboration between health providers and education providers including teachers, teachers' unions, students, parents, and community as a measure to create healthy schools;
b. Attempting to achieve a healthy school environment, health education and school health service, in collaboration with the community, and the local health office;
c. Improving the health of all related players including school personnel, families, communities, students, and decision makers who understand each step toward a healthy life style.

A School health program is one health development strategy for adolescent health. It can be an entrance gate for health providers to improve the health of adolescents, as they spend more than half of their time in school. The Health-promoting school concept is an effective strategy to reduce multi risk factors related to chronic diseases among adolescents. Chu stated that "*Schools are seen as the setting in which health may be enhanced or destroyed. The setting includes the school community (parents, students, staff) and the social relationships that exist between these stakeholders; the learning and teaching environment (including the physical environment and the operational practices of the school); and the learning and teaching program (the curriculum and its organisation*)" (Chu & Simpson, 1994, p. 142).

The new perspective of public health gives priority to particular aspects such as a community based approach, partnerships, sustainable development, inequality in health, globalization and health, and the environmental impact on health. Those aspects are basically related to the recent international public health issues and also included in the school-based health promotion concept. As the concept of school-based health promotion has been applied globally, experiences from different school-based health programs for adolescent health will describe how different countries address the health issues among adolescents. The next section will review the current practice of school-based health promotion to obtain evidence of different strategies applied in different countries.

3.3.1. Current practice of school-based health promotion

Applying school health promotions become challenging when the school leaders and community are still focused on academic achievement in school. An ecological and cross sectional study in 25 municipalities in Sweden illustrated that the health promotion program and general competency development in school tended to be competing rather than complementary (Guldbrandsson & Bremberg, 2005b). For example, if the school

decided to focus on academic achievements, they will be likely to focus less on promotion of physical activity (Guldbrandsson & Bremberg, 2005a). However, several experiences from different countries showed positive results of the school-based program to address certain health issues in adolescents.

School-based health promotion for children and adolescents can be effective in some cases. A systematic review by Prof. Sarah Stewart showed that school-based health programs are most likely to be effective for promoting mental health, reducing suicide potential, depression, perceived stress and anger, preventing both violence and smoking, the promotion of healthy eating and physical activity. In addition, the review found that school-based health programs were effective if implemented under the following conditions: continuity, consistency and conducted over a sustained prolonged period of time (more than one year), were comprehensive in their approach, led by skilled human resources, used whole school approaches, incorporated a peer-led strategy and included more comprehensive approaches (Stewart-Brown, 2006).

The social and emotional learning (SEL) program is one example of the school-based approach that can be used to promote health for children and adolescent. SEL program uses systematic classroom teaching that increases the capacity of the students to understand and manage their emotions, appreciate other people views, create pro-social goals and solve problems and to apply a variety of interpersonal skills to manage relevant tasks or issues in an effective and ethical way. Generally, this framework may be able to promote the growth and development of youth who will engage with health-promoting behaviour and good personal character and quality (Payton et al., 2000). This concept is useful for the mental health development for children and adolescent.

European health authorities developed the commitment of health and learning in schools since 1998 which was initiated by the National Healthy School Standard (NHSS) as a collaboration between the Department of Health and the Department of Education and Skills. They also have a Young People's team, which is under the Health Development Agency, to assist the school in implementing the school program to improve the school philosophy and environment for better health and learning and developing partnerships and support between education and health at the local level (Ewles & Simnet, 2003).

In the context of the health system in Australia, improvement of the school based health program depends on the specificity of the intervention, time availability, quality of intervention, support from parents and peer group, degree of intervention, and

reinforcement of the intervention (O'Connor & Parker, 1995). The school health program in Australia also developed comprehensive school health education to improve school age children and adolescents health status.

Since the early 1990s the school health program in Australia included three components; school health services; school health education and school health environment. The school can be defined as having comprehensive school health education by several criteria such as: a holistic view of health, use of the school resources for health, enabling the students to understand the health massages, and empowering students for healthy living and health support (O'Connor & Parker, 1995).

Five practical steps for the school health educator have been introduced in Australia by Nader in O'Connor & Parker (1995). The steps include: (1) Form links to the community, (2) conduct needs assessment, (3) develop school health services, (4) develop school health education and (5) develop the school environment (O'Connor & Parker, 1995).

Some challenges in the implementation of comprehensive school health program in Australia include building an effective relationship and collaboration between students, parents, the education system and community (including health sector), providing sufficient budget, understanding the complexity of health, getting proper support from parents and the community and making health as important as other sciences in school curriculum (O'Connor & Parker, 1995).

Experiences of implementation of comprehensive school health program also can be gained from USA at the state level. They focused on the capacity building for the school health education in Colorado State in 1994. Prior to that program, Colorado State as well as other states in USA, still struggled with the school health program, as the existing school health education program tended to be slowly developed and uncoordinated (Easterling et al., 2003).

The USA Centre for Diseases Control has stressed that school based health education is significantly important to manage the leading causes of morbidity and mortality among youth (ten to twenty years), such as smoking, drug abuse, alcohol abuse, unsafe sexual behaviour that lead to sexual transmitted diseases, unintentional injury, unhealthy diet and physical inactivity (Easterling et al., 2003). The USA CDC has developed eight components of comprehensive school health program since in the year 2000. The components include: (1) health education, (2) physical education, (3) health services, (4)

nutrition services, (5) counselling, psychological and social services, (6) healthy school environment, (7) health promotion for staff, and (8) family/community involvement (Easterling et al., 2003). The CDC components model was used as the fundamentals of the Colorado school health education.

As the Colorado school health program focused on capacity building, most of the activities were focused on health education, health curricula and school commitment to prioritise health for the students, teachers and school staff. The main keys of the program were a knowledge-based approach, awareness, leadership and commitment of the school community (Easterling et al., 2003).

The implementation of a comprehensive school health program in China shows a difference experience. China started the health promoting school program on 1996. They started with an issue based pilot project in some provinces and gained successful outcomes and a constructive experience in school based health program implementation (Aldinger et al., 2008). They conducted the study to evaluate the health promoting school in some provinces in 2004-2005. The study focused the activities on ten aspects in implementing the health promoting school approach, being school health policy, physical school environment, psycho-social school environment, health education, health services, nutrition services, counselling/mental health, physical exercise, health promotion for staff and outreach to families and communities (Aldinger et al., 2008). Generally, findings from the study showed improvement of the behaviour and understanding towards health among the school community. However, the improvement may be not as high as when the evaluation is conducted after a longer period of time such as after five years or more, because the most challenging issue for almost all health programs is how to maintain the program or sustainability of the program.

An example of a school-based planning and evaluation program for adolescent health developed in the USA is the School Health Portfolio System (SHPS). This system is useful to evaluate the existing school health program and to develop the planning program by following up the evaluation outcome. The system consists of electronic templates of key documents to guide school teams in creating a customised portfolio, and a list of sample goals and objectives that assess achievements of a goals related to the school health program (Weiler & Jr, 2004).

A school-based peer-led program had been introduced to address the anti-smoking intervention in UK. The program included activities such as recruitment of peer

supporters, two day training courses, four follow up visits within ten weeks of the intervention program, and smoking education. This model was developed upon the 'diffusion innovation' model (Starkey et al., 2005).

Since adolescent health involves several health issues, intervention strategies require a more comprehensive and multi approaches strategy. Comprehensive strategies that include health and social policies focus on creating and supporting healthy environments, involving communities and families, are very important in improving adolescents' quality of life as a future investment (Villarruel et al., 2002).

It is clearly illustrated from the experiences in different countries regarding the global strategy and concept of school-based health promotion that the health promoting school approach can be an effective strategy to enhance adolescents' health and well being. The next sections will review two key aspects in developing a school-based health promotion, which are a needs assessment to identify needs and partnership and collaboration to support the school-based health promotion program.

One of the crucial methods is assessing the needs from different perspectives to generate the health promoting school concept into practice Chu (1994) stated that assessing community needs refers to a process of assessing needs, opportunities, readiness, capacity and resources in order to improve health programs that meet the needs and fill the gap between the facts and the expectations. The health promotion concept seems to have broader perspectives and more of a sense of community health while the public health medical concept is more specific on medicine and diseases. In this case, needs assessment is one of the important processes in developing effective school-based health promotion for adolescents.

3.3.2. Needs assessment in school-based health promotion

Need assessment and issue prioritisation are the two main initial steps in developing the health promotion program and activities. The concept of needs will enable the health promoters running the program to effectively meet the needs of the target groups. A typology of needs had been developed by Bradshaw in 1972 (cited from Ewles & Simnet, 2003; Kilduff et all, 1998) which are (1) normative need, (2) felt need, (3) expressed need, (4) comparative need (Ewles & Simnet, 2003; Kilduff et al., 1998) . Normative need is the need that is defined by the professional or experts based on the standard they made. If the particular target group cannot meet the standards means there is a need. Felt

need refers to the need defined by the target group or the need that they want. The felt need may be influenced by the knowledge and awareness of the target group, as well they may fail to feel the need for a certain issue because they do not know or they have limited knowledge about the issue. Expressed need means the need that is actually expressed by the target group or their demands regarding particular health issues. Expressed need normally comes from the felt need. However, sometimes not all the felt need can be expressed because of insufficient opportunity and motivation. Comparative need is the need described by comparisons between similar target groups in implementing particular health program (Ewles & Simnet, 2003).

An example of applying the needs assessment at a school can be seen in Table 3.3. The table provides example information of activities according to the type of needs. The case example is for promoting healthy diet in schools (Ewles & Simnet, 2003).

Table 3.3. Type of Need and Case Example of Healthy Diet at School

Type of need	Case example on healthy diet in adolescents at school
Normative need	Standard guideline provided by The Dietician Association: - schools should provide healthy food, and not be allowed to sell unhealthy foods such as soft drink, alcohol drink, cigarettes, unhygienic food, and other foods that contain too much sugar, salt, colour, and other food additives. - BMI standard for adolescents age 12 to 15 years is 21 to 23 kg/m2 The evidence shows: Schools still provide unhealthy and unhygienic foods Average BMI of the students is higher than 23 The needs determined by the experts are: - To reduce the BMI to normal level - To develop programs and activities to prevent overweight - To develop activities to promote healthy food at school
Felt need	The adolescents feel: - They need more information of the health effect of being overweight. - They like tasty and cheap foods at school
Expressed need	All the students join an exercise group as an extra curriculum activity
Comparative need	The schools that run school health program or health promoting school program provide more healthy foods in the school canteen and provide more exercise or physical activities for the overweight students in the school.

Needs assessment is crucial as part of implementing the health promoting school concept. It is very useful to determine the main health issues or priorities that need to be addressed in school. It is very important because each school community may have different health issues to be addressed in a certain period of time. The school should have a clear understanding that the health activities and programs should meet needs from different perspectives particularly the students, as well as the teachers and other school community members.

Besides the needs assessment, the other important aspect in implementing the school-based health promotion is the partnership and collaboration strategy. This is important because the school-health issues need to involve more than one player and it requires strong relationships with related stakeholders. Therefore, it will be necessary to review further the partnership and collaboration strategy in a school-based health promotion.

3.3.3. Concept of partnership and collaboration strategy school-based health promotion

Partnership is one of the most challenging strategies in public health management at the global, national and local level. It requires special efforts and skills to maintain sustainable active partnership. Almost all health programs require healthy and sustainable partnerships. A partnership and collaboration can be defined as ways of co-ordinating activities – between individuals and organisations (Orme et al., 2007).

The health sector also uses the term 'healthy alliance' that refers to partnership, which means working together to promote health. The health department in the UK health system defines healthy alliance as a partnership of individuals and organisation built to make people able to increase their influence over the wellbeing and health risk factors. (Naidoo & Wills, 2005).

As an example of partnership for the public health sector in the UK healthy system, partnerships has been implemented at national level as well as at local level particularly in public health policy development, organisational partnership and joint activities between professionals (Orme et al., 2007). Experience in the UK health system shows that government systems or parties give significant support to the type of partnership implemented for government programs (Orme et al., 2007).

Orme et al (2007) described the partnership in public health programs as crucial in some ways, such as : "(a) tackling the key determinants of health (as conceptualized in the

social model of health) requires action by a range of international, national and local agencies; (b) seeing public health as a shared responsibility; (c) needing to avoid overlap and duplication; (d) recognizing the important role individuals and communities play in promoting their own health" (Orme et al., 2007, p. 71).

Partnership can be categorised into different types. There are 6 main types of partnership: governing partnership; accountability partnerships; purchaser-provider partnerships; NHS-local authority partnerships; partnerships with patients/public; and central-local partnership (Hudson & Hardy, 2001). Meanwhile Ling (2000) described that partnership can be categorised by four key dimensions, such as their membership, the link between members, the scale and boundaries of the partnership and the wider context within which the partnership operates (Ling, 2000). As stated by Stewart (in Orme et al, 2007) partnership can be grouped as strategic, facilitative and implementation partnership. Partnership also can be implemented at different levels, such as international level, national level, agency level, community level and individual level (Orme et al., 2007). As described by Orme et al, successful partnership can be seen in two scopes, process success and outcome success. Successful partnership process involves the commitment and engagement of partners; agreement about purpose; involves high levels of trust, reciprocity and respect; favourable political and social conditions (finance, institutional arrangements, legal structures); satisfactory accountability arrangements and adequate leadership and management. Meanwhile the out come success of the partnership refers to improved service delivery, achieving greater equity, improvements in efficiency and effectiveness, improved experiences for staff and informal workers and general improvements in health status (Orme et al., 2007).

Partners in public health can be categorised according to different levels of partnerships, such as international, national, local agency, community and individual. For the international level, the partners can be the World Health Organisations, Global Fund, United Nations and other international agencies that work in health sector. The partners at national level can be other health related programs organised by other institutions or other departments at national level or even partnership between regions in one country. Partnership at the local level involves the local authorities as partners, as well as other health agencies, local agencies and professionals (Orme et al., 2007).

3.3.4. Health-Promoting School Approach to prevent health risk behaviour among adolescent

A Health-promoting school approach was introduced by WHO in the early 1990s, as one of the main goals of WHO's Global School Health Initiative, which was launched in 1995. The WHO strategies on the Global School Health Initiative include (WHO, 1996):

- Research to improve school health programs
- Building capacity to advocate for improved school health programmes
- Strengthening national capacities
- Creating networks and alliances for the development of health-promoting schools

The definition of health-promoting school (HPS) varies depending on the local need and circumstance. A health-promoting school describes '*health*' as physical, social and emotional wellbeing. It attempts to build health into all aspects of life at schools as well as in the community (WHO, 2000).

Health promoting school is part of the setting based approach in health promotion and education strategy that has been the focus of public health management in recent years. Naidoo and Wills (2005) summarised that the modern public health strategy focused more on the population perspective instead of the individual concern. Therefore, the setting approach become a significant in health promotion strategy, as it is addressing the targeted community for particular health issues. The setting can be in hospitals, schools, workplaces or other community places depending on the health issues. As for adolescent health, the school setting is the most effective setting to focus on because this age group spend most of their time in school.

Health-promoting schools apply a comprehensive, adaptable and innovative concept of health promotion approach. The implementation of HPS varies between countries according to local strengths and needs. The main point of HPS is that every school can find ways to improve health and address the health issues by building strengths and drawing on the imagination of students, parents, teachers and administrators (WHO, 2000).

As determined by WHO, HPS contains six main concepts, as follows:

a. Engage health and education officials, teachers and their representative organisations, students, parents, and community leaders to promote health, families and community groups actively participate in the school health activities; community services,

business and organisations supports the school activities, school/community projects and outreach of health promotion for school staff.

b. Strives to obtain a safe, healthy environment, including healthy sanitation and water; freedom from abuse and violence; a climate of care, trust and respect; social support and mental health promotion; and safe school grounds; opportunities for physical education and recreation.
c. Provide skills-based health education by improving curricula to increase students' understanding of factors to enable them to make healthy choices and adopt healthy behaviours throughout their lives; include critical health and life skills in curricula, a focus on promoting health and well-being as well as preventing important health problems, and information and activities appropriate to children's intellectual and emotional abilities.
d. Provide access to health services, focusing on services (screening, diagnosis, monitoring growth and development, vaccination, selected medication or procedures) that may be most efficiently provided in the school setting, depending on school resources and mandates; partnerships with local health agencies that will provide services; nutrition and food safety programmes.
e. Implements health-promoting policies and practices, including an overall policy supported by school administration and management as well as teaching practices that assists to create a healthy psychosocial environment for students and staff; policies on equal treatment for all students; policies on drug and alcohol use, tobacco use, first aid and violence that help prevent or reduce physical, social and mental problems.
f. Strives to improve the health of the community emphasizing community health concerns; participating in community health projects.

The World Health Organisation utilise the health promoting school concept to address major health issues in adolescents, such as tobacco use, oral health, reproductive health, violence and other health risk behaviour related diseases (WHO, 1996). The World Health Organisation provides guidelines for countries to build the health promoting school, which include some steps in the following:

- Establishing school health team

  The school health team should be able to develop health activities in school. The team includes administrator, leaders of teacher's representative organisations, teachers/school staff, students, parents representatives, local nurses or health

workers, food service provider, parent's /teacher's association representative. The number of team members should be between eight to fourteen people.

- Assembling community advisory committee

  This advisory committee is to bridge the relationship between community and school personnel for better communication. The committee members can be representatives from several groups such as health professionals, family and youth, labor/trade unions, women's groups, early childhood education, municipal or local government, recreation, arts and crafts, banking, sanitation/public works, law enforcement, local businesses, transportation, and other NGOs. The number of people in the committee can be between 15 to 25 people.
- Develop activities, such as:
  - Team building and networking
  - Reviewing existing school-based health program
  - Assessing community health problems, policies, and resources
  - Develop action plan (include setting the goals, defining objectives, develop the activities plan)
  - Review and evaluation
  - Develop or participate in training or technical assistance (can be done on regular basis to anticipate questions or any problems)

(WHO, 2000).

Those are the general activities that schools need to consider to initiate the health promoting school concept (WHO, 2000). Technically, the detail of the activities may vary in different places depending on the local capacity and resources. Schools may modify or add more steps if necessary, and it is not necessary to be implemented with certain resources, even schools with very limited resources can still initiate the health promoting school concept.

Young (2005) has summarized the three phases of the health promoting school model, which are the initial experimental phase, strategic development phase and establishment phase. The detail of the three phases is described on the following:

Initial experimental phase	
• Early innovators (mainly from the health sector) raise the issue of health promotion with colleagues in the education sector. • The education sector at first tends to perceive health in bio-medical terms rather	• More strategic approach gradually builds through partnership working at national (government) level and/or education authority/regional level. • The health sector funds posts in the education sector.

than as a social model, resulting in a deficit of partnership-working between education and health sectors. • School Health Services are primarily in a traditional prevention model. • Non-governmental agencies work with individual schools and individual education authorities on specific health issues. • Early sporadic or short term developments occur which may be driven (and resourced) by political concerns about specific topics such as HIV/AIDS or substance use. • Related initiatives such as Community Schools and Eco-Schools are not perceived by education to have anything in common with health promoting schools because of the prevalence of the bio-medical model of health within the education sector. • Adoption of some health promoting school terminology by education policy makers. In the early stages this apparent adoption of terminology may not be matched by real changes in practice. **Strategic development phase** • The education sector starts to perceive the benefits of health promoting schools in meeting social and educational needs in their schools and communities. Authorities start to build capacity through training and staff development. • School health services embrace a wider health promotion role.	• By trial and error and working together, there is a reduction in antagonism between the education and health sectors and a slow, gradual increase in mutual understanding of both sectors. This includes the clarifying of priorities, values, language and concepts. • Some shared posts develop between the education and health sectors, with education contributing resources. • More sophisticated research and monitoring of progress is developed as the political profile and the expectations rise. • Models are developed to map links between education and health in relation to school health. (St Leger & Nutbeam, 2000 cited from Young, 2005). **Establishment phase** • Policy statements at national level that initially tend to be in the health sector feed into the education sector. • Policy statements on specific school initiatives relating to health are increasingly placed in the context of health promoting schools, for example curriculum policy statements, food provision policy in schools. • The education sector takes on greater responsibility for health promotion in schools and integrates health promotion into mainstream education. • At the level of the individual school, health promotion becomes institutionalized, that is it becomes integral to the schools core values and normal ways of working.

(Young, 2005, p.115)

The implementation of health promoting schools requires several important components outlined within the Ottawa Charter for Health Promotion. These include healthy school policies, the physical environments of the school, the school's social environment, individual health literacy and action competencies, community links and health services (St Leger, 2005). It is clear that healthy school policies need to become a legal requirement as part of the implementation and sustainability of health activities in schools. These policies support the creation of healthy schools by promoting the health and well-being of not just the students but the extended school community. In particular,

the improvement of individual skills, the development of community links and the improvement of health services are effective in promoting health for both school-age children and adolescents. St Leger (2005) also pointed out important issues that may inhibit the sustainability and development of health promoting schools. These issues include short periods of support funding, difficulty and complexity in evaluating the HPS, issues based orientation programs, problems with language and concept translation used within the education sector. In addition to these issues, the need to gain understanding from the education sector concerning the benefits of HPS for the educational outcomes is paramount (St Leger, 2005).

As part of the HPS concept and Ottawa Charter for Health Promotion, improving the physical school environment is vital as an effort to provide a healthy school environment that can support the health of the school age children and adolescents. Environment is one of the main determinants of children's health, because they are more fragile to the environmental related illnesses, such as diarrhoea, respiratory infections, and other diseases due to toxic exposure from the environment. There are four components of a healthy school environment, which are provision of basic necessities, protection from biological threats, protection from physical threats, protection from chemical threats (WHO, 2003d). The WHO has used the concept of HPS to manage several health behaviour issues in adolescents. As an example some of the important issues in health risk behaviours include tobacco use, reproductive health, oral health promotion and violence prevention.

The WHO underlines the importance of tobacco use prevention in adolescents as the smoking rate is increasing in most countries. Several key points to apply the HPS concept addressing the health risk behaviour including tobacco use in adolescents are as the following (WHO, 1999c):

a. Make sure that all the related stakeholders from all sectors (government, NGOs, community, school, etc) at the top, middle and bottom level, have a clear understanding about the hazardous impact of tobacco to every human being in many ways.
b. Convincing the school community about the urgent need to prevent tobacco use in school and building their confidence that the program will make a significant positive influence for the health of the school community.

c. Planning the intervention through HPS strategy guidelines provided by the WHO and modify the guidelines if necessary to meet the local need.
d. Integrate the tobacco use prevention program into other related health risk behaviour in adolescents.
e. Regular capacity building programs for all the school communities to keep updating them with the tobacco use issues.
f. Include the evaluation activities in the prevention strategy. The evaluation consists of activities such as needs assessment, baseline data collection, monitoring procedures and periodic and final assessments.

The WHO also highlights that oral health promotion is one of the essential elements of health-promoting school. Oral health is important because deterioration in oral health leads to certain disabilities such as oral function disorders and lower class attendance. Poor oral hygiene cause gum diseases along with high intake of sugar cause dental decay (WHO, 2003e).

Other examples of adolescent health issues addressed by WHO are family life, reproductive health and population education. They each have specific focus and link each other in supporting adolescent health. Family life education refers to education to help youth in preparing for adult life, concerning their physical, emotional and moral development. Reproductive health includes education to enable the students to have sufficient skills and responsibility for their sexual behaviour in the context of biological, psychological, socio-cultural and reproductive dimensions. Population education means to make young people understand the relationship between population process and individuals as well as family community and nations, in macro and micro demographic change (WHO, 2003b).

Partnership, policy support, school engagement, and community involvement are very important in health promoting school concept. Health promoting school concept consists of a strong relationship between education, health promotion and healthy public policy. The relationship between health education, health promotion and 'healthy public policy' can be summarized in a simple formula:

Health promotion = health education x health public policy.

In other words, education operates synergistically with policy development (Denman et al., 2002).

Susan Denman (2002) describes that health promoting school is a new concept in school-based health program that comprise new ideas, practice, and different approach from the previous school health program. The health promoting school concept can be applied using the innovation diffusion model, which consists of four main elements such as the innovation, the communication channel, the rate of adoption, and the individual or social system. The model has four stages, which are:

(1) knowledge

(2) persuasion,

(3) decision, and

(4) adoption or rejection of the model.

This innovation diffusion model is the fundamental for sustainability of the health promoting school strategy. Other aspects that relate to sustainability of the health promoting school are the capacity of individuals, including teachers, students, and other members of school community (Denman et al., 2002).

Looking at the Colorado experience, the key for effective implementation includes health curricula and strong support from leaders such as school headmaster and teachers. Lesson from the Colorado School Health Education Initiative in USA, illustrated that the implementation of the program requires certain strategies that best suit the local potential resources and capacity (Orme et al., 2007). One strategy is a building blocks strategy to improve the comprehensive school health education, which consists of the following:

- Community climate that values health education in schools
- Leadership from within schools and school boards that views health education as an essential part of every students' educational experiences from kindergarten to grade 12 (K-12).
- Teachers who are adequately trained in effective health education programs and practices.
- The coordination of school and community-based programs so that youth are exposed to health education in a variety of settings.
- Effective (i.e. research-based) K-12 health education program.
- The integration of school health education with other subject areas.
- Clear expectations of what and how much K-12 health education should be taught.

(Orme et al., 2007, p. 170)

In order to assess success of the school-based health program it requires an appropriate evaluation strategy. Evaluating the health promotion program in the school based setting as a part of the community setting, requires longer periods of time and different success indicators. Health skills and education in school curricula is aimed to change students' beliefs and behaviour to reduce health risk behaviour during adolescence and adulthood. The effectiveness of the program can be seen after a couple of years after intervention. However, it may requires many more years to detect the health outcomes, because there are many other confounding activities that obscure the impact of school health program for adolescent health (Easterling et al., 2003).

Success indicators for community based health program are hard to determine due to involvement of a complex social system in the community based program. The more practical way is to use the proximal measures of success. As an example, the health education program for children and adolescents in schools was developed assuming that the children with sufficient understanding about health impact of smoking, alcohol and drug abuse, physical inactivity and unhealthy diet, will have more tendency to adopt healthy behaviour. After a longer period of time changes that link more directly with the tangible health outcome can be evaluated (Easterling et al., 2003).

The implementation of health promoting schools needs to be evaluated to reveal more effective strategies and best health outcomes. Experience from Hong Kong shows that the evaluation should consider the following points. To begin the enormous developments concerning the organization of schools is important as it reflects the various structures of management within the school. Also advances in both teaching and learning practices and professional development impact on evaluating the effectiveness of HPS (Lee, St Leger, Moon, 2005). Apart from the health outcomes, the evaluation should also stress the process and output of the health promoting schools' programs and activities which include both health and educational aspects (Lee, St Leger, Moon, 2005).

McQueen (2007), points out that evidence, effectiveness and evaluation can be used to guide the health promotion field despite their different perceptions and understandings. The evidence, effectiveness and evaluation model, shows how the health promotion, with limited resources works by addressing health issues. Because health promotion is a broad concept with very complicated relationships between varieties of domains, measuring its effectiveness is very challenging. However, Campostrini, (2007) offers those methods such as randomized controlled trial (RCT), systematic review and surveillance method

can be considered in measuring the effectiveness health promotion. An example of measuring the effectiveness of health promotion using surveillance method is demonstrated in the Behaviour Risk Factor Surveillance (BRFS) which had been conducted in a number of countries (Campostrini, 2007). Surveillance is achieved by measuring the health outcomes from the changing or improving of behaviour both before and after the intervention. However, it is also important to measure and monitor the process of intervention to assess the sustainability of the intervention. In this case, both quantitative and qualitative measurement will be more beneficial in evaluating the effectiveness or providing the evidence of the health promotion programs.

3.4. School-based Health Program for Adolescent in Indonesia

The Indonesian Government has developed a School Health program in the national education curriculum since the 1960s. During two decades, the program stressed that health services and relevant activities were under the responsibility of the Ministry of Health. It was strengthened by releasing a letter of decree signed by four Ministries in 1984, which involves Ministry of Education, Ministry of Religion, Ministry of Health and Ministry of Interior. The decree was updated in 2003 (MOH, 2007).

However, the program has not run satisfactorily in most schools due to some reasons. A large number of schools and a wide variety of school resources, lead to difficulties in coordinating the national programmes. The decision makers and policy makers in the education sector most likely made healthy life skills development in schools less important than other intellectual development programs. Also, most of the education staff had limited capacity of health skills, and school environments were not conducive to the healthy learning and working process (WHO, 1999a).

The World Health Organisation introduced the concept of healthy life skill education in 1993 in Indonesia. It is a skill-based health education which emphasizes on skills improvement to adapt positive behaviours, so as to enable individuals to face challenges in daily life effectively (MOH, 2007). This concept is applicable for adolescents in Indonesia and it has been implemented as part of the school health program in collaboration with the local Public Health Centre.

The Ministry of Health of Republic Indonesia has developed a health service for adolescents to increase their health status, particularly for female adolescents who are both

students and non students. The health service provides services that are more accessible, open, convenient for youth, confidential, and without any stigma of particular health conditions. The activities in the services including health education, medical services, counselling, skill-based health education, training for peer groups, social and medical referral services (MOH, 2007).

The WHO introduced Health-Promoting School (HPS) in Indonesia in 2000. The Ministry of Health Indonesia defines HPS as a school where the community and school work together to give experience and provide integrated and positive learning structure which promotes and protects students' health. The programs in HPS include intra and extra health curricula, creating a healthy and safe environment, providing health services and actively involving family and community to promote health (MOH, 2007).

The Indonesia Ministry of Health has recently introduced a concept in the school health program, called Trias UKS for the national strategy. The program consists of three main aspects; health education; health services; school environment. The main goal of the program is to increase healthy life skills and health status of the students and to create a healthy school environment, in order to achieve optimum growth and development for better human resource quality (MOH, 2007).

The health-promoting school can be defined as the school that implements the Trias UKS in addition to some focused activities such as collaboration between schools, community and parents, involve students as active participants in the school health program, as well as activities that relate to recent adolescent health issues including drug abuse, gender equity and healthy life skill education. These activities give a positive impact for the surrounding community (MOH, 2007). When first implemented, the activities in the school health program were mostly focused on health education which aimed to increase knowledge and paid less attention to practice or behaviour aspects. The healthy life skill education is more suitable in the school health program as it brings the students to actively participate in health related activities and make them eventually implement healthy behaviour in their daily activities.

3.5. Conclusions

This chapter consists of three sections which aimed to review the evidence that show how the school-based health promotion can be the best solution to improve adolescents health. The first section was comparing conventional and integrated public health approach. The second section described the school-based health promotion as the setting-based approach for adolescents health. The third section was explaining the school-based health program in Indonesia.

The first section of this chapter compared the traditional approach such as behaviour change theory of HBM and SCT and health promotion approach. This section concluded three main points which are: (1) the concept of a new perspective for public health is moving toward a more integrative, multidiscipline, multi approaches and is concerned more with sustainability and equality, which consists of more political load as well as international health; (2) the traditional public health approach includes behaviour change using SCT and HBM concepts, which are theoretically important but needs to be combined with other approaches that are not only focused on the individual level, to develop the health-risk prevention for adolescents; (3) the health promotion concept is an integrated approach focusing not only on the individual level, but also involves other dimensions such as policy, community and environment.

The second section of this chapter described that the school-based health promotion has been applied in many countries under a variety of program names and strategies. Global evidence shows that the school-based health promotion should be able to address the needs of all stakeholders. The comprehensive school health program in the USA health system is more a knowledge and skill based approach, while the Australian model is more an integrated using an environmental and community based approach. The biggest Asian country, China, has implemented the health promoting school approach in some of the provinces recently, and have positive experiences on the implementation (Aldinger et al., 2008). Partnership is the most crucial aspect for adolescents health intervention and refers to the contribution of health and education sectors, which are the two main actors that strongly influence the success of the school-based health promotion.

The last section overviews the school-based health program in Indonesia. The activities in the school health program are mostly focusing on health education which aims to increase knowledge with less attention to practice or behaviour aspects particularly in addressing

the health-risk issues. This section concludes that although the policy of the school-based health program in Indonesia has been developed since the 1960s, little is known about what the government sectors and schools understand about the school-based health program and why the many schools still cannot implement the program effectively.

Chapter 4. Conceptual Framework and Research Methodology

4.1. Introduction

This chapter describes the conceptual framework and method of this research. The conceptual framework explains the relationship between factors underpinning adolescents health as well as the link with the methodology to address the research question and focus questions in this study. The research methodology consists of information of research questions aims and objectives, study design, method of data collection, data analysis and ethical issues.

4.2. Conceptual framework of the study

The conceptual framework (see figure 4.1) shows that there are three dimensions of determinant factors which are environment, personal, and social pressure ((Henderson et al, 1998). Those three main factors are the determinants of health-risk behaviour such as tobacco use, injury and violence, alcohol and substance use, dietary and hygienic practice, sedentary lifestyle and unsafe sexual behaviour. Without any prevention and treatment these health-risk behaviour may cause chronic diseases which lead to disability and premature death.

The three dimensions of environment, personal and social pressure are important in forming strategies to prevent health-risk issues. There are three settings to address the health-risk among adolescents, which are health services, household and school setting. The school setting is more suitable for adolescents health compared to health service and household setting, because the school is the place where most adolescents spend time for learning, communicating with peers, teachers and other school staff. Other settings, such as community, workplace, household and hospital, are less appropriate settings for adolescent diseases prevention activities because they do not specifically relate to adolescent life. School-based health promotion is an alternative strategy to prevent health-risk issues in adolescents through school activities and setting.

In order to assess how the school-based health promotion has been implemented in Indonesia, an evidence based using qualitative and quantitative study is necessary. A study that includes document review, survey based data analysis of global strategies as well as national or district strategy and need assessment to implement HPS in Indonesia will be significant to provide feedback or future direction for a more comprehensive and sustainable school based health promotion in Indonesia.

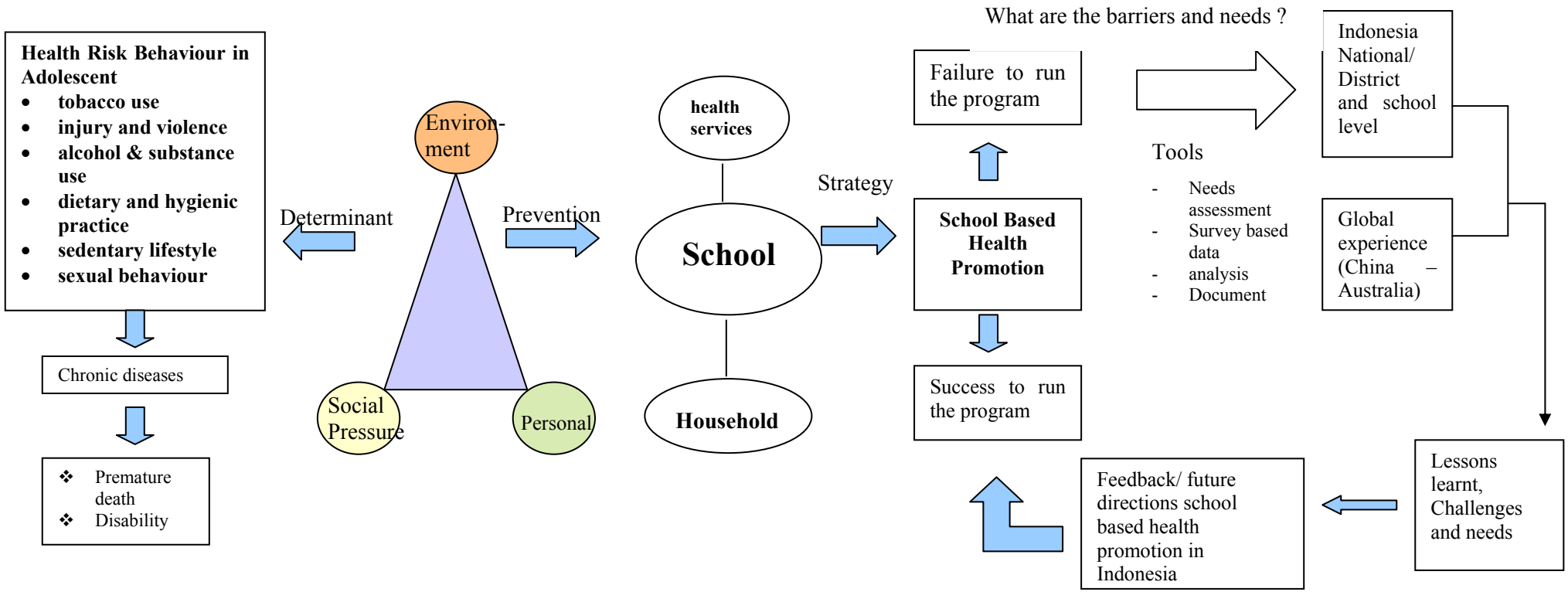

Figure 4.1. Conceptual Framework of a Study on School Based Health Promotion for Adolescent in Indonesia

4.3. Research Methodology

4.3.1. Research aim:

To investigate the challenges and future direction of school based health promotion for adolescents in Indonesia.

4.3.2. Research Question

"What are the challenges, needs and future direction in implementing school-based health promotion in Indonesia?"

4.3.3. Research Objectives

A number of objectives have been developed to address the research question outlined above. These include:

1. To review the national and district strategy of school based health promotion for adolescents in Indonesia, includes strategy evolution, challenges and needs.
2. To assess challenges and needs toward school-based health promotion program from the perspective of the school community (students, teachers, parents).
3. To learn experiences from other countries (Australia and China) in school-based health promotion practice.
4. To provide recommendations and future direction of comprehensive and sustainable school based health promotion in Indonesia.

Summary of research question, objectives, and method can be seen on table 4.1.

Table 4.1. Summary of research aim, questions, design, data collection technique and analyses.

Aim	Research Question	Focus Questions	Research design	Data collection techniques	Data analysis
To investigate the challenges, needs and future direction of school-based health promotion in Indonesia	What are the challenges, needs and future direction of school based health promotion in Indonesia ?	What are the national and district strategy of school-based health promotion in Indonesia, including strategy evolution, challenges, and needs?	Qualitative study	- Document review - In depth interview - Group discussion	Content analysis
		What are the challenges and needs toward school-based health promotion program from the perspective of the school community (students, teachers, parents)?	- Qualitative - Quantitative survey (for expressed needs of health-risk issues among the students)	- In depth interview - Secondary data from school health survey	- Qualitative study : Content analysis - Quantitative study: Log linear and General Linear Model to see the relationship between variables
		What can be learnt from Australia and China experience in school-based health promotion practice?	Qualitative study	- In depth interview - Group discussion	Content analysis
		What are recommendation and future direction of comprehensive and sustainable school based health promotion that are appropriate for Indonesia?	Qualitative study	- Document review - In depth interview - Review - Round table discussion	Content analysis

4.3.4. Research method

This study uses need assessment analysis and case study as tools to address the research objectives. The need assessment used four types of need classified by Bradshaw in 1972 (cited from Ewles & Simnet, 2003; Kilduff et all, 1998), which are Normative needs, Felt needs, Comparative needs and Expressed needs. The detail of need assessment can be seen in Table 4.2.

Normative need is the needs that are defined by the experts, such as top level management, professionals and international organisations. This study will gain information to identify the needs defined by the policy makers and decision makers in both the health and the education sectors in order to improve the school based health program.

Felt need is the needs that are described by the community regarding the health issues. This study explored what the school community needs to implement the school-based health promotion, specifically health-promoting school and existing school health programs. The information raised from the school community includes their expectations, challenges or barriers in the implementation, available resources, factors that relate to success in particular schools, factors related to unsuccessful school-based health programs, what has been done and plans for the future. The school community includes students, teachers and other school personnel, health workers and parents in Depok.

Expressed need is the needs expressed by the community members. This study will look at the needs expressed by the school community (students, teachers, parents) and decision makers in the health and education sectors to support the school-based health program in particular district, Depok city. The information will be gathered by interview, observation, and survey data analysis for expressed needs by students. The different between the expressed need and felt need is on the type of information. Information in the expressed need can be presented by quantitative figures or numbers of particular issues, such as statistic of health risk issues among adolescents (i.e. smoking prevalence).

Comparative need is the needs that are explained by comparison of a school that runs the school health program and a school that still has problems in running the school health

program. This was focusing on the school level situation. The data was gathered by interviews and observation.

In addition to the need assessment, two case studies were conducted in two selected junior high schools. The two schools were selected purposely to represent a well known public school with good resources and a small private school with limited resources and more isolated. Looking at the two schools with opposite characteristics exposes the different barriers and needs toward the school-based health promotion.

Table 4.2. Detail of need assessment of school-based health program among decision makers and school community.

Type of needs	Method	Informants	Information
Normative needs	- In depth interview - Reports documents	- Decision makers in health and education sectors at central and district level - Government reports	- Strengths and weakness of the school-based health program - Guideline of school-based health program
Felt needs	- In depth interview - Group discussion	- Decision makers in health and education sectors at central and district level - School head masters - Teachers - Students - Parents - Food providers	- Challenges - Strengths - Weakness - Value and perspectives - Best hope - Future plans
Expressed needs	- Interview - Observation - Survey data analysis	- Decision makers in health and education sectors at central and district level - School head masters - Teachers - Students - Parents - Food providers	- activities at central and district level - activities at school level - health-risk issues among adolescents
Comparative needs	Case study - Interview - Observation	- School head masters - Teachers - Students	activities at school level

		- Parents - Food providers	

In understanding the qualitative research, it is important for the researcher to have qualitative sense of thinking which also means understanding the individual peronality that includes motives, interests, values and goals. The researcher usually put the personal agenda as part of the research agenda. The researchers need to be deep into the research and understand the main purpose and target of the qualitative research (Minichiello and Kottler, 2009). The crucial points in qualitative research are the relationship between the respondents and the researcher or interviewer, which need to consider respect, reciprocity and mutual affection. The deep involvement of the researcher should not bring reseacher bias that may shape the respondents answers or views.

A qualitative research uses words, language and images in the analysis and interprete while a quantitative research uses numbers and statistical method. The people who are studied in the qualitative research are treated as participants or informants instead of as a subject. Minichiello and Kotter describe five character of qualitative research, which include: inductive thinking; flexibility; inquisitive nature; reflective listening; and insightful analysis. The main purpose in the qualitative research is to explore as deep as possible as from the informants by observing and listening and take a broader principle to explain the phenomenon. Qualitative research is rich of improvisation and keeps growing follow the informant's responses. The process is flexible and open depending on the real situation and responses in the field which may possible to modify the research questions during the data gathering. Inquisitive nature is the key concept of qualitative research to enable the researcher explores the deeper explanantion of what being studied, in respectful and sensitive maner. Human to human communication is another crucial dimension of obtaining trust and willingness to share from the informant side. This requires very good skill in listening without judgemental expression, which need talent and frequent practices (Minichiello and Kottler, 2009). The deeper the data that gathered from the field leads to less complicated or problematic data analysis process.

Analysing the qualitative data is one of the most challanging steps in qualitative research. In contrast with the quantitative data analysis which is clearly determined by certain formula using statistical tests, the qualitative data anlaysis is unique and does not need single formula to obtain good interpretation or explanations. The analysis method is depending on the purpose of the research which reflected by different type of research

such as basic research, applied research, summative evaluation research, formative evaluation and action research. In qualitative research the data analysis may begin in the conceptual development phase prior to the data collection, during the data collection and after the data collection is formally ended. Although the research is in the process of data interpretation and report writing, the field work may still happening to complete the analysis until it is really answer the research question (Patton, 2002). During the data analysis proccess, the researcher need to have strong analytically thinking to identify themes, subthemes, to study relationship between themes, to understand how it links with the previous study and theory and to identify what are the main messages expressed in the data (Minichiello and Kottler, 2009).

Many researchers use a case study in the qualitative research. A case study is an approach to focusing the investigation of a particular case. The case can be a group of people, individual, social group, organization, institution, geographical area or even a country. Learning particular unit analysis will provide deeper information comparing with wide example of cases (Gering, 2007). A case study can be qualitative or quantitative depending on the question of the research the investigator addressed, but most of the qualitative researches inquire demonstration based on in-depth detailed information about cases (Neuman, 2000).

The different between case study and longitudinal study or cross sectional study lays on the number of cases and analysis technique. The case study analyse key issues in certain cases using more logical analytic way while the cross sectional and longitudinal studies collects many cases to analyse the pattern or averages across cases (Neuman, 2000). A case study has typical characteristics that need to be considered by the reseacher in planning the qualitative study.

Simon (2009) has pointed out that a researcher who is planning to conduct a qualitative case study needs to think about several key points as the following: understand different types and purpose of a case study to help the reseacher in selecting the best method of case study; decide the key issues that need to be addressed in the case study; recognize a certain tradition in the case study; make justification of choosing the case study method to address the research questions ; being responsive to the problems or limitations that may occur during the process; aware with the time limitation for the research prior to selectinng the type of case study (i.e: ethnographic, evaluative, theory-based or intrinsic, instrumental, collective); consider the political impact of the case study; think the method

of reporting the findings in the case study (i.e: descriptive, interperative, evaluative or explanatory) (Simon, 2009). Beside of those specific points, a case study also has variety of data gathering methods.

There are three data gathering methods that commonly used in case study, which are interview, observation and document. The interview in case study that most researchers used is the in depth interview using unstructured questions or open ended questions. The indepth interview has four main objectives: to explore what is in and on individual's mind; to help in identifying and analysing issues by active engagement between the the interviewer and interviewee; to gain information in fexible way directing to the key issues raised by the interviewee; to obtain potential findings that cannot be reflected by the observation (Simon, 2009)

The in-depth interview can be done in a form of conversation. In-depth interview can be as a conversation that naturally flow as the connection between the interviewer and interviewee is growing. The conversation can be as interactive responsive approach or an encouraging debate conversation. In the interactive interview a different role, 'no intimmacy without reciprocity' (p.45), is important especially in the longitudinal in-depth interview. An effective in-depth interview can be achieved when the interviewer has non-hierarchical relationship with the interviewee and has prepared and decided his position in the relationship. In the evaluation research, the conversation may be driven by the interviewee and the interviewer is actively listening rather than asking or answering questions (Simon, 2009).

A quote from Terry Deny in his preface of his case study, River Acres, cited from Simon (2009) p. 46

" I began my study by looking at instruction and then interviewing teachers and students about what they did, why they did it. Hour after hour I saw teachers working, doing what teachers always have done. Students fell into their rightful places, too. Frequently after an observation and interview, a teacher would say something in a few sentences that summed up several hours of observing for me".

Basically, in general 'there is no single best approach of interviewing'. It is very flexible depending on the purpose of the interview and what kind of information the researcher targetted as well as the characteristic of the interviewee.

In conducting the interview the researcher need to consider the time of the interview. The effective time for the interview is between one to two hours to gain interpersonal trust and obtain in-depth understanding. The interviewer need to ensure that the interviewee agree with the time allocation to avoid insufficient responses due to the time concern. The open ended questions tend to requre more time and it can be less or more longer than the expected (Simon, 2009).

In term of number of interviewee, the researcher may have individual interview or group interview. The individual interview is most common in qualitative research. The group interview may work well to explore information among the school students. The finding in the group interview should be mentioned as group perspective. The researcher needs to consider the limitation of the group interview because of dominant individuals and diversity of the responses (Simon, 2009).

In-depth interview can also be done in non face-to-face communication, as the extention of the proactive interview. The communication can be in the form of report or telephone interview. The interviewer can ask the interview to keep documented the opinions or experiences and write up as a report, as additional information of the face to face interview. The telephone interview is more economical in cost and time (Simon, 2009).

Reporting and recording the conversation during interview is crucial in qualitative case study. The most effective method of recording the interview is using voice recording and note-taking. Simply voice recording causes false sense of security and ignore the issues appear at that time. The interviewer may feels that they can always go back to the recording and have missed point that need to be explored further that may be important for the interview. The note-taking is useful to point out the expression and gestur of the interviewee that may explain the conversation or opinion of the respondents. It is also important to consider that the ratio of time in transcibing the voice recording is 1:5. One hour interview requires at least 5 hour in transcribing the interview (Simon, 2009).

Another method of data gathering in qualitative research is Observation. Observation is crucial to provide a complete picture of the story in case study. The observation can be done to support the interview or vis versa, the interview is needed to explain the observation findings (Simon, 2009, Lincoln and Guba, 1985). Some important points in conducting an observation in a case study include determine the purpose of the observation and who is the audience; the observation can be structured or unstructured; decide what to observe; keep the observation open for expect the unexpected; seeing

differently to make the audience engage with what the observer experience during the observation; and observe in appropriate over time to have better understanding the real story behind what the observation. An example of a short vignette wrote by Bob Stake about the rural school to Helen, cited from Simon (2009) p.57, is the following:

Example: A vignette : A Postcard from Brazil

Dear Helen – Have enjoyed the resort, 'radioactive' sand at this place, and just now have returned from a week visiting rural schools down the coast and into the mountains. Saw 211 room schools, Gr 1 – 4. Many pretty sad. Barren rooms, the dust and trash ever present. Teachers have workbooks for kids but no books, little paper. They carry water for the toilets, have no electricity, sometimes not even a woodstove to cook the pasta and beans govt. sends. County coordinator makes up final exam, sells it (15c) to kids to cover office expenses, teachers buy when kids can't afford it. Kids have to get 80% right to pass the next grade, so some kids get more than 4 years of education. Yet spirits are high. Bob.

4.3.5. Study location

This study carried out a need assessment analysis, which used both quantitative and qualitative data. The locations of this study were:

- Depok, West Java and Jakarta, Indonesia

  Jakarta was selected to gather information from the decision makers in national or central office of Ministry of Health and Ministry of Education. Depok city has been selected due to high accessibility in obtaining information; and it represents both urban and rural settings.
- Queensland, Australia

  Australia is one of the developed countries that have implemented health-promoting school successfully. As one of the neighbouring countries both Australia and Indonesia are able to learn, share, and support each other, specifically to implement the health-promoting school and develop active networking between the two countries.
- Hong Kong, Macao, Guangzhou, in China

China had been selected because it is an Asian country with a huge population, China can provide a case example of health-promoting school, which can be adapted for Indonesia. This study is only focusing on three regions in China, which are Hong Kong, Macao and Guangzhou. Those three regions in China have been selected due to different government characteristics within those three regions and accessibility in obtaining the information in a more efficient way as they are located close to each other.

4.3.6. Data collection techniques

This processes included qualitative study, document review and quantitative data analysis. The details of the review, qualitative study and secondary survey based data analysis are presented in the following.

a. Qualitative data gathering techniques in Indonesia:
   - In depth interview.

In depth interview data collection method was used to explore the *normative needs*, *felt needs, and express needs* of health sectors, education sectors, and communities concerning the school based health promotion program, particularly in implementing the Health-Promoting School (HPS). In depth interview technique was also used to evaluate the process of school based health promotion activities, which also includes information on needs, challenges and expectations. The interviews were documented using notes and electronic recording. The detail of the interview technique is as following:

- The interviewer used semi structured questions to guide the interviewee in attaining the purpose of the interview. The questions may grow depending on the respondent's answers, understanding and perspectives.
- This interview technique was used addressing all the research objectives
- Participants were:
  - Coordinator and staff of adolescent health programs for national and district level in the

Ministry of Health (two people) and in the Ministry of Education (two people)

- Coordinator and staff of School Health Program for national and district level in Ministry of Health, District Government Office (two people) and in Ministry of Education (two people) in Depok
- Parents from six schools (twelve people)
- Students from six schools (twelve people)
- Teachers from six schools (twelve people)
- School head masters (six people)

- Seminar
  - The seminar was held to assess the needs and build agreement or commitment between related stakeholders in order to improve the school health program and to develop partnership. Participants in the seminar included decision makers from the Education office, Health office, schools, parents association, Public Health Centre (PHC), health NGO and local government offices. The number of participants was fifteen participants. All the invited institutions and stakeholders presented their expectations, plans and barriers for the school health program implementation.

- Observation
  - To provide description of the school environment and facilities, such as food hygiene, sport facilities, quality of basic amenities, etc.
  - To observe the process of school based health promotion activities in selected schools (two schools in Depok, West Java Indonesia, three schools in Hong Kong, two schools in Macao, two schools in Guangzhou, and ove school in Queensland)

- Documents or report review

In addition to the qualitative data gathering mentioned above, documents or report review was used to address the objective number one and three. This is to review the national and district strategy of school based health promotion for adolescents in Indonesia, particularly the strategy evolution. The documents were from the health and education offices at national and district level that are responsible for the school-based health program.

The documents review in this study is focusing on several aspects, such as:

- National strategy and current situation of school health programs in Indonesia
    - Policy support and strategy evolution in the Health and Education sectors
    - Partnership between Health and Education sectors
    - Community participation
    - Strategy evolution
- District strategy in school-based health promotion
- Experiences from other countries on implementing Health-Promoting School.
    - Health-promoting school implementation in Australia
    - Health-promoting school implementation in China (Hong Kong, Macao, Guangzhou)

b. Qualitative data gathering techniques in Queensland, Australia:

- In-depth interview

Two interviews had been done to gain information on the health promoting school concept implementation in Queensland from the health officers perspective. The informants were one person from the Queensland Health office who was responsible for the school health program, and a health expert from the Queensland University of

Technology who conducted an evaluation study on the health promoting school program in Queensland.

- Observation

  Observation was performed by visiting one state school that has implemented health promoting school concept to learn the success and barriers from the school perspective.

c. Qualitative data gathering techniques in Hong Kong, Guangzhou and Macao, China:

- In-depth interview

  The interview had been done to gather information on the health promoting school practice in the three regions in China, particularly information on barriers, enablers and future plans. Participants in the interviews were the school head masters, teachers and health and education officers.

- Observation

  Observation had been done by visiting seven junior high schools (grade seven to nine) that have been implemented health promoting school concept, looking at the physical environment of the schools. The number of schools that have been observed:

  - Hong Kong : three schools
  - Guangzhou : two schools
  - Macao : two schools

d. Quantitative data collection

The quantitative study in this thesis is to address objective number two, specifically to identify expressed needs by the students in prioritizing the health-risk issues among the students. This study analysed data from the 2006 school based health survey in one municipality, Depok, West Java Indonesia. The sample size of the survey was 1650 students from 29 public junior high schools. The population of the survey was

approximately 41,000 students from 131 public junior high schools. Results from this survey represent students from all 131 existing public junior high schools in Depok city.

The survey provides information on health risk behaviour in adolescent, such as:

- Smoking
- Eating habit
- Self Hygiene
- Physical activity
- Injury
- Bullying
- Average academic mark in school

Quantitative data from the recording and reporting system in health institutions and education institutions will be used as part of the need assessment analysis. The data will be used to assess the comparative needs and express need in the health sectors, education sectors and community concerning the school based health promotion program, particularly in implementing the Health-Promoting School (HPS).

4.3.7. Data Analysis Techniques

a. Qualitative Data

The data was analysed by content analysis method. The qualitative data was analysed through the following steps:

- Dividing the information according to the objectives
- Categorising the information
- Develop matrix and flow chart to sum up the information
- Identify the variables and relationship between variables
- Determine the confounding variables or intervening variables
- Finding the link, chain and facts logically.

b. Quantitative Data

The quantitative data was analysed using statistic software of SPSS. Descriptive analysis was undertaken to calculate the frequency distribution of variables. The statistical test is required to summarise or analyse the data. Two statistical tests that were applied to assess the relationship between variables as required to answer the research focus question and address research objectives. A chi Square test was used to compare frequency or proportion in two or more groups of data. The data was analysed using General Linear Model (GLM) to assess the relationship between continuous data and categorical data and Log linear analysis to assess the relationship between categorical variables. The software used for statistical analysis was SPSS 16.

Data management and data cleaning was done prior to the data analysis process. The data was analysed to describe the distribution frequency of health risk behaviour in adolescents and examine the relationship between variables.

4.3.8. Validity and Reliability

Particularly for quantitative data, validity and reliability is necessary to assess how appropriate the measurement or instrument measures what it intend to measure (Dawson and Trapp, 2001). Dawson and Trapp (2001) described three kinds of validities that are generally used for a quantitative data test as follows:

- Content validity, which designate the level of which the substances on the test are representative of the information being tested.
- Criterion validity, describes the measurement's capacity to estimate another characteristic related with the measure.
- Construct validity, which relates to condition that the measurement is associated to other similar measurements with the same particular characteristic of the research object.

Reliability for research purposes is commonly measured by replicating the measurement and evaluating the degree of agreement (Dawson & Trapp, 2001). Two types of reliability measurements are intrarater reliability and interrater reliability. Intrarater reliability describes the comparison when one person measures the same item several times, while interrater reliability is obtained when comparing measurements of the same item that are done by different person (Dawson & Trapp, 2001).

As already mentioned earlier, this study analysed the secondary data from the survey. The surveys had already tested the validity of the data, as the questionnaires used in the survey were adapted from the WHO instruments and other international standard instruments which had been modified according to the local needs. The validity and reliability of the instrument had been tested by conducting a pilot study prior to the survey implementation.

A method that can be used to establish the validity of qualitative data is Triangulation (Golafshani, 2003). Denzin typology described six types of triangulation used in research, which are time triangulation (1), space triangulation (2), combined levels of triangulation (3), theoretical triangulation (4), investigator triangulation (5), and methodological triangulation (6). Meanwhile Guion (2002) quite differently defined five types of triangulation, which include data triangulation (1), investigator triangulation (2), theory triangulation (3), methodological triangulation, and environmental triangulation (5). The most frequently used and most simple to implement is the data triangulation (L. Cohen et al., 2000). A methodological triangulation also can be used to assess the reliability (Silverman, 2005).

This study used data triangulation to address the validity and reliability of the qualitative data. Several different data gathering techniques, such as in depth interview, group discussion and observation were used as the triangulation approach.

4.3.8. Ethical Issues

Ethical issues are important aspects that contribute to the quality of the research including the research publication funding. Findings will be questionable when the research does not concern about the ethical aspect. Ethical issues and politics are part of the evaluative rigour (Liamputtong & Ezzy, 2005).

This study involved aspects of confidentiality and anonymity to address the ethical issues. Written informed consent forms signed by each participant was required during data gathering process. It is necessary to get ethical clearance for each data collection technique from the national ethical committee. As the data collection will be conducted in Indonesia, the ethics clearance was obtained from the Ethic Committee, National Institute of Health Research and Development, Ministry of Health Republic Indonesia.

The informed consent form was attached with a brief explanation using understandable language on:

- Purpose of the data collection
- Benefits to the community
- Contribution to the scientific publication
- The right to have feed back and particular follow up procedure
- Voluntarily aspect
- Confidentiality aspect

All the information gathered from the participants remains confidential and data collection used anonymous form. In the results publication, the information will hide the identity and location of participants.

4.3.9. Significants of the research

This research is beneficial as in the following:

- The school-based health program which has been initiated by the Ministry of Health Indonesia since 1960s. However, most schools, particularly in Depok municipality, West Java Indonesia, showed some barriers in implementing the school health program activities. Review is beneficial to identify the barriers, the needs, and achievement factors, in order to ensure that the school based health promotion program becomes more applicable, feasible, and integrated.
- This study provides substantial evidence-based information for decision makers in the Ministry of Health Indonesia, such as Directorate of Medical Service, Directorate of Public Health, Centre of Health Promotion, local Health Office as well as in the Ministry of Education and schools, in addition to literature evidence particularly on technology and science of health promotion and behaviour for adolescent health.

- Specifically for the relationship between health and education, this research provide information on the intensity of the relationship and expectation from both sides.
- This research provides alternative scenarios to solve problems or barriers identified in the research and in line with the needs from different perspectives of related players in school-based health program.

For the research development, this research is beneficial in learning the process of turning theory into practice. It also identifies issues for further research.

4.3.10. Limitations of Methodology

1. This research has limitations as follows:

   a. This study uses survey based data from a global school based health survey that was conducted during 2006 that represents figures of health-risk issues among Junior High School students (grade 7 to 9) in Depok city, West Java, Indonesia. Findings of this survey can not be used to represent the national situation, but it represents Depok city. This survey was the current available data that can be used to identify the health-risk issues among adolescents age 13 to 15. There is no similar survey has been done up to 2009. Although the data was three years old, the information from the survey still useful to describe the health-risk issues among adolescents in Depok and it can be considered that there is no significant change within the last three years, because no intervention has been applied in the school setting to address the adolescents health-risk yet in Depok.

   b. The qualitative data was not specifically designed to explain further about the findings in the quantitative data. The qualitative data was developed to provide information on challenges and needs from the government sectors (health and education) and school community perspective toward the school-based health promotion for adolescents. Links between quantitative and qualitative data is mainly a mutualism or supplement, in which the quantitative data identifying health-risk issues among adolescents and explaining how big the health-risk issues are in order to identify the need of health health-risk prevention from the students point of view.

   c. As the quantitative study used secondary data analysis, the information was restricted to existing data from the survey. The survey can not provide information on the effect of economic status to the health-risk issues among the adolescents. To address this limitation, the data was categorized into students from different school resources (good, moderate, and limited). Students from the school with good resource were usually from the better economy status compare to school with moderate and limited resource. The three categories of school resource

was determined according to physical or infrastructure capacity, number of enrolled students, and number of full time teacher.

d. Although this study also produces lessons learnt from Australia and China in health promoting school practice from the decision makers perspective, it did not cover information of health-risk issues as well as challenges and needs from the students perspective in Queensland and China. This is because of limited budget and time to complete this study. To address this limitation, this study is focusing mainly on the program development, activities, and strategies, that described the strengths and weaknesses.

2. Strength of this research

Aspects that are considered as the strength of this research are in the following:

a. Use of a mix method of qualitative and quantitative methods. This study uses both quantitative and qualitative methods in term of data collection and analysis. This combined method will be more useful to address multi determinant health issues and it can add meaning to numbers or figures as well as provide a stronger evidence base (Johnson & Onwuegbuzie, 2004).

b. Multi countries evidence-based

This study involves evidence from other countries' experiences, which is very meaningful for Indonesia. It provides information on how other countries are addressing the issues in health promoting school practice.

c. Problem solving research

Besides identifying barriers and issues, this research come up with a potential solution model to improve the school-based health program at all government levels in line with the needs, as well as providing scenarios to overcome the barriers in implementing the program.

4.4. Conclusion

This chapter explained the conceptual framework illustrated the relationship between health-risk issues in adolescents, environment, social and peer pressures, as well as school-based health promotion as the strategy to address the health-risk issues in adolescents to prevent morbidity, disability, and premature death.

The methodology of this study used need assessment analysis and a case study to identify challenges and needs for school-based health promotion from the perspectives of decision makers, teachers, parents, and students. This chapter pointed out the use of both qualitative and quantitative data to address the research questions.

This chapter also described the limitations and strengths of this research from a methodology perspective. The limitations included the year of survey was conducted, limited data from the survey and limitation in data collection in China and Australia. The strengths of this research included the use of both qualitative and quantitative data, multi-countries evidence-base and the provision of alternative solutions or scenarios to address the challenges and needs for school-based health promotion in Indonesia.

Part 2. Findings, Discussion, Recommendation and Conclusion

Chapter 5. National Strategy of School Health Program in Indonesia and Strategy Implementation in District School Health Program in Depok City

5.1. Introduction

The Ministry of Health initiated the national strategy of school health in Indonesia over a decade ago; the government being aware of the significance of the school setting approach to reach school age children. Since 1999 when the government system changed from non-autonomous to autonomous, local authorities were given more power to interpret, modify and apply national policy at regional level. Since this change, local or district strategy has become more crucial for improving the health of the community. Technically, the local/district strategy should be in line with the national strategy, and its implementation is completely dependent on the local authorities. Although all the policies, programs and strategies are now available at a national and local level, the implementation of the School Health Program (SHP) or ***UKS*** at the school level still faces some impediments. The purpose of this chapter is to review how the national and district government have implemented program strategies, in order to find the gap between national, district and school levels in school health program practice.

Information in this chapter was gathered by in depth interviews and discussions. This chapter describes the strategy and policy support that had been developed at national level, as well as identifying the obstacles in implementation at a national and district level. Implementation of the School Health Program in the Depok Municipality, will be described as the case study of district level strategy and implementation of a school health program for adolescents.

5.2. National Strategy and Policy Support for the School Health Program in Indonesia

The Indonesian Government has been developing a School Health Program in the national education curriculum since the 1960s. Over two decades, the programs basically focussed on health services with relevant activities under the responsibility of the Ministry of Health. The program was strengthened in 1984 by the release of a letter of

decree signed by four Ministries: Ministry of Education, Ministry of Religion, Ministry of Health and Ministry of Interior. The decree was updated in 2003. (MOH, 2007).

The World Health Organisation introduced the concept of healthy life skill education in Indonesia in 1993. This is a skill-based health education program which emphasises skills improvement to adopt positive behaviours, thus enabling individuals to face challenges in daily life effectively (MOH, 2007). This concept is applicable for adolescents in Indonesia and has been implemented as part of the School Health Program in collaboration with local Public Health Centres.

The Ministry of Health of the Republic of Indonesia has developed a health service for adolescents, to increase health status particularly for female adolescents who are both students and non-students. The health service provides services that are more accessible, open and convenient for youth, confidential and without any stigma of particular health conditions. The provisions of the services include health education, medical services, counselling, skill-based health education, training for peer groups, social and medical referral services (MOH, 2007).

The World Health Organisation introduced Health-Promoting School (HPS) in Indonesia in 2000. The Ministry of Health Indonesia defines HPS as a school where the community and schools work together in giving experiences and providing integrated and positive learning structures which promote and protect student health. The programs in HPS include intra and extra health curricula, creating healthy and safe environments, providing health services and actively involving families and the community to promote health. (MOH, 2007).

The Indonesian Ministry of Health has recently introduced a concept into the School Health Program, called " TRIAS UKS" as part of the national strategy. The program consists of three main aspects; health education; health services; and school environment. The main goals of the program are to increase healthy life skills, the health status of students and to create healthy school environments, in order to achieve optimum growth and development for better human resource quality. In general the school health program for adolescents (junior high school and senior high school or grade 7 to 12) has four objectives:

1) Increase knowledge, attitude, and practice of healthy lifestyle of students
2) Enable the students to independently practise clean and healthy behaviour such as not smoking, engage in sufficient physical activity and healthy dietary behaviour.

3) Enhance the students' role in improving health in schools, home, and communities.
4) Gain students' healthy life skills to allow the students to protect themselves from drug and substance abuse, adolescent mischievous behaviour, unsafe sex and STIs including HIV/AIDS.

Source MOH (2007) p.4.

Basically, the health-promoting school can be defined as the school that implements the Trias UKS in addition to some focus activities such as collaboration between schools, communities, and parents, involvements of students as active participants in the School Health Program, as well as activities that relate to recent adolescent health issues including drug abuse, gender equity, healthy life skill education, and giving positive impact for the surrounding community (MOH, 2007).

Since its inception, the activities in the School Health Program have mostly focused on health education which aims to increase knowledge. Less attention has been paid to practice or behaviour aspects. Healthy life skill education is more suitable in the School Health Program as it encourages the students to actively participate in health related activities and assists them to implement healthy behaviour in their daily activities.

As it has been mentioned before, two main government sectors that are responsible for the school-based health promotion are the Ministry of Health and Ministry of Education. The other two government sectors that are also involved in school-based health promotion, Ministry of Religion and Ministry of Interior, do not actively engage in the operation of the program. Therefore the next sections focus on the condition in Ministry of Health and Ministry of Education in managing the school-based health promotion.

5.2.1. Key milestones in program development of school-based health promotion

The school health program in MOH was introduced in 1956, with a pilot project in the district of Bekasi, West Java, which is located very close to Jakarta the capital city of Indonesia. Within the Indonesian Ministry of Health (IMOH) the Directorate of Child Health, Directorate General of Community Health is responsible for the school-based health program.

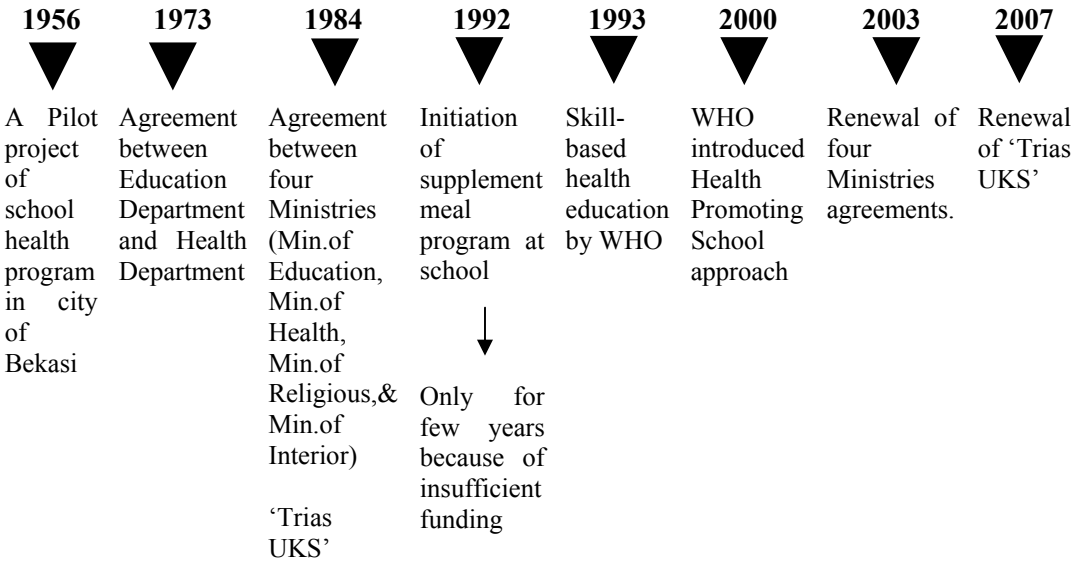

Figure 5.1 Key milestones of the school health program policy development.

As it can be seen from the figure 5.1. the key milestone of the school health program was started in 1956 and the agreement and collaboration between Education and Health Department was established in 1973. A few years afterward, in 1984 the government recognised that the school health program also required active contribution from other departments, and released the *Four Ministries Decree Letter*, which consists of Ministry of Health, Ministry of Education, Ministry of Religion, and Ministry of Interior. The involvement of the Ministry of Religion is important because some schools are funded under the Ministry of Religion instead of under the Ministry of Education. Meanwhile support from the Ministry of Interior is also crucial to obtain funding, to maintain sustainability of the program, and to make the program as one of the priorities of public health programs at the regional level.

Many projects have been developed concerning the school health program in Indonesia. As malnutrition was one of the main health issues among children and adolescents, the government implemented the meal program at school for elementary schools in 1992. However, this program was not continued due to limited budget, and a large number of

schools across Indonesia, numbering approximately 28,167,480 elementary schools (DIKNAS, 2009)

The World Health Organisation (WHO) introduced the concept of healthy life skills education to Indonesia in 1993. This is a skills-based health education program which emphasizes skills improvement to adopt positive behaviours, enabling individuals to face challenges in daily life effectively (MOH, 2007). This concept is applicable for adolescents in Indonesia and it has been implemented as part of the school health program in collaboration with local Public Health Centres.

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Basically, the health-promoting school can be defined as the school that implements the Trias UKS in addition to some focus activities such as collaboration between schools, community, parents and involvement of students as active participants in the school health program. The activities include those that are related to recent adolescent health

issues including drug abuse, gender equity, healthy life skill education and giving a positive impact for the surrounding community.

Since first initiated, the activities in the school health program were mostly focused on health education which aims to increase knowledge with less attention on practice or behaviour aspects. The healthy life skills education is more suitable in the school health program as it encourages the students to actively participate and act in health related activities and make them eventually implement healthy behaviour in their daily activities.

The Directorate of Child Health, Directorate General of Community Health, MOH developed a national operational strategy guideline for the health officers to implement the School-based Health Program in Indonesia (UKS). The details of the guidelines can be seen in Appendix 1. The guidelines generally consist of four main focuses such as health service availability, health service quality, task authorization and level of service for adolescents that can be categorized into four strata or levels.

Since 1999 when the Indonesian governmental system was transformed into the autonomy system, the local authorities, including the District Government, the District Health Office and District Education Office, gained more control over the implementation of school health programs at the District level than the national authorities. Although the national or central government does not provide financial support, the district level can still maintain the implementation of the school health program with the support of the local government. While the central level is responsible for the policy, supervision and technical support, the district level has obligations for the financial support and operational and sustainability of the program according to its needs.

One quotation from a Ministry of Health officer from the central level regarding the school health program in districts level:

HO1: " … but now it depends on the district and municipality. There are several districts and municipalities that still carry out the 'meal for school children' program…for the immunisation and worm tablet program, initiated by the Ministry of Health, implemented by the Primary Health Centre (PHC), although the budget is from District Health Office or Province Health Office or Central Office…"

The Ministry of Health developed the five year planning program for the school age children health program. The programs include the policy development, strategic

planning development, program development and supervision program. The monitoring and evaluation program of school age children health is done at the district level not at the central level. The Ministry of health conducts supervision activities two or three times in a year in each Province. The recent data shows the total number of provinces in Indonesia is 33 provinces. Some activities performed during supervision include collecting data of the school health program, technical assistant, consultation and discussing any necessary topics and issues related to the school health program.

5.2.2. Program strategy of School-based health promotion in the Ministry of Health

This section describes the program strategy of the school-based health promotion in the Ministry of Health as a national policy to improve children and adolescent health. It reports findings from the focus group discussions, in depth interviews and document review from a health sector perspective. The contents of this section concentrate on the existing strategy of the school-based health program including partnerships with other sectors and barriers from a health sector perspective at the national level.

5.2.2.1. Existing national strategy of the school-based health program in the Ministry of Health

In the health sector, the school health program is developed for the three different schooling levels, that is elementary school, junior high school, and high school. The school health program for elementary school has shown more success stories than the program for higher schooling levels. One of the well known programs for elementary school is the 'Little Doctor' program. This program was first initiated in the early 1980s and still exists in some schools until present time. For the high school and junior high school levels, the school health program called 'Adolescents Red Cross' or 'Palang Merah Remaja or PMR', which is developed to enable the students to give first aid if any incidents occur during school time. The students were trained by the Indonesia Red Cross Association, who gave certificates to the students who pass the training course. Other school health programs for adolescents are the life skill health education concept, and health service for adolescents, which are already mentioned above.

The centre of health promotion, Ministry of Health, has a priority program, called 'PHBS' which means healthy and clean behaviour program in five different settings, being workplaces, households, hospitals, schools and public places. The main focus of the program currently is for the household setting, which involves essential collaboration

with ‘PKK’ the women movement. The ‘PKK’ contribution gives positive influence for gaining community participation.

The PHBS program in the school setting has been incorporated in the school health program, which has existed for many years. Although the Centre of Health Promotion gives higher priority to the household setting PHBS program, because it is a new program and is still in the initial stage which requires more time and review prior to application to other setting including the school setting. The Centre of Health Promotion expects the education sector will contribute more to the school ‘PHBS’ implementation in schools, while the health sector will contribute more as facilitators of the health contents or material, and guidelines.

The Centre of Health Promotion and Education office agrees to divide the work load into the physical or infrastructure and behavioural development. The Education office took responsibility for the physical/infrastructure development, while the health office was responsible for the health education and healthy behaviour program.

The partnership between the health and education sectors has relatively improved. The Centre of Health Promotion works closely with the Centre for Physical Health, Ministry of Education, as well as other related directorates in the Ministry of Education, such as Directorate of Elementary School, Directorate of Junior High School, and Directorate of High School. Internally, the Centre of Health Promotion also worked together with the Directorate of Child Health that has incorporated the Sub Directorate of School-age Children Health Program, the National Institute of Health Research and Development, Statistical Bureau and the Centre for Diseases Control. A health promotion officer admitted that the partnership between the health and education sector is good, and also assumed that the education office still has a different understanding of health for school communities.

The health promotion officer (HP1)said:

HP1: “ we are somewhat good, in partnership with education office, every time we had activities they were always coordinated…the education office is more for facilitating of the physical aspect, while the centre of health promotion is more for education and change behaviour..”

HP1: “…if we see it again, the education office has the impression that only if there is a competition they are busy….the competition also had been criticized as being contrived, why we do competition…seems not educating…after the competition..that’s it..”

Private sector involvement in school health program activities is encouraged for certain national or public events, such as national health day, international child day, free-tobacco day or other health related events.

A quotation:

HP1: "collaboration with private sectors…only during the certain days like national health day. In 2003 collaboration with the mosquito repellent company..we have animation film about dengue for school children..they copied the film up to 1000 copies…"

5.2.2.2. Barriers to school-based health promotion from the perspective of health sectors in national level.

Although the national health office has provided sufficient policy, strategies and support for the implementation of the school health program for the local or district level, the implementation quality is a different story. The health officers illustrated the main constraints to a successful school health program in most of the schools, as the following:

- Monetary constraints

  Since the government effected the autonomy system, the budget for the health program is mostly from the local or district level, therefore there is only a limited amount of money available for the implementation at the district level. The funding from the central office goes to the provincial level instead of the district level, meanwhile the school health program is under the district level. As a consequence of the country's monetary crisis, the government budgets were cut up to 74% for 2008, which lead to a huge difference in program activities including for the school health program. Funding support for the school health program from non government or other sources is not available to this point.

  Quotations from health officers (school health division and health promotion division) at national office regarding the monetary constraints:

  HN1"…local budget from the government for the school children health program never goes directly to the PHC, but it is available at the province level…"

  HN1"…one of the reasons for PHC and schools cannot following up the students health screening is limited budget, facilities, and human resources…"

HN1"…the budget alocation from the national office to all provinces level sharply decreased from 30 million in 2007 to 3.2 million in 2008…and there is huge budget cuts about 74% for all government sectors on 2008, which influences the budget portion..."

HP1"…the poster about healthy behaviour for schools cannot reach all schools because of too many schools to cover… usually we produce the posters based on the budget not based on the need…because if we produce the posters to cover all schools it will cost a lot of money..may be around 2 billion rupiah and for such high cost it will need longer time and a more complicated procedure in the government budgeting system…"

- Limited human resources

The human resources quantity and capacity is very limited particularly in the Sub-Directorate of School-age Children Health at the central office. They only have four staff working in the division, while their working area covers the whole 33 provinces in Indonesia. Specifically at the PHC level, human resources to coordinate the school health program is a significant issues in most of the PHC across Indonesia. PHC only has one third of the health officers working hours to manage the school health program. Meanwhile, one PHC should coordinate approximately 25 elementary schools and there are more than 200 schools in each district in Indonesia. Regarding the quality and capacity of the human resources, the health officers at the central level feel that they do not have sufficient knowledge and capability to convince other stakeholders to support the school-based health program. Also, they found it is hard to maintain good communication and relationship with other stakeholders, including within the health sectors to support the program. The health officer at the central level considers that most of the health workers at district level who are dealing with the school health program do not have sufficient capability to utilise the data and information such as the student health assessment activity and often fail to convince the leaders about the need to stimulate the school health program.

Quotations regarding the limited human resources capacity and quantity:

HO1: "…there are no health officers in PHC who work full time for school health activities, may be only one third or one fourth of their working time is for the school health activities. In average, one PHC have to manage 25 schools…so if they have to cover one school in a day it need labour intensive…"

HO1: "…another barrier is lack of training for health workers particularly in following up the data from the students health screening activities…they don't understand how to utilise the data…"

HO1: "…convincing other sectors or partners to support the school health program activities is necessary…but colleagues in the health office have less confidence to convince other partners such as police institution, local government office, and other related sectors to support the program, so sometimes we fail to compete with other programs…"

- Inefficiency of bureaucracy in program delivery

The health officer in central office stated that the formal working system or bureaucracy in running the school health program is inefficient. Since the government applied the autonomy system, the provincial and district level have more power to decide the organisational structure, therefore each province can have a different structure. This leads to a complicated process in delivering the program from the central office to the provincial or district health office. The coordinator of the school health program can be under a different unit or division in different districts.

Quotation from health officers regarding the different structure between national and province government office:

HO1: "…at the national level, the school-based health program is under the Directorate General of Child Health, but it can be under the Health Promotion Centre('PROMKES') or under Maternal and Child Health ('KIA') in the province level. So..sometimes..the relationship between those two divisions (PROMKES and KIA) is less harmonious, meanwhile the budget mostly goes to the KIA because it is related to child health…in some provinces the coordination between those two divisions is lacking due to 'money' issue…but in national level the relationship is very good…"

HO1: "…Ministry of Health should apply the same organisation structure in national, province, and district health offices to avoid miss coordination.. and also it will make it easier for the province level to negotiate with the local or regional parliament members to obtain government budget…at the moment the organisation structure is different in each province…the communication is confusing…the school-based health program can be under the 'KIA', 'PROMKES' or even not available at all…"

- Ineffective management system

The health officer in the central office assumed that the Centre for Physical Health Development (CPHD) in the education sector at central office, does not have authority to provide funding for school health program implementation at the province or district level. The CPHD normally provides policies, guidelines, information and technical assistance for schools. The CPHD relies on the school

health program team coordinator at the district level, which is usually the top manager, such as Head of District Government, Head of District Health Office. The team leader does not have staff dedicated to assist him or her in managing the program. Therefore, the program becomes less effective because there is no obligation and supervision to do the program.

HO1: …another weakness is that the school health program (UKS) will be always put under the CPHD program, in fact the CPHD programs are mainly producing a book or guideline, so the UKS program is not 'down to earth' or applicable program…other weakness is that the CPHD depends on the UKS team leader, which is a coordination forum, we know that the coordination forum normally depends on the district, the person, and if they have funding they will organize meetings, no funding no meeting…But if the UKS team leader has staff, at least there will be punishment if the program doesn't run well, but if it is only coordination forum no body supervise or give warning, the institution doesn't have any authority to warn the coordination forum…except the District Interior Office.."

5.2.3. Program strategy of School-based health promotion in the Ministry of Education

This section reviews the general role of the education sector at a national or central office in the school-based health program. The review focuses on the existing program in the education office and barriers in implementing the school-based health program from an education perspective at the national level.

5.2.3.1. Existing national strategy of the school-based health program in the Ministry of Education

The school health program in the education sector is the responsibility of the Centre for Physical Health Development in the Ministry of Education. Since the commitment and agreement between four Ministries for the school health program implementation in 1984, the education office was committed to apply the 'Trias UKS' or school health program with concern for three main aspects being health education, health services, and school environment. Other activities included regular school surveys such as behaviour survey (only once), substance abuse survey, and anemia survey. Those school surveys have not been published yet due to policy and ethical issue in the education office.

The education officer said:

ED1:"…however..the results of the survey have not been published because it will make negative impression for the department…"

The Centre has one gate policy for any programs or projects in the schools. Any activities or projects for school health programs have to be under this Centre. As it can be seen on figure 5.3 the school health program is under the division of Life Skill Education and Health. Other divisions in the Centre are physical fitness education, and functional jobs such as researchers, physicians, and nurses.

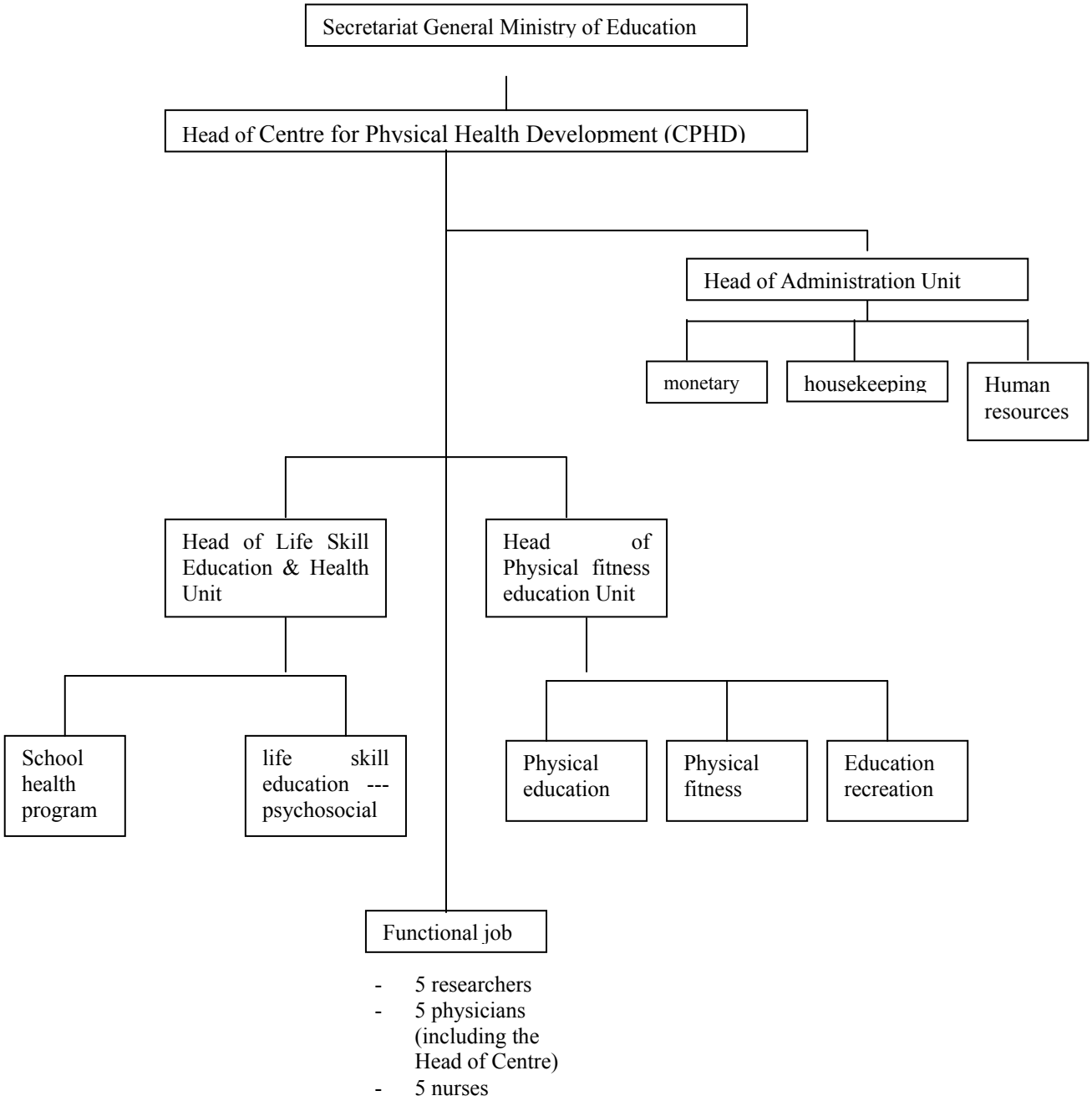


Figure 5.3. Organizational Structure of the Centre of Physical Health Development, Ministry of Education

The Centre of Physical Health Development (CPHD or *'Penjas'*) works closely with other related Departments, such as the Ministry of Health, the Family Planning Department, some international agencies such as UNICEF and WHO, and other private sectors. The Centre acknowledges that the Ministry of Health has contributed significantly to the school health program implementation by providing health services for students in the Primary Health Centre (PHC), by conducting the health screening for new students, health counselling and education, and by developing the health card for the students.

The Centre also produces guidelines for the school teachers to implement the school health program. The guidelines are developed for particular health issues, and the recent guideline launched in 2007 addressed HIV/AIDS prevention for high school students.

The evaluation and monitoring activities for the school health program has been done annually by award competition for all schools at national, province and district level. The assessment criteria for school health program award includes school cleanliness, availability of school health room in school, toilet sanitation, safe water availability, proper rubbish bins and healthy canteen at the school. The healthy school award program has been happening since 1991. This appears to be one of the most influential programs for the education sector, because it gains school credibility or popularity that lead to higher student's enrollment rate.

5.2.3.2. Barriers to school-based health promotion from the perspective of education sectors in national level.

Some barriers in implementing the school-based health program that have been pointed out by the education officers at the national level include the communication between national and district office, limited human resources and inadequate support from the health sectors.

The CPHD doesn't have authority and a branch office or a coordinator in the lower government levels as at the provincial and district levels. Meanwhile the school operational system is under the local Provincial and District Education Offices. Therefore, sometimes there is a gap between the central and local authority in terms of school policy, strategic management, and program implementation. The school health program implementation mainly relies on the support from the local (provincial or district) authority and education office, in terms of funding and resources. The provincial

and district offices have their own authority and decide how they are going to implement the school health program. In most cases, the province and district education officers and school staff do not have sufficient understanding about the school health program and lack coordination between the health and education sectors.

The education officers at central level said:

ED1 :"…district people mostly do not understand…no good coordination between health and education sectors in district level…"

The education officers stated that limited human resources capacity at the district level is one of the main barriers of school-based health program implementation. Readiness to implement the program was different in each district or province, depending on the capacity of the education officer to put health as part of the learning process. They also commented that commitment from local government or the district office is very important.

A quotation:

ED1: " if the local government commit…I am sure the school-based health program will run well…"

Another important barrier indicated by the education officers was lack of commitment and contribution from other sectors. The school-based health program implementation required active involvement from four Government Departments, including Education, Health, Religion, and Interior Department. However, in fact only the Education and Health Departments work actively for the school-based health program. The other two Departments did not actively participate in the program implementation. Although the Health sector had already put very significant contribution into the school-based health program, the education sector still assumed that the health sector did not completely or optimally support the program. They felt that the education and health sector seem to develop the program in separate ways and they were not really going in the same direction. The education officers criticised the health sector in some ways such as:

- Unequal task or responsibility distribution between health and education sector. for example, to provide the guideline book, the health sector required the education office to make copies to be distributed to schools and education offices. In this case, the education office expected that the health sector was also responsible to make copies of the book as well.

- Unfamiliar terminology used in school-based health projects. For example, the health sector used 'peer counsellor' while the education office has used the term 'peer educator' for many years.

  ED2: "…the term 'peer counsellor' is kind of new term for us…in fact we already have terminology of 'peer educator'…why they don't want to use terminology that is already familiar for us in the in education office…why the health sector insists we use the term 'peer counsellor'?...it is not familiar and harder for us…".

- The Health office at the central level did not have a sufficient number of personnel to support the program. Consequently, the education officers had difficulties in communicating with the health officers due to miss-matching time availability between the top managers from both side.

- The health sector was approaching different divisions when initiating activities related to school-based health program. The education officers pointed out that any program including school-based health surveys, that related to health for students should go to the CPHD or "*Pusat Penjas*".

- Insufficient contribution from the local PHC. The education officers felt that local PHC did not give sufficient attention to the school and rarely visited the schools for any health-related activities.

Overall, both the Health and Education Office at the central level have a very complete and integrated strategic plan and policy support for the school health program implementation in Indonesia. The strategic plan includes the guidelines that were renewed regularly and involved four Ministries in government cabinet. The implementation of the program fully depends on the local or district government. To relate the real experience at the district level, the next section will describe the implementation of the school health program in Depok city, which is one of the districts located in West Java.

5.3. The Implementation of The School Health Program at District Level in Depok City

The main reasons for selecting Depok as a case study of reviewing the school-based health program in district level are high accessibility, it represents both urban and rural condition and it has a variety of population ethnicity. Depok is one of 433 districts in Indonesia and one of the fastest growing cities located in West Java Indonesia. Depok is 30 km from Jakarta. The population size is about 1.3 million and has high community mobilization. Depok is a heterogeneous district and includes urban areas, residential areas, educational areas (location of the biggest university in Indonesia), industrial, trading and rural areas. Most of the Depok citizens work as government employees. Depok has a heterogeneous community with a variety of ethnic and cultural groups accross Indonesia, such as javanesse, sundanesse, sumatranesse, balinesse and others, in which each has specific lifestyle in term of diet and communication.

This section explores information about the existing school-based health program at district level including the strategy, expectations and barriers in the implementation. The information was gathered from a seminar that involved participants from different sectors, such as education and health officers from district offices, teachers, local NGOs and health officers from the central office.

The Education Office has a particular vision and mission in the education system. The vision is to be an effective facilitator in creating a high quality of education. The mission is to improve the quality and quantity of education. The education quality includes the health aspect for the students during the learning process at school.

The education officers who participated in the interview agreed that health is a crucial part of the education system and support the school health program which aims to enable the education officers, including teachers to provide health skills for the students.

A quote from an education officer in the Depok Education Office regarding the importance of health skill in the education system:

ED2:" Mission of Education office is to increase education quality and quantity..including the health quality of the students during their attendance at school…several activities in school health program are aimed to make us able to teach health science to the students..and if we can make it as part of the school health program, our nation can compete better with developed nations…"

The education officers also agrees that health promotion in the school-based setting was facing several issues such as large numbers of schools exist in this city, and the fact that

education and health are two programs that cannot be separated from national development. Besides, they also believe it is very important to integrate health issues with related subjects in the school curriculum for the future.

Health related activities that have been carried out in the schools include the school health program (UKS) The education officer stressed that the UKS is a very important activity and makes a vital contribution to enhancing student's health. The education office is also committed to applying the school health program, called Trias UKS although its implementation faced many hurdles in schools. As previously mentioned, the Trias UKS is the school health program that has three key focus areas: health education, health service and school environment.

Depok municipality has 13 private hospitals and one new public hospital that started operating in February 2009. It has 27 Public Health Centers (PHC), which are located in each village. Of the 27 PHC, 23 have trained health officers for the health peer counsellor program.

Funding for the school health program in the district health office is mainly from the national budget. The funding for 2007 was lower than for 2006 because they received additional funding from another health project in 2006 but no additional funding available for 2007. The 2007 fund allocation for the school health project in the health sector was only 15 million rupiah (equal to AU$2000) for one year.

Funding sources (Figure 5.2) for the school health program is allocated in layers. Budgeting for the child health division is mostly from the government and only a very small amount is from the international agencies or other non government sources. At the provincial and district levels, the budget is mainly from the local government or district income and very little from the central government (Ministry of Health), which usually goes to the provincial level, not directly to the district level. In the health sector the school health program at school level is coordinated by the local Primary Health Centre (PHC) which obtains the funding from the district level. In the education sector, the district level education office allocated some funding for the implementation of school health program at school level.

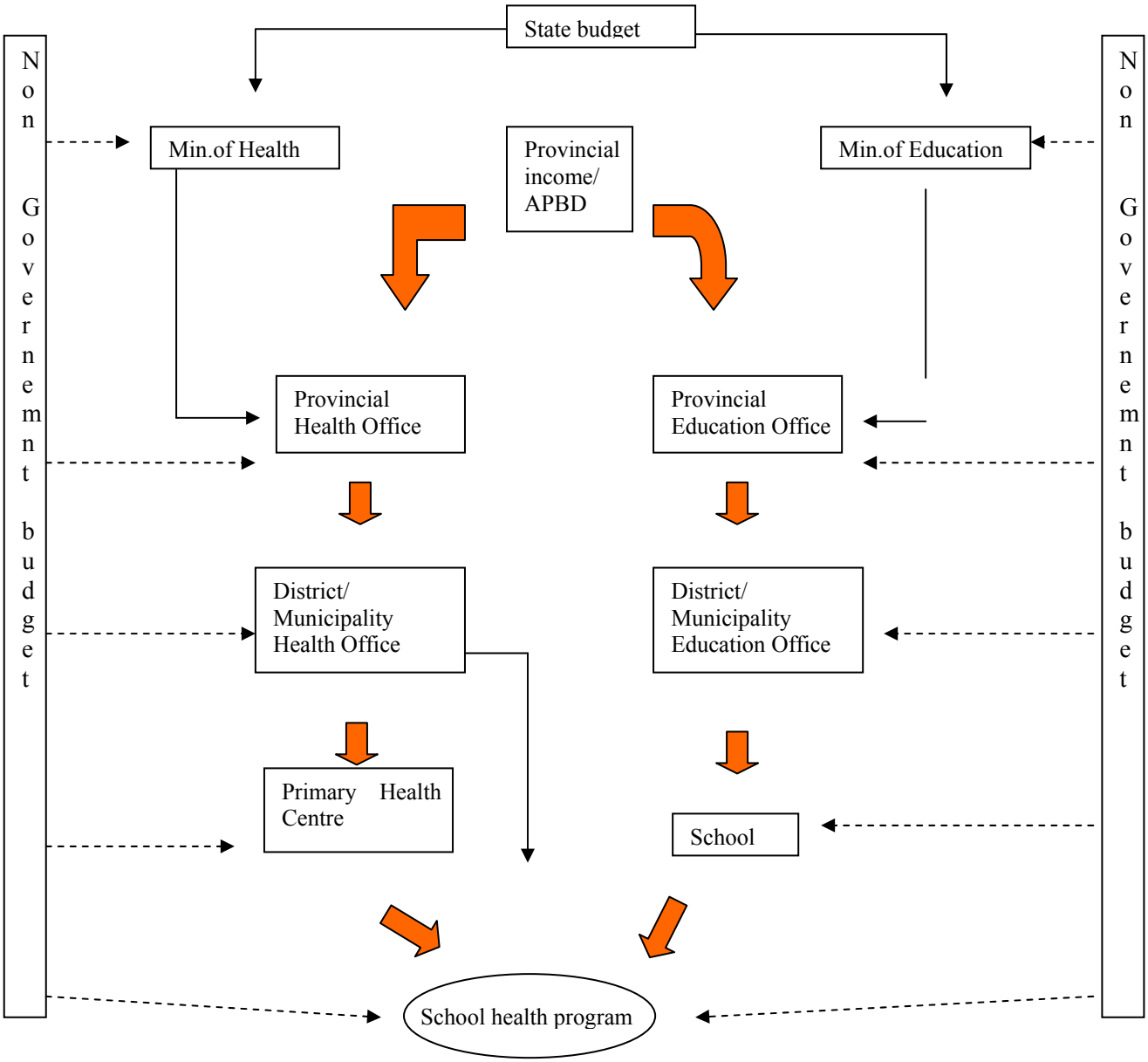


Figure 5.2. Budget alocation for the school health program

Source: Ministry of Health and Ministry of Education

There are several key health programs within the school-based health program in Depok, including the school health program or UKS, health screening for new students, healthy school award, adolescents health care or PKPR, and the peer counsellor program. The student health screening and adolescent health care programs were started in 2005 to 2006. The following is the details of the school-based health program in Depok.

5.3.1. The school health program or UKS

The UKS program has been one of the mandatory programs in school since the establishment of Depok City, in 1999. The health officers provided different perspectives and assumptions regarding the school health program implementation in Depok.

The national policy regulates that all schools at elementary and junior high level have to implement the UKS program. However, not all schools have implemented the program effectively. Particularly in Depok city, the health sector was aware that the support for UKS implementation is not at an optimum due to reasons, such as:

- The Government provides very limited budget both from the central and district budget alocation. This leads to difficulties in conducting capacity building that covers all of the PHCs within the district.
- Lack of coordination between health and education sectors. The health sector considers that the leading sector for the school health program is the education office.
- The working team of the school health does not have sufficient encouragement and creativity to maintain effective UKS program implementation.
- Limited number of UKS coordinators in PHCs.

5.3.2. The adolescent health care program or PKPR

The adolescent health care program or PKPR ("PKPR : *Pelayanan Kesehatan Peduli Remaja*") is a priority school based health program for students in grade seven to twelve or age between 12 to 17 years. The total number of junior high schools (grade seven to nine) in Depok is 132, and only nine out of 132 schools and eight out of 87 senior high schools (grade 10 to 12) have had PKPR training. The total number of students in 2007 was 68,514 elementary school students and 35,491 junior high school students.

The number and type of government officers within the health and education sectors who have been trained for the adolescent health care program are shown in Figure 5.1.

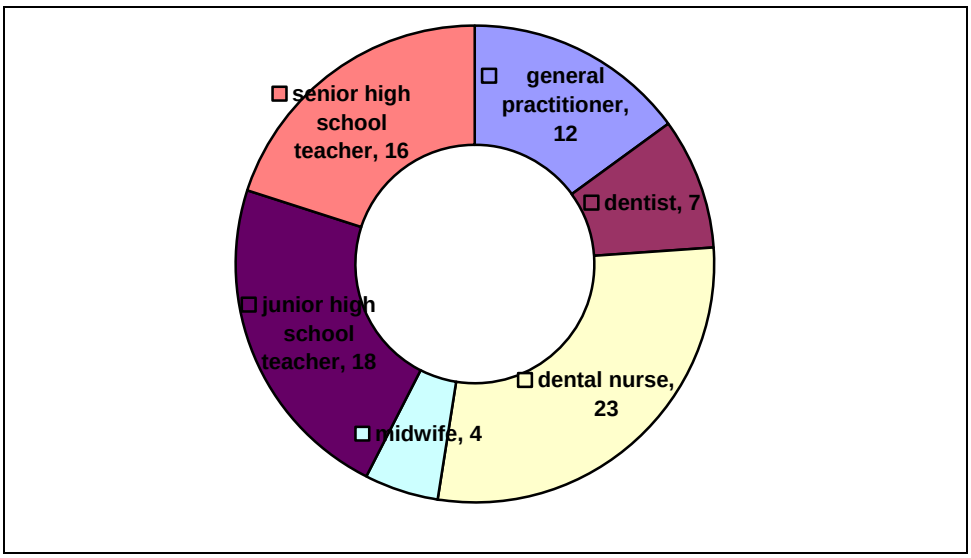


Figure 5.3. Number and type of health officer and education officer that have been trained for adolescent health care program in Depok.

5.3.3. Student health screening program

Student health screening is one of the more recent priority programs for school aged children. The health office assesses the general health status of the new students at the beginning of school enrolment. Results from the health screening provide information of their nutrition status, anaemia status and physical fitness are summarised in Table 5.2. It shows in Table 5.2 that the proportion of students who have very good physical fitness is much lower among senior high school students (39%) compared to junior high school students (71%). It is assumed that the senior high school students (age 15 to 17) and are most likely have less time to do exercise or have a more sedentary life style compared to the junior high school students (age 12 to 15).

Table 5.1. Health Assessment Results in Males and Females in Depok in 2007

	Kindergarten		Elementary school		Junior High School		Senior High School	
	Males	Females	Males	Females	Males	Females	Males	Females
Nutrition status								
Well nourished	83%	85%	94%	90%	93%	92%	93%	95%
Overweight	12%	11%	3%	6%	5%	4%	5%	
Underweight	5%	4%	3%	5%	2%	4%	2%	5%
Haemoglobin								
>12 gr%	85%	88%	92%	88%				
<12 gr%	14%	12%	8%	12%				
Very good physical fitness	59%- 60%		81% - 82%		71%		39%	

The health officers indicated that the health screening program for the new students is very useful to monitor student health. It is one of the national strategies for school aged children and adolescents health. The Depok Health Office estimates the school coverage for elementary schools was at least 85% for 2008. They also plan to carry out similar activities for the year 2009.

The health officers from the national or central level stated that the school health program (UKS) coordinator team was not actively working for the program, because they do not have the 'motor' to maintain and grow the program. The coordinator team leader is normally the top level manager, such as head of district, called 'Bupati', head of District Health Office, or District Education Office, which does not have staff who specially work for the school health program.

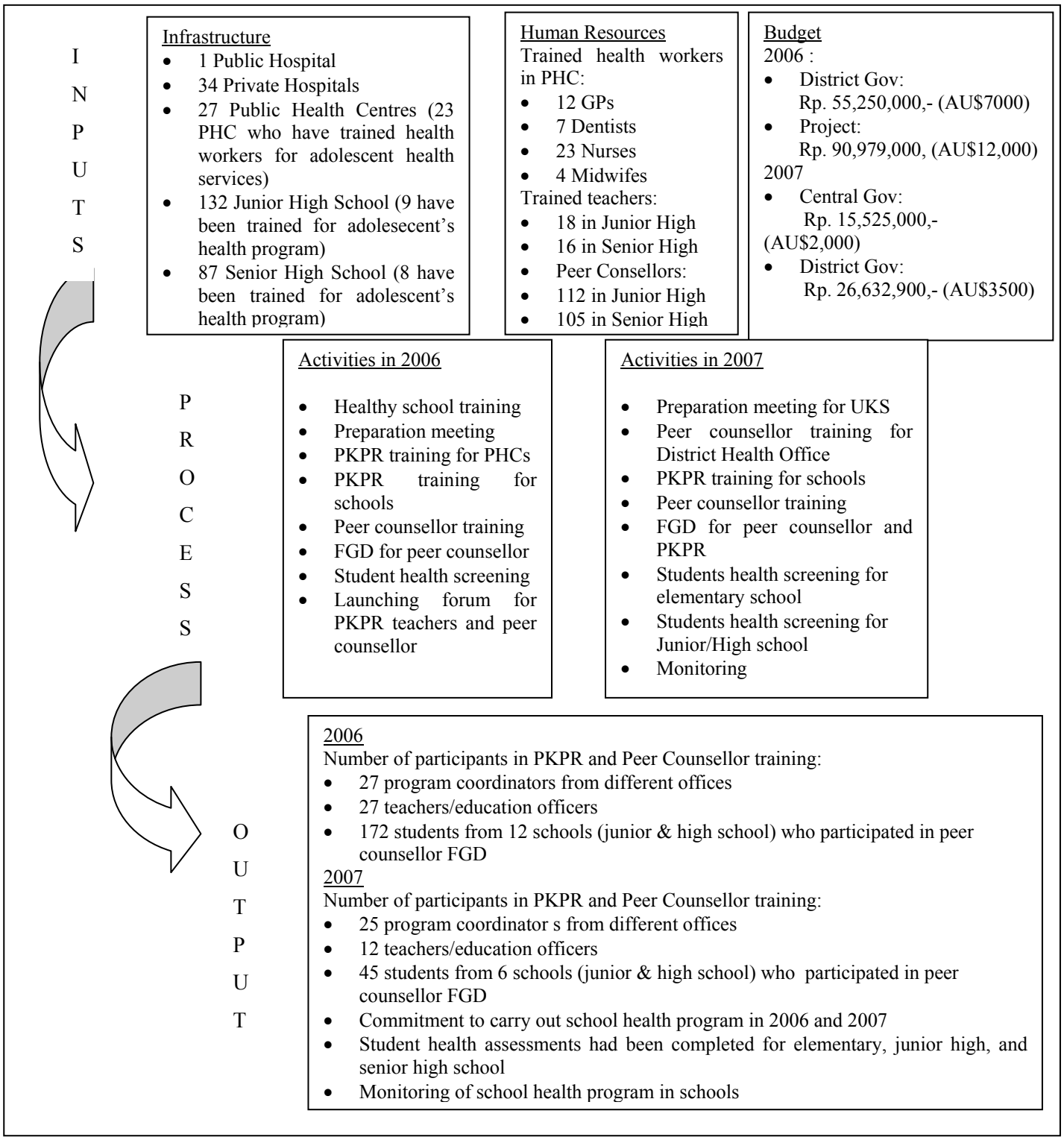


Figure. 5.4 Summary of inputs, process and outputs of school-based health program implementation in Depok, 2006 – 2007

Source: Depok Health Office, 2008.

The summary of inputs, process and output of the school-based health program are shown in Figure 5.2. The figure shows that the health office conducted a school health program in 2007 that was similar to the 2006 activities. The activities during 2007 were not as progressive as during 2006 due to a smaller budget. The number of participants for the 'adolescents health care' training program dramatically decreased from 24 teachers in 2006 to 12 teachers in 2007, while the number of participants for the 'peer counsellor' training decreased from 127 students in 2006 to 45 students in 2007. The sharp decrease in the number of participants in the training was related to a decrease in funding allocation for the activities compared to the 2006 budget.

5.3.4. Barriers from an education sector perspective at district level in Depok

The Depok District Education Office has developed a school health program policy for all schools in Depok since the city was first established in 1999. The Education office has supported the school health program activities and recognises the great benefits of the program and understands that it is a strategic approach to improve school-age children and adolescent health. However, only a few schools within Depok have implemented the school health program efficiently. The barriers to school health program implementation vary within each school. Despite these numerous challenges, the education office is committed to maintaining and improving the program, because it will bring a positive impact on student's academic performance as well as student's health.

A summary of the barriers of the school health program implementation at the district level in Depok municipality are in the following section:

a. Monetary barrier

Schools and the Education Office have a limited budget to run the school health program. The head of school and the education office think that the school health program should get more funding support from the health sector or the local government instead of from the education sector, because the focus is about health. Also, learnt from other schools in other districts is that one of the success factors to achieving a health award at the national level, is significant support from the district and provincial government. Meanwhile in the Depok municipality the local government only provided fifteen million rupiah or about AU$ 2000 for each school, which is only sufficient for preparing for the health award competition. There is no budget available for capacity building and facilities development or other activities for the school health program in the school.

Quotations from the education officers in the Depok district education office regarding the budget for the school health program are as follow:

ED2: "last year in 2007, we tried to visit a school in Sukabumi. The school got significant support from the local government, including for building/physic…here in Depok the budget is normally only for UKS award competition, fifteen million rupiah, there is no certain budget for capacity building. It is very difficult to get the funding to provide room for UKS

ED3: "…we expect there is budget from health office to conduct health seminar for the school teachers and headmaster for all elementary, junior high, and senior high schools in Depok…I feel pessimistic that UKS can be done without funding"

b. Health capacity barriers

Education officers in both schools and education offices are aware that health is an important part of education. However, they admit that they do not have sufficient capacity to transfer health knowledge to students and to develop an effective UKS program. They rely on the local PHC (Public Health Centre) to conduct activities as part of the UKS program. Even for simple issues such as school cleanliness, most schools are not fully aware how to create a clean environment for the school. They also have very limited capacity for advocacy to the District Parliament members to obtain financial support for the school health program.

ED5: " issues of awareness toward the school cleanliness is still very poor..only few schools have high motivation to create conducive and clean school environment…and this needs to be supported in the future…non government organisation can help us for advocacy to the local parliament member"

c. Collaboration and technical barriers

Although the school health program is supported by four Ministries (Education, Health, Religion and Interior Ministry), activities were mainly only supported by the Ministry of Education and the Ministry of Health. The collaboration with the Ministry of Religion and the Ministry of Interior was very limited in the UKS activities. The community, under 'PKK' (family welfare organisation), contributes more to the UKS activities.

A quotation from the education officers at district level:

"…in reality, Department of Religious and Department of Interior have not actively involved yet…PKK is always helping…"

5.3.5. Barriers from an health sector perspective at district level in Depok

Barriers from the health sector perspective at district level in Depok are basically slightly different from the barriers pointed out by the education sector. Similarly, both sectors expressed that funding is one of the barriers. The detail of barriers in implementing school-based health program in Depok are as follow:

a. Monetary barrier

Similar to the education sector, limited funding support is the main issue that was expressed by the health sector. The budget allocation for the school aged children health program for 2007 was lower than 2006. This leads to less investment in the capacity building program, lower coverage (less than 10%) of training for adolescent health care program (PKPR), a less effective screening program, limited operational support for isolated areas, and limited facilities (no separate space or room for the school health program).

Quotations from health officers in the Depok district health office and PHC regarding the monetary barriers in school health program implementation at district level:

HO1 "...the barrier we have is limited budget, it is only from the national and local budget, so it only covers 6.8% of junior high school out of total school that already have been trained for adolescent health care program, and 9.2% of senior high school."

HO2: "…limited in facility supply…insufficient facilities for school health program actvities..we don't have separate space or room for the adolescent health service in PHC"

HO3: "…there are still Public Health Centres that have not been trained to conduct adolescent health care…because of not enough money"

HO3: "..the screening program is not optimal…because of limited budget…budget alocation for operational is limited..especially for the isolated area.."

b. Human resources barrier

Several barriers related to human resources are limited quantity, insufficient skill, and staff movement. Health officers who coordinate the school-based health program in Public Health Centres (PHC) are normally responsible for more than one health program. The health officers have difficulty in managing their time to organize activities for all the schools.

Quotations from health officers in Depok district health office and PHC concerning the limited human resources in the school health program implementation:

HO1: "..number of health officers in district health office and PHC is limited…one health officer handle more than one program..the coordinatior of school health program commonly has double or triple jobs"

HO2: "…staff shifting…especially if the staff is trained staff…so we need to train the new staff"

HO1: " the PHC that has been trained for adolescent health care program, they still don't have sufficient capacity to develop the program."

c. Coordination barriers

The coordination at the district level between the education and health sector is not effective. The health sector assumes that the leading sector of the school health program is the education office. However, since the program is a health related program, the education sector relies on the health sector in planning the program. The health sector also understand that the education office does not have sufficient budget alocation for the school health program. The education office commonly provides budget for the school health award program.

HO1: " About the coordination…at the district level, we just like throw the ball to each other..for the duty and responsibility to conduct the school health program…as we the health office, think that the leading sector is the education office…but because it is about health issues..they put it on us…please inform us what is actually our responsibility for that…"

HO1: "…if there is a school competition everyone starts getting busy…we already train the school health team at municipality and sub district level…but still no activities…the coordination in the school health team is lacking…so they only do something when there is a school award or competition.."

The barriers mentioned above by the education and health sectors may explain the ineffective school-based health program in Depok. In order to explore further the aspects that relate to the failings in the implementing of the school-based health program in Depok, it is crucial to understand the condition in the schools itself, particularly on awareness and understanding of adolescent health among the school community by teachers, students and parents. The gap of understanding of the importance of adolescent health within the school community reflects different levels and types of needs that required to be addressed in developing the school-based health program. The next section

explores in more detail the understanding and awareness of adolescents health from the perspective of teachers, students and parents.

5.3.6. Understanding and awareness of adolescent health from different perspectives of related school community in Depok.

School community participants such as teacher, students, and parents have a different understanding and awareness towards adolescents health. This difference may explain the varying degree of progress of school-based health program implementation within different schools. The understanding of adolescent health in this study includes perceptions toward health, health issues among adolescents, food related health-risk, smoking issues, school-based health activities, needs for a healthy school and healthy behaviours.

Students, teachers, and parents in school communities in the selected junior high schools in Depok all agree that health is very important and in general they have sufficient understanding about health. Their perception about health is basically similar. Table 5.3 describes the perceptions of health among students, teachers and parents. The table shows the differences and similarities of their perceptions. Students believe that health is strongly related to the food and environment, involves both mental and physical aspects and being free of disease. For students, health is important to avoid disease. The teachers believe that health is very important for better quality of future leaders and to maintain health in older years. Meanwhile, the parents stressed that good health means being free from disease and being able to carry out daily activities. It is also related to physical, spiritual and social concerns. Parents also mentioned that nutrition and dental health were the most important issues for adolescents.

Table 5.2. Perception of health among students, teachers, and parents

students	teachers	parents
• Health is related to food and environment • Physically and mentally healthy • Free of diseases • Healthy inside and outside • Avoid diseases, maintain food, healthy life style, exercise, awareness of the environment	• It is very important, for better quality of future leaders • It is very important because maintaining health for old age has to be started as early as during adolescence. • It is related to food, because the daily food consumption is not adequately healthy for most of the adolescents. • It should be prioritised in the school setting because parents are busy working. • It is related to nutrition, because some students never have breakfast before going to school and faint during the routine morning ceremony at school. • Health is very important, the main aspect in life, and for better learning activities for adolescents/students. • It needs to be prioritized, especially self hygiene.	• Health is balance between physical and spiritual, strong, do exercise, and eating healthy food. • Nutrition and growth are very important in adolescent health. • Health means free from diseases • Health is healthy in physical, spiritual, social and religion. • Healthy in mental (from religion) and physical (from healthy food) • Dental health and nutrition are very important for adolescent health. • Health means being able to do daily activities, and can move a lot. • Healthy adolescent means adolescents who actively doing daily activities.

The perception of health-risk among adolescents can be seen in table 5.4. Students, teachers and parents had similar perceptions towards health-risk behaviour for adolescents. They all mentioned that smoking, drugs, alcohol and unhealthy food were the main health-risk behaviours among adolescents. Students also mentioned unhygienic behaviour, fighting and pre marital sex, as unhealthy behaviour among adolescents. Both students and parents stated that pre marital sex and unsafe sex as health-risk behaviours, but teachers did not include these. Other health-risk behaviours that were only indicated by parents were physical inactivity, lack of discipline and depression.

Table 5.3. Perception of health-risk among students, teachers, and parents

Students	Teachers	Parents
• Drug use • Smoking • Not washing hands before eating • Consume unhealthy /non-nutritious food (food with artificial colouring and preservative) • Fighting • Western life style (fast food, electronic game, hair colour, dressing) • Pre marital sex • Alcohol drink • Disposing the garbage not in to garbage bin • Using unclean/unboiled water for drinking and cooking	• Smoking • Cheap food but big portion and use of artificial colouring • Eating fast food, tomato/chilli sauce that use artificial colouring, flavouring, and preservative, which can cause diseases. • Health problem during adolescent is from the food (tend to eat instant food) • Lack of nutrition (not having breakfast before going to school), sometimes it is because low socio economic condition. • Getting drunk • Adolescent tend to ignore or pay less attention to health/	• Drug use • Smoking • Unsafe sex • Do not like to do exercise • Eating unhealthy food • 'nongkrong' or hang out on the street • Dating • Like to day dream, too violent, too silent and depressed. • Playing Play Station game • Lack of discipline in study • Lazy to go to school • Throw out the garbage anywhere not in garbage bin • Unclean • Eat too much, too cold, and too hot foods. • Try to do something different • Eat unhygienic foods • Buying food from the street vendors

Students, teachers and parents have similar perception of smoking in relation to health. They believed that smoking has damaging effect on health. However, this perception was mainly from those who were not smoking at the time during the interview. This information can simply explore the negative perception of smoking among non-smokers. Table 5.5 shows that students, teachers and parents mainly pointed out that peer pressure was the most common reason for adolescents to try smoking and become a smoker. A

view from smoking teachers indicated that smoking had a positive effect on them such as feeling calmer, though it made them have difficulty in focusing and they get hungry more often.

Table 5.4. Perception and reasons for smoking among adolescents

Students	Teachers	Parents
• It is not good for health, because it damages the brain and body. It is bad for other people as well (passive smoker) • Adolescent can be influenced easily by friends, or peer pressure and too many people smoking • Smoking can damage the lungs	• For males, not smoking means homosexual. • High accessibility of cigarette, including in school. "Because government only advising or recommend to decrease cigarette selling but not ban cigarette, and if it is banned, thousands of people will loose job"	• Smoking because of the environment and peer pressure • Smoking is bad for health • Smoking can damage the lungs • Smoking may lead to drug use • Smoking is bad for heart and contains nicotine • Smoking can cause coughing, and it should not be done in the presence of other people because it is not polite • Smoking can make myself feel more calm, cannot concentrate and easily get hungry when not smoking

Students, teachers and parents had slightly different views of food related issues among adolescents. Overall, they referred to unhealthy food, to its contents and method of cooking and preparation. From a students perspective, unhealthy food included food from street vendors, expired food, unhygienic food, deep fried food using the same oil for several times and soft drink. Meanwhile, teachers considered certain food related issues among adolescents such as not eating breakfast, consuming instant noodles, consuming food containing artificial colouring and fast food. Parents believed that unhealthy food also includes food that contained unhealthy substances or artificial ingredients. Details of food related issues among students, teachers and parents can be seen in table 5.6.

Information from the students pointed out that food that they like to buy at school were instant noodles, fish cakes, rice porridge, chips, soft drinks, tea drink, *'batagor'*[1)], *'somay'*[2)]. Reasons for food preferences were mainly, accessibility (available and affordable), tasty and filling.

Table 5.5. Perception towards food related health-risk

students	teachers	parents
Unhealthy foods include • expired food, • food vendor, • unhygienic food. • Soft drink • Deep fried food (using used oil) • Chilli sauce • Uncovered food (contaminated by flies)	• Students mostly never have breakfast before they go to school. • Students like to eat instant noodles for breakfast instead of rice, because it is easy to prepare and they like the taste. • Adolescents also like to consume fast food because it is part of the urban life style, it is available in all the shopping malls, where the adolescents spend their weekend mostly. • Unhealthy food includes: food that contains artificial colouring, and food that is forbidden to eat because of religions rules. • Food taste is the main reason for food selection among the adolescent	Unhealthy food includes • fast food (deep fried chicken), • lack of vegetables, • food with colouring, and preservative. • Unbalance nutrition (carbohydrate and protein. • Contain Monosodium Glutamat (MSG) • Drink with sweetener (not sugar) • Deep fried food (using used oil) • Unwrapped food and not clean • Fast food /ready to eat (it use preservative) • Synthetic sweetener • Expired food • Food that contains formalin

Note:
1)Deep fried food contains flour and flavouring, salt and paper.
2)Steamed food contains flour and fish flavouring, salt and paper, peanut souce, chili.

chers, and parents was somewhat similar (see table 5.7). Overall, they considered the school-based

health program was aimed to help or give first aid to students who were sick during school hours. The teachers in school, which have not run the program yet, pointed out that it was not a school program priority yet and the school had no sufficient resources to run the program.

Table 5.6. Perception towards school-based health activities

Students	Teachers	Parents
• It is useful to take care of sick students, especially during the routine morning ceremony or '*upacara*' • It is for the first aid or sick students	• It is useful to handle the sick students, especially during morning ceremony in the school. • The program is not running anymore for the last two year, because of no trained teacher. • Its target is that no students will faint during the morning ceremony in the school. • It is one of the extra curriculum activities. • It is not yet available in the school because of the room is still under construction. • It is not available yet because of limited resources. • It is not priority yet.	• It is for first aid for student if they are sick or have accident in school • It is important to gain adolescent health • It is to keep the class room clean

Some expectations raised by the students, teachers and parents include school facilities, health education and collaboration. The students mentioned school facilities such as healthy toilets and a sufficient number of rubbish bins in school, the need to obtain more knowledge about health and expectations that teachers collaborate with parents to improve self discipline. Teachers put more emphasis on plans to carry out more activities to improve students' health and to develop stronger collaboration with the health sector. Meanwhile, parents expected that the school also provide activities that involve parents in order to improve health awareness among parents (see table 5.8). Generally, needs towards healthy schools and healthy behaviour were slightly different between students, teachers and parents. The students were concerned more about the facilities, environment nd communication, while the teachers and parents focused more on health program activities, collaboration with government and health education.

Table 5.7. Needs towards healthy schools and healthy behaviour

students	teachers	parents
• Cleaner toilet in the school • Gain health skills • No street vendorsoutside the school • Enough number of garbage bins • Stronger collaboration between teacher and parents to increase student self discipline • More seminars or health education in school	• Plan to develop more health related activities for the students • Increase collaboration activities with health sector	• Health education for students and parents • Involve the students directly to educate about healthy life style from the MOH • MOH should collaborate more with school • Gain discipline in throwing garbage in rubbish bins

The different perception between students, teachers and parents above reflects the gap that need to be addressed by all the players or stakeholders in implementing the HPS concept. These perceptions also show how far we need to improve health skills among the school community.

5.4. Conclusions

The national strategy and policy of school-based health programs was developed in the 1960s and all schools are expected to run the program. The first section in this chapter explained that the two government sectors that actively engaged in school-based health programs are the Education and Health Departments. The Education office managed to provide booklets or guidelines, training, facility survey and school award competitions. The Health office provided several health programs such as food supplement and the *'little doctor'* program for elementary school, health screening for new students, 'trias UKS', 'PKPR', 'PHBS' and other health projects that focused on children and adolescent health.

The policy at the national level is relatively strong and operational strategy guidelines are available, but a poorer level of policy and practice occurred at school level. Challenges from the health sector include monetary constraint, human resources inadequacy, bureaucracy and management constraints. Similarly, the education sector expressed challenges such as monetary constraints, health capacity, collaboration and technical barriers.

The second section of this chapter discussed the implementation of the school based health program at the district level, which was in Depok. The challenges in the district

level were relatively similar with the national level, but specifically for the district level, the challenge is to improve relationship between education and health sectors and understanding about each others' responsibility to maintain an effective school health program.

As part of the second section, it is also described that different school components expressed slightly different understanding and awareness towards adolescent health. Basically, teachers, students and parents, agreed that health is very important for adolescents. The teachers and parents had better understanding about health than the students. They all mentioned smoking, drugs, alcoholic drink, and unhealthy foods were the main health-risk behaviour among adolescents. Particularly for smoking, students, teachers and parents pointed out that peer pressure was the most common reason for adolescents to try smoking and become smokers. In terms of unhealthy food consumption, students mentioned that the reasons for the food preference were mainly, accessibility (available and affordable), tasty, and filling. The meaning of the school-based health program from the perspective of students, teachers and parents was similar. Overall, the teachers and students thought that the school-based health program was useful to help or give first aid to students who were sick during school hours. In the mean time, needs towards healthy school and healthy behaviours were slightly different between students, teachers, and parents. The students were concerned more about the facilities, environment and communication, while the teachers and parents focused more on health program activities, collaboration with government and health education.

Overall this chapter points out the barriers in school-based health practice from the different perspectives of the education and health offices at national and district level, as well as awareness from the school community towards adolescent health lead to the gaps in implementing the school-based health program. Following up this findings, it is necessary to investigate the actual experience the smaller scope, at school level and to analyse the needs from the school community including the health needs from the students perspective. The next chapter will analyse the major health-risk issues among adolescents in Indonesia, particularly in Depok city, West Java, Indonesia, as the needs expressed by the students, prior to investigating the experiences, challenges, and needs at the school level.

Chapter 6. Health-risk Issues in Adolescents in Indonesia: A case study of school-based health survey in adolescents in Depok City, West Java

6.1. Introduction

Prioritizing the health-risk issues in adolescents is crucial as part of the strategy development to improve adolescents health. The purpose of this chapter is to describe the proportion of health-risk among adolescents particularly in Depok city, in order to plan a more effective prevention and intervention strategy for the future in Depok city. The data was gathered from a survey in 2006 conducted by the Indonesia National Institute of Health Research and Development. The school-based health survey was completed in 2006 in 29 Junior Public Schools, and involved approximately 1650 students with the age of 13 to 15 years old in Depok, West Java Indonesia. The survey provides information on health risk behaviour in adolescents, such as smoking, eating habit, self hygiene, physical activity, injury and mental health issues. This survey used a standardized instrument of Global School-based Health Survey, developed by WHO. The detail of methods of study for this analysis is described on Chapter four. A limitation of this survey is that the survey was conducted in 2006 which is the most recent data that represents a district level of Depok city as part of Java island. Similar surveys had been done but representing a larger area (island) which was the whole Java island in 2007. The next sections describe the proportional distribution of several health-risks at district level (Depok, West Java). Quantifying the major health-risk issues among adolescents will lead to more understanding about the priority of health needs among adolescents and how to direct the intervention and prevention focus.

6.2. Quantifying the common health-risk issues among adolescents

As mentioned in the literature review, the most common health-risk among adolescents worldwide, includes smoking, unhealthy diet, physical inactivity, emotional/mental health problems, unhygienic behaviour, sexual behaviours that contribute to HIV infection, and other STI, unintended pregnancy, violence, unintentional injury, alcohol and other drug use.

On the basis of the 2006 survey, the proportions of health-risk issues among adolescents in Depok are provided on table 6.1. The proportions are significantly different between males and females in most of the health-risks. More detailed figures of males and females can be seen on figure 6.1 and 6.2.

Health-risk behaviour	Proportion (%)			Chi square p value
	Males (n= 760)	Females (n= 888)	Total (n= 1648)	
during the past 30 days :				
- Often or always feel hungry but no food at home	2.7	1.7	2.2	0.022
- Eat fruits less than once or never	37.1	24.5	30.4	0.000
- Eat vegetables less than once or never	23.6	14.6	18.8	0.000
- Never eat breakfast before going to school	13.7	15.1	14.5	0.290
- Buy food from street vendor most of the time & always	43.4	31.8	37.1	0.000
- Never or not every day brush teeth	22.9	12.9	17.5	0.000
- Never or rarely wash hands before eating	7.1	4.4	5.6	0.007
- Never or rarely wash hands after use toilet	5.8	3.4	4.5	0.000
- Miss classes 3 days or more	4.6	1.6	3.0	0.000
- Feel neglected by parents	34.4	27.5	30.6	0.002
- Ever smoke	39.2	3.7	20.1	0.000
During the past 12 months:				
- Ever felt lonely, sad, worried, & want to suicide	11.4	19.6	15.8	0.000
- Ever had injury	29.3	12.3	20.1	0.000
During the past 7 days or typical week :				
- No physical activity	6.2	6.2	6.2	
- People smoke in your presence 1 to 7 days	62.4	58.9	60.5	0.08

Table 6.1. Proportion distribution of health-risk behavior among adolescents age 12 – 15 years in Depok, West Java, Indonesia 2006

The ten most common health-risk behaviours among females and males can be seen in figure 6.1 and 6.2. The ten highest reported health risk is slightly similar between males and females. However, in general males tend to have higher proportion than females for all of those health-risks except for mental health related issues (felt sad, lonely, worried, and suicide attempt). Involuntary smoking seems the main issue among both males and females. The only difference is about the physical activity, which does not appear in the ten highest health-risk behaviour among males, but it appears in females. Feeling lonely, sad and worried is the last tenth highest among males while it is in the fifth highest among females.

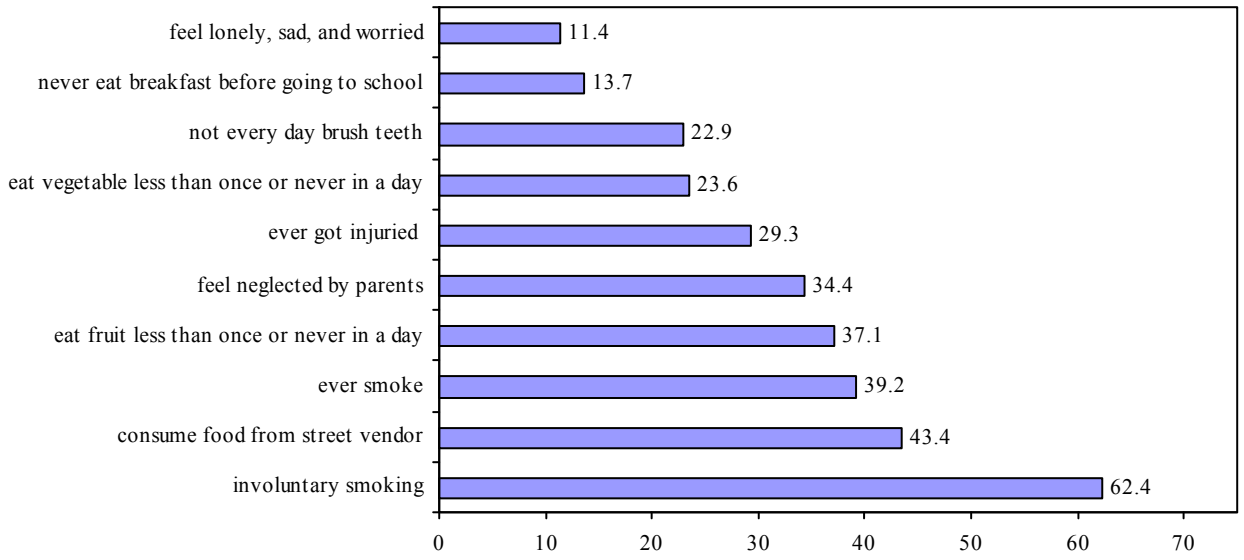


Figure 6.1. Ten highest health-risk behavior among males age 12 to 15 years in Depok, West Java, Indonesia 2006 (total n= 760)

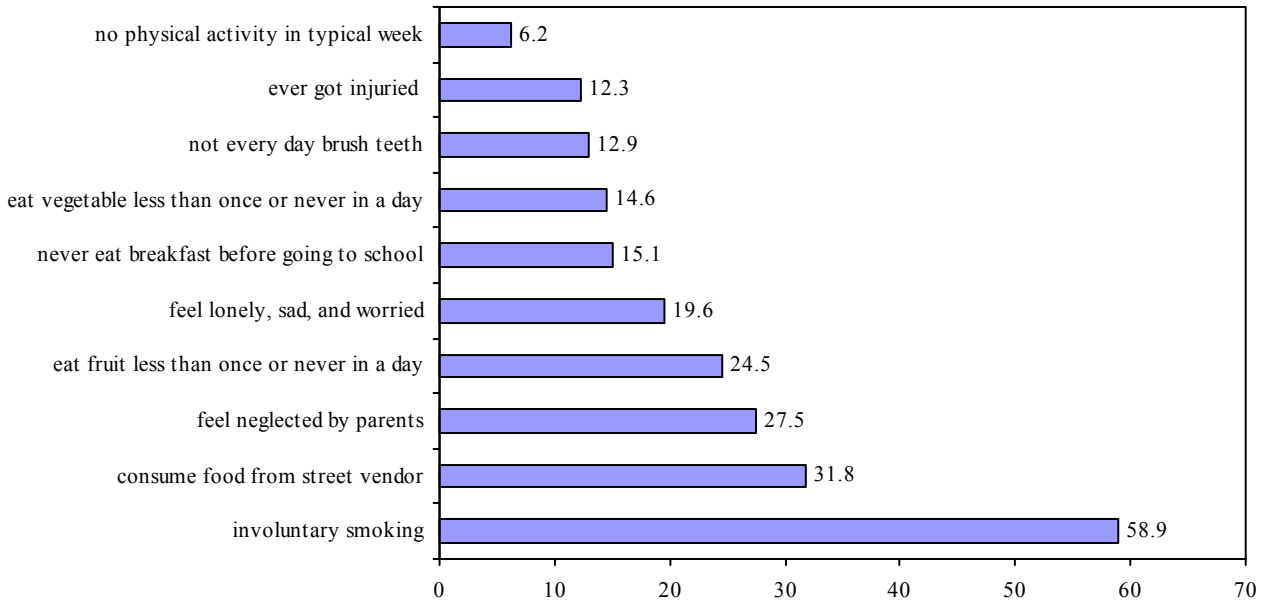


Figure 6.2. Ten highest health-risk behavior among females age 12 to 15 years in Depok, West Java, Indonesia 2006 (total n= 888)

The ten most common health-risk behaviour in figures 6.1 and 6.2 can be grouped into five main related behaviours such as smoking, diet related behaviour, hygiene related behaviour, mental health related behaviour, and injury. The smoking issues included experience to try smoking and involuntary smokers. The diet related behaviour referred to breakfast habit, fruit and vegetable consumption, and buying food from street vendor. Hygiene related behaviour consisted of behaviour of brushing teeth and hand washing. Mental health issues included feeling lonely, sad, worried, and attempt suicide, and feeling neglected by parents. Meanwhile, the injury refers to experience having injury the last 12 months. Lack of physical activity is actually also one of the issue among females, but not in males. Although physical inactivity was one of the health-risk issues among females, the study will not present the data because the variables were not specific and required further supporting information included in the instruments. The next sections describe in more detail each of the health-risk behaviours in adolescents in Depok city and presents the proportion of each health-risk in different genders and school type. The school type is defined as:

- Good resources: Schools that have sufficient facilities and teachers
- Moderate resource: Schools that have moderate facilities and teachers quantity
- Limited resources: Schools that are located in remote areas and do not have many students and have very limited resources.

Particularly for smoking, the data will only present male data because of very few numbers of smokers among female students to be analysed. The analysis of the data was not aimed to test causal relationship, because the survey was designed for descriptive analysis.

6.2.1. Smoking behavior

Smoking is one of the main health issues in Indonesia particularly for males. According to Indonesia National Health Survey in 2001 the smoking prevalence for population age ten years and older in West Java was 31% which was higher than the national figure (27.2%) (SKRT, 2001). The tobacco youth survey in 2006 in Java, Indonesia, showed that the prevalence of ever smoke tobacco among male adolescents age 13 to 15 years was 62% and 25% for current smokers (CDC, 2006).

As can be seen from figures 6.1 and 6.2, passive smoking is an issue as a health risk among adolescents. Both males and females are quite highly exposed to tobacco smoke. The tobacco smoke exposure is most probably from their residential environment, public places, and may be from the school. The regulation enforcement of smoke free area in most of the public areas in most districts in Indonesia is very weak.

The next figures will describe the smoking behavior only in males because it is a main issue in males but not in females. The smoking data in females is not sufficient enough to be statistically analysed. The smoking proportion among females is 3.7%. From the figure 6.3 below, it is shown that the proportion of smoking among males in Depok is 39%, which includes ever smoked in the past as well as current smoking. The proportion is lower compared to Java island in 2006 (62% for ever smoked) but it is higher compared to proportion in Java island in 2007 (23.4%). Among the male students who smoke, they reported that they mostly started smoking at 12 to 15 years old (40.3%), that their father also smokes (54.1%), and they are mostly surrounded by people who smoke in their present (76.8%). About 3.4% of those who currently smoke have never tried to stop smoking, and most likely still will be a smoker in the future. Males who smoke also are most likely (77.2%) to live in an environment where people smoke in their presence compared to those who do not smoke (53%). Also, smoking among males is significantly related to fathers who smoke (54.1%).

Figure 6.3 shows that males who smoke tend to have poorer academic performance compared to those who do not smoke. Males who smoke have significantly higher class absentism (6.4%) than those who do not smoke (3.5%) ($p=0.000$) and significantly have a lower average academic score (mean value: 6.91 vs 7.13 of 1 to 10 score) ($p=0.001$). However, this doesn't refer to any causal relationship, because the data was not designed for causality, and it will need further study to analyze causal relationships between smoking and academic performance and class absentism. Other factors may have more direct effect on academic performance and class absentism such as malnutrition, study motivation, study time, among others.

Meanwhile the General Linear Model analysis showed that the effect of smoking on the academic score of male students was consistent for the three school resource types of good, moderate or limited ($p = 0.588$). In other word, students who smoke have lower

average academic score compared to non smokers, which occurred in all three school types.

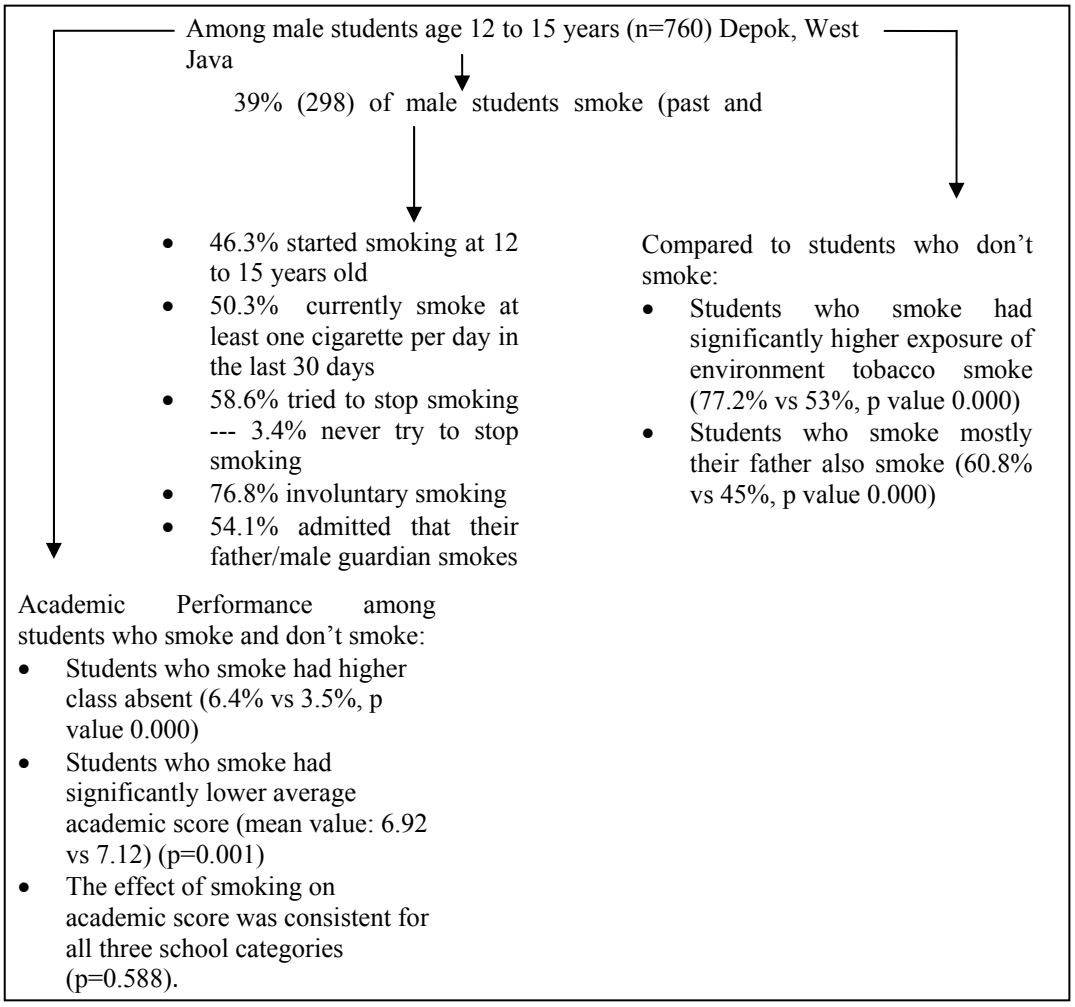


Figure 6.3. Smoking issues in male student age 12 to 15 years in Depok, West Java.

In conclusion, smoking issues among male adolescents includes ever smoked and involuntary smoking. This becomes more alarming as those who smoke have a lower academic score and higher class absenteeism compared to those who do not smoke, although the analysis cannot prove the causal relationship. In terms of involuntary smoking, male students who ever smoked admitted that their fathers were smoking and the proportion was higher compared to those who did not smoke. Parent who smoke or father who smoke is related to adolescents who smoke, as most of the male students who smoke said that the fathers were smokers.

6.2.2. Dietary or food related issues

Dietary related risk behaviours in this survey include fruit and vegetables consumption, consume food from street vendors and breakfast practice. Consumption of fruit and vegetables is one of the main diet issues among adolescents. Vegetables are not a favourite food for most children and adolescents, while fruits are mostly less accessible due to high price. Food from street vendors is very accessible and common in most places in Indonesia, including in Depok city. Most of the schools are facing dietary issues related to food from the street vendors, such as food hygiene and sanitation, oil content, food additives and colour. Meanwhile, breakfast practice becomes important issues because it relates to nutrient needs during the learning process at school. The descriptive analysis of diet related behaviour among students in Depok city can be seen in the figures below.

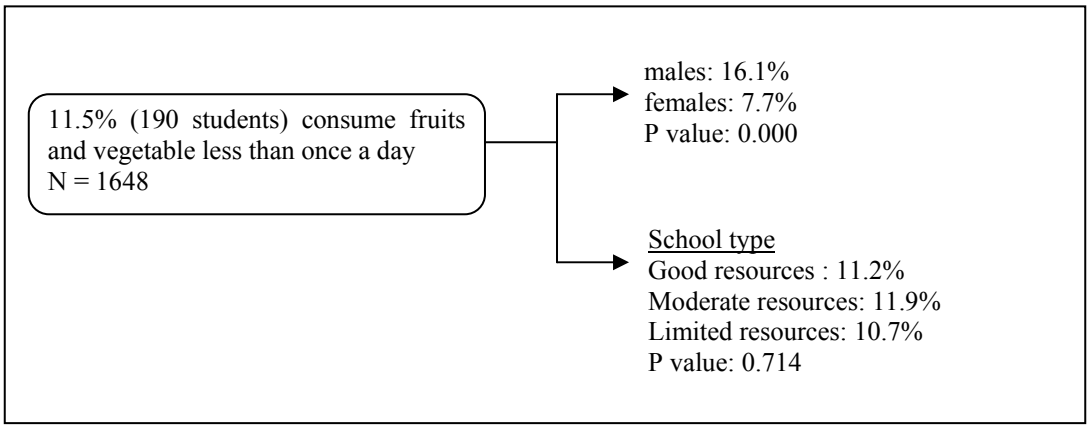


Figure 6. 4. Proportion of students who consume fruit and vegetables less than once a day by gender and school resources type.

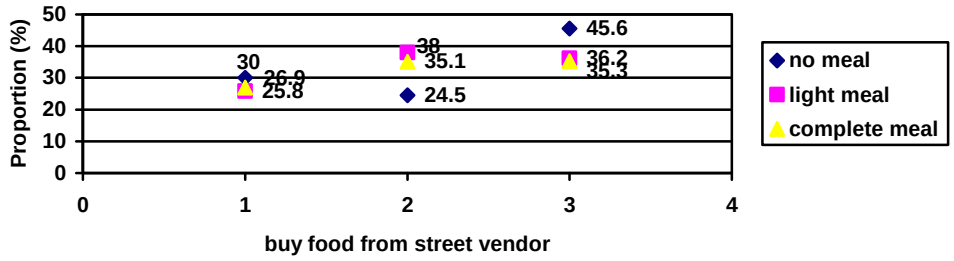
Figure 6.4 shows that overall the proportion of students who consume less fruit and vegetables, which is once or less per day, was 11.5%. The proportion is significantly higher in males than females (16.1% vs 7.7%, p= 0.000), and this effect is consistent in all three different school types (p= 0.714).

In term of breakfast habit, there is no significant relationship to gender. The proportion having no meal, light meal and complete meal is not significantly different (p = 0.298) in males (13.7%, 40.7%, and 45.6%) and females (15,1%, 43.1%, and 41.8%).

The proportion having a meal before going to school was not different between schools with good, moderate and limited resources. The proportion having no meal, light meal, and complete meal were similar among students in school with good resources (14.2%,

43.1%, and 42.8%), moderate resources (14.0%, 43.0%, and 43.1%) and limited resources (16.3%, 38.3%, and 45.4%).

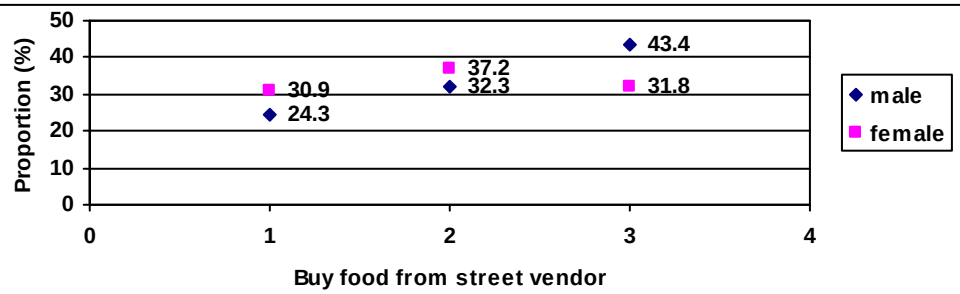
As it shows in figure 6.5 below, the log linear analysis indicated a significant difference in student practice to buy food from street vendors between those who usually either have no meal, light meal and complete meal before going to school. Students who have no meal before going to school have a higher proportion of always/most of the time to buy food from a street vendors (45.6%) than those who have light meal and complete meal (36.2% and 35.3 respectively).



Note: A significant difference between habit to buy food from street vendor and having breakfast (Chi square 18.385,p= 0.001)
1 = never/rarely ; 2 = sometimes ; 3 = most of the time/always
n = 1648

Figure 6.5. Proportion of breakfast type and habit to buy food from street vendor

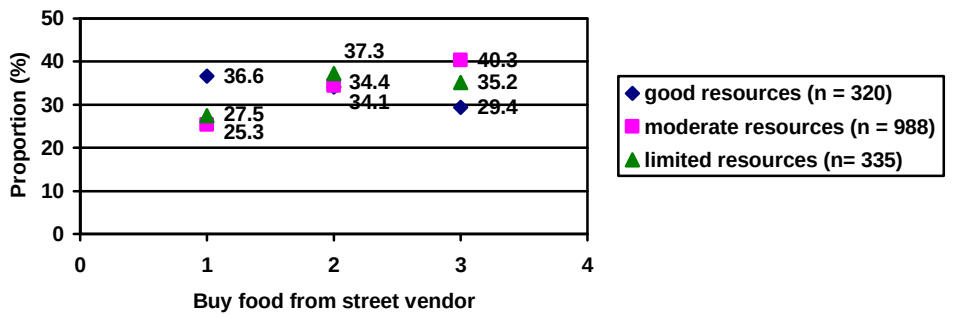
Regarding the habit of buying food from street vendors, most of the students always or most of the time buy food from street vendors outside the school (36.9%). The log linear analysis of three variables, street vendor food, gender and school resources type, showed there was no significant three ways interaction, which means the relationship of buying food from a street vendor in males and females was consistent in the three school types. Nevertheless, the two interactions, street vendor food vs gender, and street vendor vs school type showed significant relationship (see figure 6.6 and 6.7). In gender different, the proportion of how often students buy food from a street vendor with category of never/rarely, sometimes, and always/most of the time, was 24.3%, 42.5%, and 43.4% respectively in males, and 30.9%, 37.2% and 31.8% respectively among females. The proportion of students who always/most of the time buy food from a street vendor was higher among males than females (43.4% vs 31.8%), and most of the females (37.2%) only sometimes buy food from street vendor.



Note: significant difference between habit to buy food from street vendor and gender (p= 0.000) n males= 760; n females= 888
1 = never/rarely ; 2 = sometimes ; 3 = most of the time/always

Figure 6.6. Proportion of habit to buy food from street vendor between male and female students

Meanwhile, in terms of interaction with school resources type, the log linear test showed that there is a difference in practice to buy food from street vendor in different schools with different type of resources (see figure 6.7 below). The figure shows that most of the students in schools with good resources were never or rarely buy food from street vendor while those who were in school with moderate limited resources tend to always or most of the time buy food from the street vendors. The proportion of how often students buy food from street vendors with category of never/rarely, sometimes and always/most of the time, was 36.6%, 34.1%, and 29.4% respectively in schools with good resources; 25.3%, 34.4% and 40.3% respectively in schools with moderate resources; and 27.5%, 37.3%, and 35.2% respectively in schools with limited resources.



Note: significant different between habit to buy food from street vendor and type of school resources (p= 0.000) n total = 1643
1 = never/rarely; 2 = sometimes; 3 = most of the time/always

Figure 6.7. Proportion of habit to buy food from street vendor between three types of school

6.2.3. Hygiene

Hygiene related behaviour in this survey included information about hand washing and teeth brushing. Hand washing habit among students is one of the major issues in Indonesia, especially during the infectious diseases outbreak, such as SARS and avian flu. Hand wash is the key preventive behaviour of deadly infectious diseases suggested by health professionals and the government in Indonesia. The survey found about 5.6% of students never or rarely washed hands before eating (see figure 6.8).

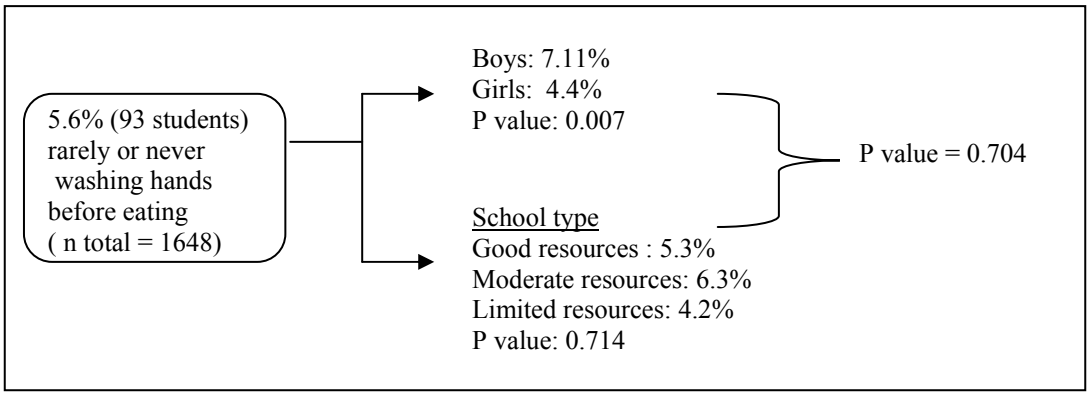
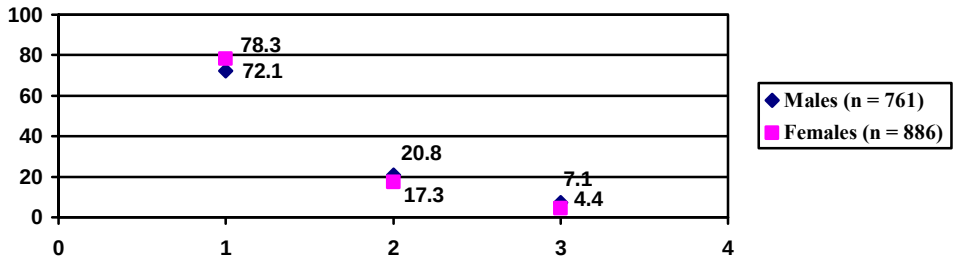


Figure 6.8. Proportion of hand washing habit before eating among students.

It can be seen in figure 6.9 below the relationship between hand washing before eating and gender is the same for the three school types (p = 0.704). In a two way interaction, the hand washing habit is significantly different between males and females (p= 0.007) (see figure 6.9). The proportion of always wash hand before eating is higher in females (78.3%) than males (72.1%), and for those who sometimes and rarely/never wash hand before eating are higher in males than females (20.8% & 7.1% v 17.3% & 4.4% respectively). Meanwhile the proportion of hand washing before eating within the three school types is not significantly different (see figure 6.10).



Note: A significant different between habit to wash hand before eating and gender (p= 0.007) n total = 1647
1 = always/most of the time wash hands before eating; 2 = sometimes wash hands before eating; 3 = rarely/never wash hands before eating

Figure 6.9. Proportion of hand washing before eating and gender

Regarding habit of brushing teeth, 17.4% of students brush their teeth only once or less a day (see figure 6.10). The proportion was significantly higher in males than females (22.9% v 12.9%, p= 0.000). Overall, the proportion was not that significant within the three school types (p= 0.067).

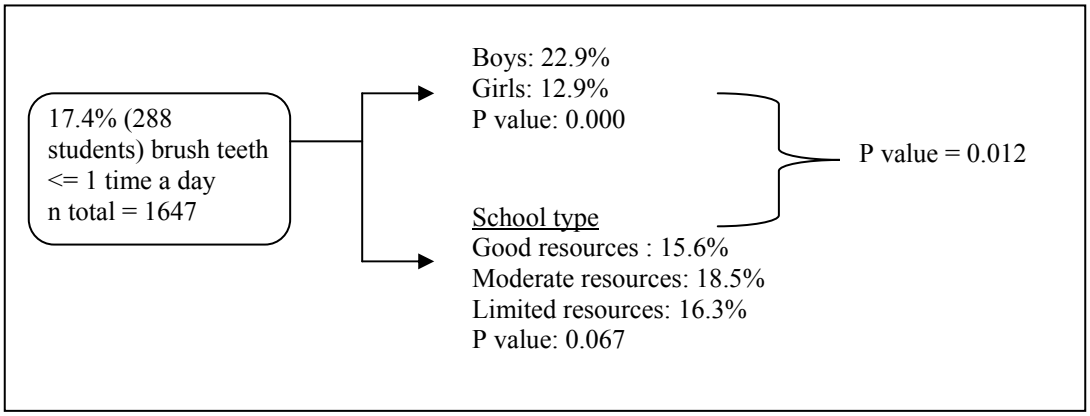
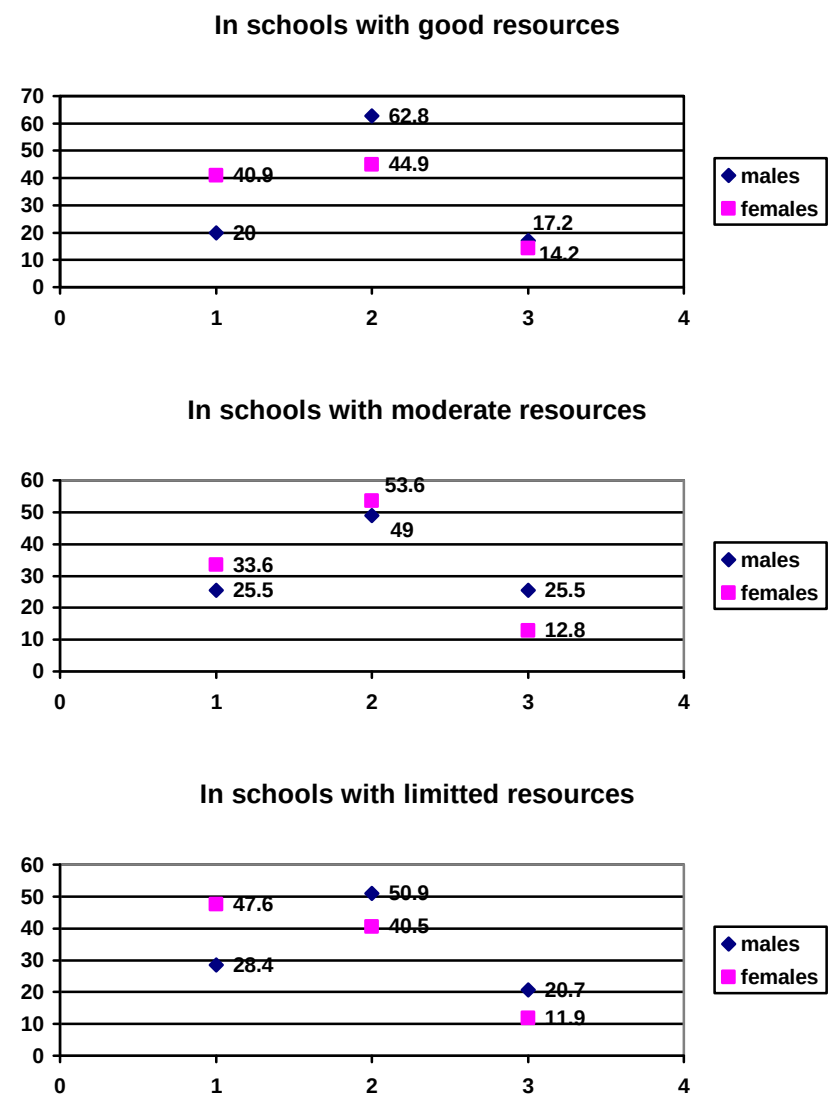


Figure 6.10. Proportion of teeth brushing among students.

The relationship of teeth brushing and gender was different within the three school types (see figure 6.10). In the schools with good resources and limited resources more males (62.8% and 50.9%) teeth brushing two times a day compared to students in schools with moderate resources (44.9%). Overall, teeth brushing habit was better among females than males, as more females brush their teeth twice or more in a day than males (see figure 6.11). In general, males had more health risk regarding hygiene compare to females. Males were more likely to never wash their hands or brush their teeth than females.



Note: A significant relationship between brushing teeth and gender in different school types (p= 0.012) n males = 761; n females = 886; n total = 1647
1 = brush teeth >= 3 times a day; 2 = brush teeth 2 times a day; 3 = brush teeth less than 1 per day

Figure 6.11. Relationship between brushing teeth and gender in three school types.

6.2.4. Injury

Injury is one of the health-risk issues among adolescents in Indonesia. The injury in this survey is defined by having experience of injury in the last 12 months. From figure 6.12 below, between genders, the proportion of ever had injury was higher in males (42.5%) than females (23.7%) with p value 0.000. Within the three different school types, the school with moderate resources had higher proportion of students who had injury (16.5%)

compared with students in better resources (15.6%) and less resources (13.9%), but the different was not significant (p=0.608). The association between variable of ever had injury and gender was consistent in different school type (p= 0.778). The figure also shown that among those who had injury in the last 12 months, about 46.7% were participating in sport or exercise when the injury occurred, 16.4% when they were walking or running and 15.8% when they were riding a bicycle or motorbike.

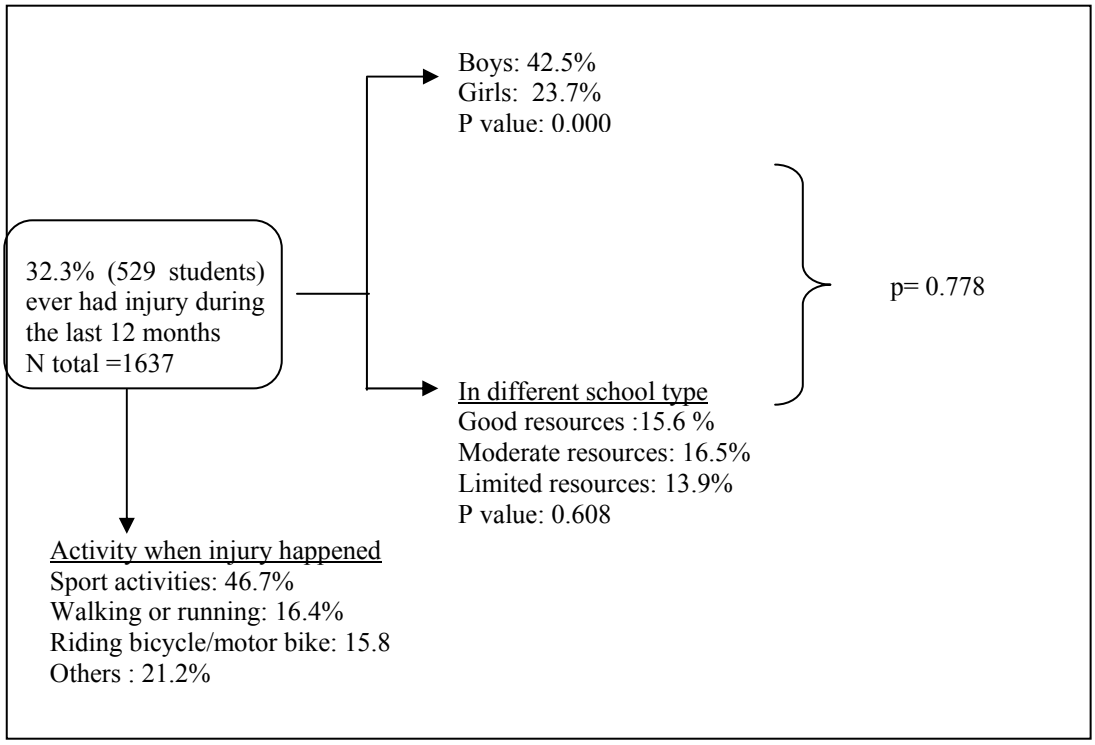


Figure 6.12. Proportion of ever had injury in different gender, school type, and activities when injury happened in adolescents.

6.2.5. Mental health related behaviour

Mental health related behaviour in this survey referred to two combined variables, which were feeling sad, lonely or worried and attempting suicide during the last 12 months (as one variable of unhappy feeling), and felt neglected by parents (as one variable). Figure 6.13 below showed 15.8% students felt unhappy (lonely, sad, worried or attempt suicide). The relationship between unhappy feeling and gender was the same for all three school types (good, moderate, and limited) with p value of 0.549. The two ways interaction showed significant relationship between feeling unhappy and gender but no relationship between feeling unhappy among students and school type. The proportion of feeling unhappy was higher among females than males (19.6% v 11.4%, p= 0.000). The proportions were slightly different between school with good resources, moderate resources and limited resources (15.6% v 16.5% v 13.9%, p value 0.608).

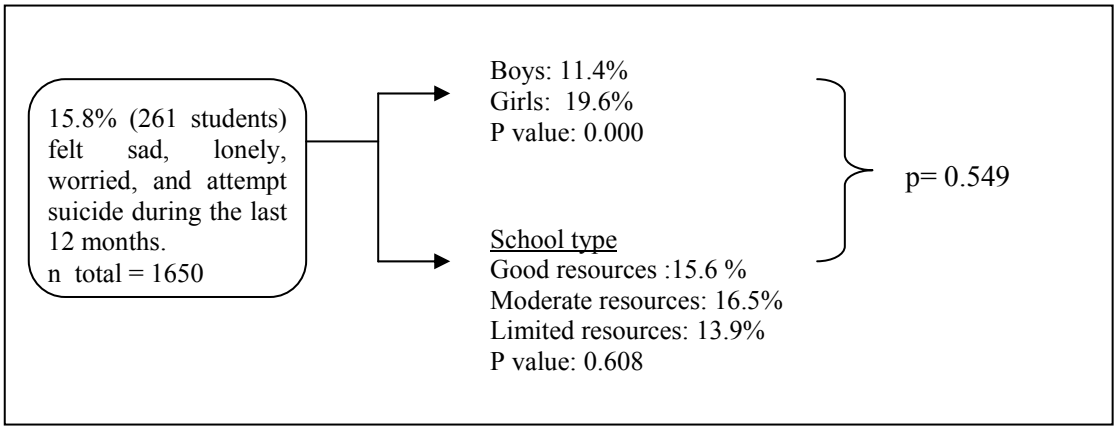


Figure 6.13. Proportion of mental health related behaviour among students.

Another variable used to analyse the mental health related behaviour among adolescents was the variable of feeling neglected by parents (figure 6.14). This variable was generated from either combination of this three variables such as parents never check to see homework; or parents never understand your problem; or parents never really know what you were doing. About 30.6% of students admitted that they felt neglected by parents during the last 30 days. The association between feeling neglected by parents and gender was consistent in all of the three school types (p = 0.597). The proportion of feeling neglected by parents was significantly higher among males than females (34.4% v 27.5%, p = 0.003). The proportion of students who felt neglected by parents was not significantly different in different school types (31.9%; 28.8%; 34.8%, p = 0.130).

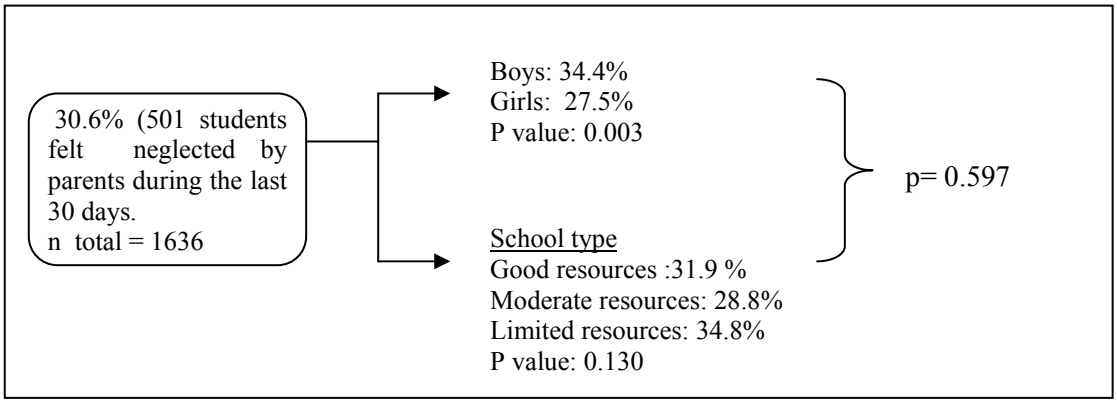


Figure 6.14. Proportion of felt neglected and gender in different school types.

Although the relationship between feeling neglected by parents and gender was not significantly different in three school types (p=0.597), the proportion was significantly lower in females than in males. Generally, more males (34.4%) felt neglected by parents than females (27.5%) with p value 0.003.

Overall, the health-risk issues among adolescents in Depok include smoking, diet, hygiene, mental health related issues and injury. There is a gender difference in the health-risk issues among adolescents in Depok. The data shows that male students have higher proportion of the health-risk compared to female students, except for variable of feeling sad, worried and lonely (see Figure 5.1 and 5.2). The male students tend to have higher health-risk than females. This gender difference reflects different needs for preventing health risk among adolescents

6.3. Conclusion

This chapter analysed the proportion of particular health-risks that occurred among adolescents in Depok city in order to estimate how big is the health-risk issues are that need to be addressed by related government sector. The survey found the health-risk issues among adolescents found in Depok city included smoking, diet, hygiene, injury and mental health related behaviour. Smoking was a main issue among males, while the involuntary smoking is a major issue in both males and females. Issues in diet related behaviour included consuming unhygienic food from street vendors, low nutritious food in school canteens and low intake of fruit and vegetables. The hygiene issue was related to hand washing habits. Injury was related to sports injury that mostly occurred in males. The mental health related behaviour included the issues on feeling unhappy and attempting suicide. Most of the health-risk behaviours were higher among males. In general, compared to females, more males ever tried smoking, had involuntary smoking, consume less fruit and vegetables, more frequently buy food from street vendors, rarely or never wash their hands before eating, brush teeth once or less in a day, ever had injury and felt neglected by parents.

This surveys' findings can be used as evidence based information to prioritise the health-risk issues in adolescents that need to be prevented and reflecting the need of a school based health program to address the health-risk issues in adolescents. Furthermore, it is important to explore the actual condition in the schools particularly how the school implements the school-based health program. Therefore the next chapter will describe the implementation of school-based health program in Junior High School in Depok as a case study.

Chapter 7. School-based Health Program in Junior High School: A case study in Depok Municipality, West Java Indonesia

7.1. Introduction

A school health program is part of the national strategy of children and adolescent health that should be implemented in all schools across Indonesia. The implementation of a school health program depends on the school and education authorities at a district level, because the government system allows the government at a district level to authorise the health priorities and programs including the school health program.

The purpose of this chapter is to understand the school readiness, capacity and need towards a school health program. As a case study, two schools have been selected representing a school with good resources and a very remote school with very limited resources. Depok has a very diverse community and the school type or characteristic varies greatly from rural schools to modern schools. Information in this case study was gathered by in depth interviews and observations. The participants for this case study were two school head masters, two biology teachers, two physical health teachers and one education officer at the district level. This case study provided information on the school resources and profile, existing school health program, enablers, barriers and future plans related to school health programs; explore challenges for schools in implementing the school-based health program; and look at how schools implement the HPS concept into practice.

7.2. School A

7.2.1 School profile

School A is one of the popular junior high schools in Depok. First built in 1920, it is located in the old Depok city area and very accessible. The location of this school is very close to the elite residential area, market, office buildings and a few other schools. The current total number of students in this school is 831 students aged between 11 and 15 years. This school has 42 teachers and 9 administration staff and 14 non-office staff.

Table 7.1. Facilities in school A.

School facilities	quantity	condition
Class room	21	11 class rooms in good condition 2 class rooms in slightly damaged condition 8 class rooms in severely damaged condition
library	1 room (15 m x 9 m^2)	Good
Science room	1 room (15 m x 9 m^2)	Good
Skill room	1 room (15 m x 9 m^2)	Good
Multimedia room	1 room (9 m x 8 m^2)	Slightly damage
Art and music room	1 room (9 m x 8 m^2)	Good
Language lab	1 room (15 m x 9 m^2)	Good
Computer lab	1 room (9 m x 8 m^2)	Good
Administration room	1 room (12 m x 9 m^2)	Good
Head master room	1 room (9 m x 8 m^2)	Good
Teachers room	1 room (16 m x 9 m^2)	Good
Basket ball ground	1	
Volley ball ground	1	
Toilet	11 10 more toilets is under construction	Good
Canteen	2 canteens	Average

In general, the facilities and buildings of this school are slightly above the average compared to other state schools in Depok. As per standard class size in Indonesia, one class consists of a maximum of 40 students. The list of facilities available in this school can be seen in table 7.1. This school has its own sporting facilities and sports grounds for basketball and volleyball. This school has 11 toilets facilities for the students for males and females. From the observation, it shows that the toilets are old traditional style of toilets (see picture 7.1 and 7.2). The school provides soap and towels for hand washing in the toilets.

Figure 7.1. Male toilet in school A

Figure 7.2. Female toilet in school A

This school also has two school canteens, which are owned by different people. The observation findings show that one canteen only provides snacks and drinks, while the other canteen sells meals such as noodles and meatball soup. Some street food vendors operate outside the school building. The teachers stated that the school canteens are relatively good because the management is good and they provide good food, good size portions, good quality, affordable and mostly common daily food (see picture 7.3). The teachers described that the foods are in good quality because they have never experienced food borne diseases or food poisoning cases in the school.

Quotations from the teachers about the school canteen:

TA1: "…the management of the school canteen is relatively good because the canteen here was built by the school…so it is not in a bad condition...and the teachers always supervise and control them…and the canteens contribute money regularly to manage the waste and provide clean water…"

TA2"…the school canteen is good..the food seller is clean and tidy…they cover the foods… no piles of dirty dishes left……good canteen should cover the food… display food in covered place…"

TA1: "…the foods is not too much…the price is affordable…no deep fried chicken…usually just tofu and tempeh…"

TA1: "…good canteen should have healthy food that is free from chemical and side effect, the food seller should be clean and have no illnesses, clean place, no rubbish, and affordable food price for students…"

TA2: "…never heard of any students having diarrhoea or stomach-ached or getting sick because of the foods…"

Figure 7.3. School canteen in school A

7.2.2. School health program in School A

This school has two health related activities for the students as part of the extra curriculum activity, which are school health program *(UKS)* and adolescent red cross *(PMR* or "Palang Merah Remaja"*)*. Two staff from the red cross office give training to the students every Saturday. The teacher in charge of those activities is the biology teacher. They also have other related activities as part of the curriculum, which are environment education and planting the herbs medicine. The activity of growing the herbs is not actively running because the school does not have sufficient land to grow the plants. Apart from those activities, health education is included in the biology and sport subjects.

Health content, particularly in reproductive health in the curriculum (in biology and sports subjects) is only given in the 9th grade. The health education given for 8th grade is about respiratory, transportation and digestive systems in living things.

The biology teacher expressed that the school health program is not yet optimum because of lack of funding support. The teacher also feels that the health content in the curriculum

is not enough for the students to understand about health. The teacher was more concerned about the schools sport competition. They express that the school needs money to prepare for the sports competition.

Quotations from teachers regarding the health content in the curriculum:

SA1: "…health subject is only for grade 9 student under the biology subject...but it is only very brief about some common diseases symptoms and prevention…and under the sport subject they were taught how to prevent sport injury…"

SA2:"… teaching time for biology subject is lacking…"

SA1: "…the difficulty is the funding…because the award school competition is quite often.."

The teachers had never heard of the concept of health promoting school. The health related activities they know are the school health program (UKS) and adolescents' red cross (PMR). The enablers of the school health program were the strong commitment from the head master, teachers and support from the red cross. The red cross gave first aid training for the students once a week.

The teachers expect that the health care services should provide more access for students, especially when they are injured during school time. They also expect health officers from the Health Department to give health training or education for teachers on a more regular basis.

Plans for the future are focused on the basketball competition, which they are targeting the winners' trophy at district level, in order to get a better school reputation. The school also expects to have one person stand by in the school health room to monitor students health.

7.3. School B

7.3.1. School profile of School B

School B is a small private school located in an isolated area in Depok. The school opened in 1985 under the management of Muhammadiyah Foundation, one of the biggest Muslim associations in Indonesia. In 2008, this school had 497 students (aged 11 to 16 years), 4 full time teachers, 25 casual teachers and 5 administrative staff (see Table 7.2).

Table 7.2. Human Resources quantity and degree qualification of school personnel in school B

Staff	Quantity	Degree qualification
Full time teacher	4	Bachelor
Part time teacher	25	High school (3) Bachelor (22)
Administration	5	High school

The location of this school is not easily accessible. Most of the students go to the school on foot because the public transportation operated only in a very limited time (around 10 am to 13 pm), meanwhile school started at 7 am. Students in this school are mostly from a lower level socio economy status and most of the students cannot afford to go to school by public transportation everyday.

The resources and facilities of the school are very limited compared to other schools in Depok. The facilities in the school are listed on Table 7.3 . Only two toilets are available for the students and they are not separated by male and female. The toilet is dark, wet, not properly cleaned and has insufficient air ventilation (see Picture 7.4). There is sufficient clean water in this school.

Figure 7.4. Toilet for students in School B

Table 7.3. Facilities in School B, Depok, West Java

School facilities	quantity	condition
Class room	11	Average
library	1 room (6 m x 9 m^2)	Average
Science room	Not available	
Skill room	Not available	
Multimedia room	Not available	
Art and music room	Not available	
Language lab	Not available	
Computer lab	1 room (9 m x 8 m^2)	Average
Administration room	1 room (12 m x 9 m^2)	Average
Head master room	1 room (9 m x 8 m^2)	Average
Teachers room	1 room (16 m x 9 m^2)	Average
Volley ball ground	1	Average
Toilet	1 for staff and students	Average
Canteen	Not available	

7.3.2. School health program in School B

This school has never run a school-based health program since the school first opened. The school health program is included in the school policy but has never been implemented. This is due to insufficient resources to run the program, also a lack of school policy support and insufficient teacher awareness about health behaviour.

Quotation from teachers about the school health activities:

SB1: "…school health...no...we don't have…but we have the program but no activities, only a room for sick students to take a rest...but the room is not available now...it is still under construction…usually in the mosque…I feel sorry if female student get sick.."

SB1 : "…first, the school program…we want the school to have school health program…but it is not a priority yet…secondly, teacher's awareness…especially due to smoking…because many of my colleagues are still smoking…so it is difficult...we are not to allow the students to smoke but the teacher is smoking.."

The school policy does not make the health issues as priority. Health knowledge is given in biological science and physical health education subjects. The school has put the health impact of smoking in the grade 7 curriculum. The school also has a rule for banning smoking ban for the students and punishment will be given to students who smoke. However, the teacher thinks that the punishment is not effective because many male students still smoke. This reflects in the quotation below:

SB1 : "...school students nowadays…even if we give punishment…they still don't care. As an example…we give a 50 point fault for smoking…the student will say…it is ok if you give 50 point…giving punishment is not effective for the student nowadays.."

This school doesn't have a canteen or cafeteria or any shops that sell food inside the school. The students usually buy food from street vendors outside the school. The teacher believes that a school canteen is necessary, because they can use it to control the quality of food for the students.

SB2: "…school canteen is important…because we can control the food in the canteen whether it is healthy or not….mostly students don't know about health, may be because lack of health knowledge, rarely read, and the teachers didn't inform them…"

The foods that are mostly sold by the street vendors include deep fried corn flour based patty, deep fried bread, very colourful home made gelatinous drink (that might use unsafe chemical food colouring), chips made from flour, instant noodles and other foods that are less nutritious. Specifically for deep fried food, they use the same oil many times during the whole day. From the observation, the foods mostly contained artificial flavouring and colouring (see Picture 7.5, 7.6, 7.7). However, the teacher considered that those foods were good food.

SB2 : "…the foods seem good for health…the students often buy noodle…I often warn the food sellers who give toys as a bonus if you buy the food for them…it is kind of gambling… but the food is ok…the people who sell the food are the relative of our colleague in school…"

Figure 7.5. Food stall in school yard in "SMP Muhamadiyah 29" Junior High School in Depok

Figure 7.6. Food stall in school yard in "SMP Muhamadiyah 29" Junior High School in Depok

Figure 7.7. Food stall sold 'jelly drink' in school yard in "SMP Muhamadiyah 29" Junior High School in Depok

Figure 7.8 Food street vendor in "SMP Muhamadiyah 29" Junior High School in Depok

The school is aware of the importance of preventing health-risk behaviour in adolescents, and they expect a routine health screening for the students every two or three months. A teacher said that the health officers very rarely visit the school for health education. Teacher's awareness and skills for health related issues are very important especially in a school with limited resources to run the school-based health program. At least the teachers can be a role models for the students to apply healthy behaviour in school. One of the problems for the teachers is that some teachers still smoke in the school.

SB2 : "…health is very important…because the junior high school student…they are rarely monitored by the health officers…"

The teachers have ever heard about one of the health programs, a clean and healthy behaviour program. However, it was not included in the school curriculum. They assumed that it should be included in the physical health education subject. In fact the physical health education subject was mostly practice with little in class teaching.

SB2 : "…clean and healthy life style behaviour is not included in the biology subject, it should be in physical health education subject…but it mostly practice and in class activities are rare…"

A potential enabler to support the school health program in this school is the involvement of Muhammadiyah foundation as their funding source. The Muhammadiyah foundation is a well known big Islamic foundation in Indonesia that works in the education sector.

This school has decided over main points for the future plan including planning to activate or empower the Muhammadiyah Youth Union as the entry point and focal point to implement the school-based health program, also to increase the amount of money to support the school health activities. The members of the association is mainly the alumni of this junior high school.

7.4. Challenges in the implementation of health program in school generated from the case study

The implementation of a school-based health program within a school is dependent on the resources available in the school. The resources include the facilities or infrastructure as well as the human resources and funding resources. The facilities include availability of a separate room or space for health related activities in the school such as health consultation, bed rest, health screening and other related activities. The human resources refer to capacity and awareness toward health among the school personnel. The capacity also includes the decision makers' capacity to put health as an important part of the learning process, advocacy to related stakeholders or partners, and make the program sustainable. The funding resource for school health programs in state schools comes from the government budget which is normally only 1% out of the total school budget. Particularly for private schools the funding will be from the foundation or leading organisation of the school founder.

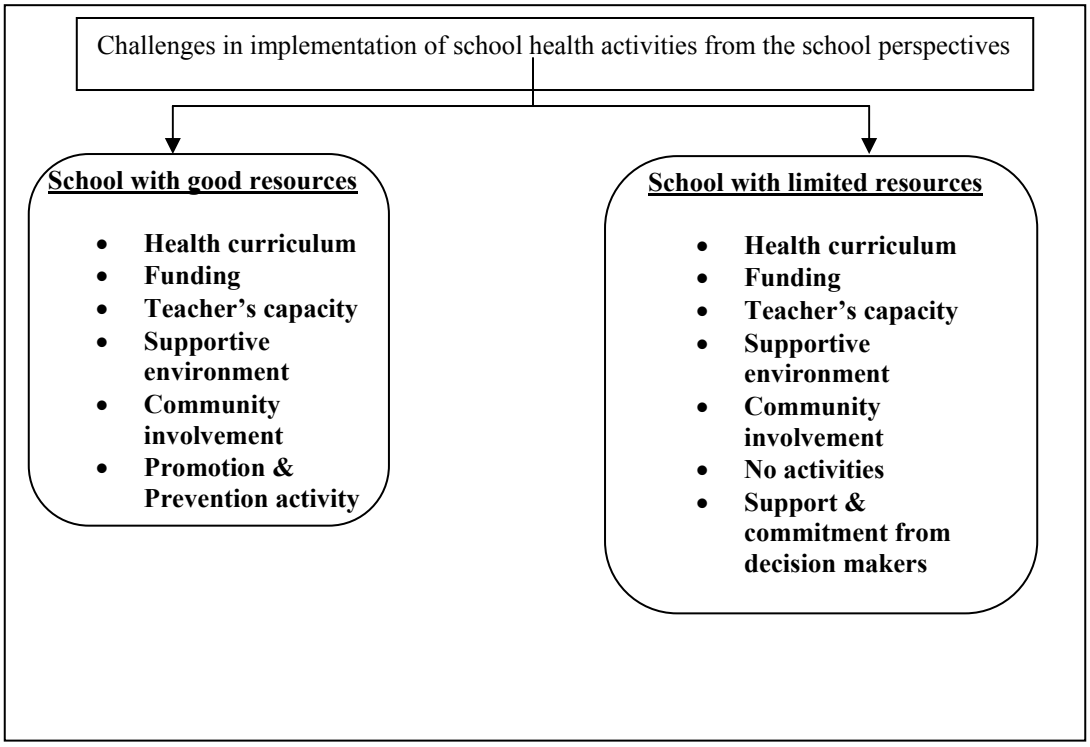


Figure 7.9. Differences and similarities of challenges in school health program implementation in a school with good resources and a school with limited resources

Figure 7.1 shows similarities and differences of challenges for implementation of school health programs between school examples that have good resources and limited resources. Interviews in the two schools mentioned above point out challenges in implementation of school health activities from the schools' perspectives. Basically both schools with good resources (School A) and limited resources (School B) have similar challenges. These include health curriculum, funding, teacher's capacity, supportive environment and community involvement. Specifically for School A, that has implemented the school health program, it has a challenge to develop more promotion and prevention activity in school health activities rather than the medication treatment or first aid treatment. Meanwhile School B has a specific challenge in obtaining support and commitment from the decision makers in the school, such as from the head master and teachers, because they haven't implemented any activities for the school health program yet. The following sections will describe further about each of the challenges in both schools.

a. Challenges in health curriculum

In School A, the school health program is strongly supported by the school head master and teachers, and they have run the program for many years. Meanwhile the school head

master and teachers in School B, the school health program is not considered a priority yet. They have not conducted school health activities. However, both types of school expressed the same issue of health curriculum.

Health education in the curriculum, which is standard for all junior high schools in Indonesia, consists of the following:

- Grade seven : environment, hygiene, sanitation
- Grade eight : tobacco use, food additive, food colouring, sweetener, and other chemical substances, and drugs
- Grade nine : reproductive health

Health material was located in the two subjects, biology and physical health (sport). Health-risk behaviour were not specifically or directly taught in those two subjects, and it dependent on the teacher's ability and awareness to include further more health-risk content in those subjects.

In School A, the biology teacher expects to have longer teaching time to enable him to teach more about health and health risks. While the teacher in the other school felt that the health material particularly for environmental health and reproductive health in the curriculum are not sufficient and needed to be supplemented. This school has a local curriculum about environmental education but without teaching material. Quotations from teachers regarding the health curriculum are as follow:

TA1: "…for the biology laboratory practicum, the teaching time is not enough…it is only 2 hours, but it needs 3 hours…before the time for biology and physic was 3 hours each…but now the government reduced it to only 2 hours each…and the biology lab also shares with the physic lab…so sometimes it collides…My expectation is we have separate lab for biology…"

TA1: "… health-risk is not specifically taught in biology subject…like smoking can cause lung diseases…about food also was inserted…and about the dangerous of food preservative…all were taught indirectly, inserted in the biology subject. No teaching material about bullying…"

TB2: "…about health…we teach about food additive,, food sweetener and preservative in grade 8 and reproductive health in grade 9…we teach about environment in grade 7…but we are confused because there is no teaching material for environmental education…"

The information about health curriculum can go into more detail, however it is not the main point of this analysis because: (1) The implementation issues from the education

and health perspectives that create challenges for the school are more critical to be analyzed in order to identify the future needs for more effective school based health program implementation; (2) Information from the teachers and school principals has shown that the main challenge in implementing a health curriculum is the need to provide the teachers with sufficient health references and resources to support their teaching outcomes; (3) Therefore the issue is not merely about the health curriculum but it is more concerned with the teaching process, access to health information and health related teaching resources for the teachers.

b. Challenges in funding support

In the two schools, budgets to run the health-related activities are too small to enable the school to develop extra activities. Both express that they require more adequate funding to run the health-related activities, such as weight monitoring, developing healthy canteen, health education, creating healthy school environment and other health related activities. In School A, most of the funding comes from the school was used for the school health award and sport competition, meanwhile in School B, the funding was used for the UKS room construction. The government both at district and at national level supported the competition and award programs. Other use of the funding was to supply the health room with basic medicines, first aid tools and medicines.

c. Challenges in teachers' capacity

Not all teachers have a high awareness about health and health-risk behaviour. The teachers in school with limited resources (School B) still think that they need to improve their capacity and understanding about health-risk for adolescents. Some teachers, even the school head master are smoking in the school area. The teachers still assume that the health program is not needed because they can use the Public Health Centre (PHC) if they are sick. They believe that improving religiosity and self-discipline among students are more important. The teachers are not fully aware about the good food quality in the school canteen or food from the street vendors. Their understanding about health is mostly related to hygiene and sanitation.

Quotations from teachers regarding teachers' understanding about health:

TA1: "…important for adolescence health is…first is discipline…religion too, because if we remember about our religion, we will less likely to do something bad. Health program

is not really necessary because we already have PHC, otherwise it will make us more dependable…it will be better if we improve religiosity and discipline…"

TB1: "…ideally in overall should always support the school health program, especially smoking issue, because many of my colleagues are smokers, so it is hard, the students are not allowed to smoke but their teachers smoke, so it is hard to say…"

HB1: "…smoking is not a problem…only two teachers smoke…and there is regulation of no smoking in school…I smoke as well…and had tried to quit smoking but failed…"

TB1: "…the quality of food from street vendor….for health it seems good…students often buy instant noodle…"

TB2: "…obstacle in teaching about health...especially environmental health particularly about rubbish…the student have low awareness…from themselves they already have habit to dispose rubbish anywhere…"

d. Challenges in creating supportive environment

A supportive environment is lacking in these two schools. In this case, the environment issues refer to the social and physical environment. The school with good resources encounters issues regarding the social environment, while the school with limited resources concern issues for both social and physical environment. The social environment is mainly concerning the many street vendors who are selling foods outside of schools, which is a common feature of schools in most part of Indonesia. Most of the students have access to street vendors after school. Although it happens outside school hours, it was still part of the school community, and it will give a negative influence on adolescents health. This means most students will be exposed to unhealthy food from the street vendors everyday after school hours. Unhealthy food from the street vendors implies unhygienic food, use of saturated oil, monosodium glutamate content and non-nutritious food. Particularly in the school with limited resources, because they didn't have a school canteen to provide food for the students and staff, most of the students buy food from the street vendors outside the school during break time and after school hours. This make it difficult for the school to control the eating behaviour among students in school. The school that does not have a school canteen experiences a hard time to manage the school canteen, because this would bring competition and affect income sources of the food providers, including the street vendors that are selling food outside the school.

Quotations from a teacher and an Education Officer regarding the food street vendor and school canteen are as follows:

ED3: "…issues in food at school…we have already banned the street vendors but some of them, the food vendors, they threat us saying that they will burn the school if we ban them selling the food to the students…we often had argument with the food vendor"

TB2: "…so far we don't have school canteen… so it is difficult to control what the students eat in school…we don't have space for the canteen inside the school…"

Meanwhile, the school with good resources had one school canteen that provided hot food and snacks. From the observations, although hygiene was not a big concern in this school but the quality of snacks or food was still questionable (see pictures 7.3). Food hygiene was at least better than the school with limited resources, but not necessarily the best hygiene. As the observation found flies were around the school canteen as it was an outdoor canteen. The school still provides unhealthy snacks such as different kinds of chips which contain mainly flour, monosodium glutamate and colouring. Fresh fruits or juice were not available at the school canteen. The teacher's belief about a healthy canteen refers to cleanliness, safe food and affordability for the students.

Other environmental concerns in the school with limited resources were the physical environment particularly the basic amenities and school facilities. The school had very limited toilet facilities in terms of both quantity and quality. One toilet is available for each male and female student group, and these are actually the toilets for the mosque that was located inside the school. The teachers and other school personnel usually used the same toilet as the students or used the toilet of one of the houses next to the school. Observation described that the toilet was always wet, dark and had an unpleasant odour and no clean towel and soap were available (see picture 6.4). This school also had a limited number of class rooms, and used the library for a classroom as well. Additional rooms were under construction for classrooms and including a room for school health.

Another challenge for school health activities is the community involvement. Both schools analysed for this case study did not actually involve the community in the school health program. The only activity considered to include community involvement in school activities was during religious activities in the Mosque. Only at this time the local community communicated with the school community. However, the schools had not yet used this opportunity yet to improve the school health program.

A quotation from teacher regarding school participation in community activities:

TA1 : "…this school has a mosque…but still under renovation…before that, people from neighbourhood used to go to this Mosque for Friday praying together with students and teachers…"

Prevention and promotion activities were other challenges that are crucial to the school health program in both schools in this case study. Neither school had school health activities that focused on health promotion. The school health programs were mainly focused on first aid training, providing medicine, setting up a room for students who were sick during school hours and other activities that were organized by the local PHC. The schools were passively waiting for the PHC to carry out health related activities for the students. The activities from the PHC were usually health screening (dental, oral health, height and body weight measurement) and health education for particular issues such as HIV/AIDS, drug abuse and dental health.

In the school with limited resources, there were no activities for the school health program. Firstly, they did not have strong support from the decision makers at the school level, which caused less commitment to run the program. The school head master did not put health as a priority, with the academic activities more of a priority than health activities. Secondly, they did not have enough resources to run the program, including human resources and facilities. As a result, only a few students were interested in the school health program as one of the extra curricular activities.

A quotation from the head master regarding reasons of fail to run the school health program:

HB1 : "…we plan to increase the budget for school health program…but human resources are a problem, the coordinator is from the Muhamadiyah foundation, less professional and cannot attract the students to join the school health, and the students get bored and the members become less and less…the coordinator is from outside the school not teachers…"

7.5. Applying the Health Promoting School (HPS) concept

As it has been mentioned earlier in the literature review chapter, the concept of HPS consists of six main areas, including partnerships, safe and healthy environment, skill-based health education, health service, policy and practices and community involvement. In summary, the implementation of the HPS concept is moderate and insufficient in the two schools chosen for the case study (see table 7.1).

Table 7.1. Application of health promoting school concept in school 1 and school 2, Depok, West Java, Indonesia.

Health Promoting School Concept based on WHO (WHO, 2000)	School A	School B
Engage health and education officials, teachers and their representative organisations, students, parents, and community leaders to promote health, families and community groups actively participate in the school health activities; community services, business and organisations support the school activities, school/community projects and outreach of health promotion for school staff.	++	+
Strives to obtain a safe, healthy environment, including healthy sanitation and water; freedom from abuse and violence; a climate of care, trust and respect; social support and mental health promotion; and safe school grounds; opportunities for physical education and recreation.	++	+
Provide skills-based health education by improving curricula to increase students' understanding of factors to enable them to make healthy choices and adopt healthy behaviours throughout their lives; include critical health an life skills in curricula, a focus on promoting health and well-being as well as preventing important health problems, and information and activities appropriate to children's intellectual and emotional abilities.	++	+
Provide access to health services, focusing on services (screening, diagnosis, monitoring growth and development, vaccination, selected medication or procedures) that may be most efficiently provided in the school setting, depending on school resources and mandates; partnerships with local health agencies that will provide services; nutrition and food safety programmes.	++	+
Implements health-promoting policies and practices, including an overall policy supported by school administration and management as well as teaching practices that assist to create a healthy psychosocial environment for students and staff; policies on equal treatment for all students; policies on drug and alcohol use, tobacco use, first aid and violence that help prevent or reduce physical, social and mental problems.	++	+
Strives to improve the health of the community emphasizing community health concerns; participating in community health projects.	+	+

+++ : good; ++ : moderate; + : insufficient (lacking)

The concept of partnership in HPS includes partners or players such as health officials, education officials, teachers and their representative organisations, students, parents,

community leaders and groups, business and professional organisations, community services and other organisations or bodies that relate to school health activities. The national strategy in fact, pointed out that all schools should have a school committee which consists of contribution from all the partners. This school committee should work together with the school community to address any issues related to students academic performance including any extra curricular activities such as health related activities.

Both School A and School B, have school committees, however few health activities have been carried out, especially in School B that has very limited school resources. They have the committee and they mostly work on the activities related to academic issues or school competitions. In the school with better resources (School A) at least the school committee has actively contributed to sport or school competition once a year. However, the level of partnership between the school and other partners was relatively weak as the school simply collaborates with the Health Office and the local Public Health Centre and never tried to collaborate with other community members or organisations. They believed that they only need to collaborate with the health official or PHC to conduct the school health program and they did not know how to invite other partners to contribute to the school-based health promotion activities.

Creating a safe and healthy environment in the school is tough for most schools and is more challenging for the school with fewer resources. The schools need to have strong commitment, sufficient teacher skills, and policy support to enable them to create and maintain a healthy and safe school environment. Schools need proper infrastructure, activities that enable the students and the school community to get access to safe water, healthy sanitation, safe school grounds, safe sport facilities, healthy food at school, healthy human relationships and social support. Again, in the case study, the school with limited resources was concerned less about providing a healthy and safe environment in comparison with the school with better resources. The better quality school had better infrastructure and better teacher health skills and stronger policy or commitment to create a healthy and safe school environment. The school with fewer resources had limited toilet facilities, sport facilities and high access to unhealthy food in the school area. Meanwhile the other school, that had better resources, still had access to unhealthy food, although it was located outside schools, it was still in the school neighbourhood area. The unhygienic food was highly accessible just one step from the schools premises. It was an effective strategy for the food street vendor that they stand exactly outside the school fence,

because they understand that most students will feel hungry and tired soon after finishing school.

Skill-based health education had apparently already been applied in most of the schools. However, the schools were not completely ready to apply the concept, especially in low resources school, because the school did not provide specific teaching material or guidelines for skill-based health education. Though, they indirectly include the health education in particular subjects such as biology and physical activity, the skill-based health education was completely reliant on the teacher skills and awareness to improve their capacity to be able to provide students with basic skills and knowledge on health and health-risk.

National and district strategies point out that the local Public Health Centre (PHC) should be able to provide health care for adolescents in a way that can be well accepted by the adolescents (MOH, 2007). The health service for adolescents should create and welcome adolescents to a friendly environment and know how to make them feel comfortable and open to express their health problems, including for a very sensitive health issues such as reproductive health related issues for female adolescents. The health service contribution in the HPS concept includes activities such as screening, diagnosis, growth monitoring and development, vaccination, selected medication or procedures. The activities that had been done in the case study schools were health screening for new students, medication treatment for sick students during school hours, vaccination for elementary school students and growth monitoring. However, less preventive health support for junior high school students has been given by the PHC and the support is mainly for medication treatment. In addition, the education officers admitted that they provide insufficient numbers of growth monitoring and health cards that can cover all schools. This concept of health service access for school students is basically directed by the health service, but the direction can be influenced by school initiative or needs. Apparently, the school can actively enquire or demand particular health related activities from the PHC according to school needs, to avoid failure to fulfil the school needs. School initiative will encourage the PHC to organize more activities for the school health program.

Health promoting policies and practices in the HPS concept refer to the ability of the school to support the school-based health program with strong policy and to put it into practice. In the school that had good resources, the policy was followed with some health activities, meanwhile in the smaller school the policy was not followed with practice

because of limited resources and teacher's capacity. The school had policies banning smoking inside the school premises, but still some teachers smoked inside the school building. Basically, they had commitment and policies but they were not strong enough to put it into practice and create an effective health program.

Community involvement in health concerns was not satisfactory in both schools either with limited or good resources. The teachers did not understand how to involve the community in school health activities or how to involve the school in any community activities. The schools had school committees, which consist of any individual in their community who were interested in school issues. The members of the school committee include community leaders, professionals, parents, or other community member who are interested in school activities. In addition, schools rarely get involved in any community activities, except in utilising school premises for religious events, government election, or particular community activities. In the HPS concept, the school is expected to concern the community health issues and to use the school as a setting for community health. Local government and health officials sometime involve schools to address emerging diseases such as dengue fever, malaria, SARS, and avian influenza when an outbreak occurred.

Overall, the HPS concept has not been completely applied in schools in the case study. The schools faced some significant hurdles to completely put the concept into practice. The hurdles include limited health competence among school personnel and education officials, limited numbers of local PHC that can intensively monitor the school-based health program and school dependency on the health sector.

7.6. Conclusions

Results in the case study above show that the implementation of a school-base health program in Junior High School in Depok City was different in schools with different resources. In the school that had good resources, which usually had better quality and access, the implementation of school-based health program was better than the school with limited resources. However, the two schools had similar challenges, such as inadequate health curriculum, insufficient funding, lack of supportive environment and community involvement. Meanwhile, in terms of HPS concept, the schools had tried to apply the concept but each school had different experiences and levels of progress.

Hurdles in implementing the HPS concept were limited health competence among school personnel and education officials, limited numbers of local PHC that can intensively monitor and provide guidance for the school-based health program, and school dependency on the health sector.

Generally, this case study concludes that even in the relatively well resourced school, the implementation of the school-based health program was not that effective and faced similar hurdles with the less resourced remote school. In response to challenges faced by the schools, it is useful to look at the success stories of other countries such as Australia and China to learn from their success, especially at the school level. The next chapter will explore the success factors of implementation of school health programs in Australia and China that can be used as lessons learnt for a school-based health promotion in Indonesia in the future.

Chapter 8. Lesson learnt from school health programs in Australia and China

8.1. Introduction

School health programs have become a universal approach to address the issue of adolescent health. Such programs were introduced in the1950s as one of the effective ways to reach the younger population in many countries. Each country has developed their own strategies to address the challenges, which vary in different country. The variation mainly depends on the country situation and capacity, including social, economic, political, and cultural aspects.

As it has been explained in previous chapters, schools still have challenges in implementing the school-based health program due to limitations in resources, even though it is fully supported by strong policy and program strategy from the national or central government. Therefore, learning from other countries may be useful to know how the schools managed to run the health activities successfully, even in schools with limited resources. The purpose of this chapter is to learn experiences from Australia and China in practicing the Health Promoting School (HPS) concept, the recent school-based health promotion introduced by WHO, and to obtain important aspects that are possible to be adopted in Indonesia.

This chapter will describe the implementation of school health programs in China and Australia and explore the lessons that can be learnt to cope with the challenges and issues of school health program implementation in Indonesia described in chapter 7. The information gained for this review is from the local resources and authorities, electronic communications, documents reviews, meetings (education officers), interviews (school principal and teachers) and observations (field visit). Specifically for the data from Australia, the information was collected by the consultation with the Health Officers in Ipwisch and based on reports available in the website. Informants were teachers, head masters and school health coordinators in the selected schools in each country.

Review of HPS practice in Australia is focused on Queensland is experience with the case study of six schools in Queensland. This study only reviews the Queensland experience because of the higher accessibility obtaining the information compared to other states in

Australia. Analysing the HPS practice in six schools during 1998 to 1999 is because that period was the first experience for Queensland in applying the HPS concept and it had been documented and can be assessed globally. Meanwhile, three regions in China, Hong Kong, Macao and Guangzhou, were selected due to specific government systems in each of the regions. The following sections will explore two main aspects: the implementation of HPS in Australia and China, with the focus on strategy, school characteristics, focus of activities, enablers, barriers or challenges, and future plans; and the lesson learnt from HPS practice in Australia and China analysed by SWOT aspect including the Indonesia experience.

8.2. Implementation of Health Promoting School in Queensland, Australia

The Queensland government had introduced the concept of health promoting school in 1998. The program was initiated and organized by the Public Health Unit, Queensland Health. The first pilot project on Health Promoting School was done in Rockhampton. The Queensland government had a pilot project in three schools for the duration of three years.

This program is actually not part of a national program. Government does not provide certain funding support for the implementation of health promoting school. All schools have their own authority to implement the concept of health promoting school. The program runs in collaboration with the Queensland Department of Education.

The program also linked with other related health programs for children and adolescents such as a prevention program on alcohol and drug use, tobacco, injury and safety, mental health, nutrition, physical activity, oral health, sexual health, and skin cancer prevention.

All the information and technical guidelines to implement the health promoting school program are very accessible. They were available on a website and all schools have access to apply the strategy according to their needs and capacity. The schools also can consult the local health office if they needed to.

The Queensland Health Department provides information for HPS implementation that is useful and accessible for the schools. The information is available in the website and includes general information of the concept, case studies in particular schools, a toolbox, web links and information on other particular prevention programs as mentioned in the previous paragraph.

Lessons learnt from Queensland experience in implementing the HPS concept were gained from the case studies provided on Queensland Health's website (http://www.health.qld.gov.au/healthyschools/casestudies.asp). The website describes the variety of experiences in different schools in applying the concept of health promoting schools. The next section will describe the HPS implementation in six schools that represent different school characteristics, including public and non public schools, primary and secondary schools and schools in remote and big city areas.

The information about case studies on health promoting school provided from the website includes information on how to get started, the process implementation, benefits, and reflections. The first part of the case studies explain about the background information of how and why the school implemented the health promoting school approach and then followed by information on the process and activities in each school. The case studies also explain about the benefits of the program for the school and reflections of the school community about the experiences in applying health promoting school during 1998 to 1999.

Information in the case studies describe experiences in six schools that implemented the HPS concept, they are: Brown Plains State High School, Chevallum State School, Eatons Hill State School, Elanora State School, Elliott Heads School, Jundah State School. Table 8.1 summaries the HPS implementation which includes school characteristic, focus of activities, enablers, challenges and future plans.

As shown in table 8.1. Queensland's experience shows how schools with different characteristics managed to apply the HPS concept. The school characteristics include schools that have large numbers of students (up to 1200 students) as well as schools with a very small number of students (less than 100 students). Queensland's experience in HPS implementation also documented the implementation in schools with special characteristics such as schools for aboriginal students and schools for students with disabilities. These schools with different characteristics experienced different activities for different health issues, faced specific enablers, challenges and had certain plans for the future.

Each school focused on different health issues as their priority in implementing the HPS concept. The schools also created particular themes for the activities such as "learnscape", "quality school", "Germbuster", "no hat no play", which made the program more interesting to teachers, students and parents as well.

Some enablers found from the school experience in HPS implementation are positive support from the school community (students, teachers, staff, and parents), contribution from non-government organisations, support from professional groups and seed funding to initiate the HPS activities.

Schools also experienced some barriers in HPS program implementation. The barriers are considered as the challenges for the school to improve the HPS practice in the future. The challenges included human resources capacity, encourage stakeholders, professional groups and wider school communities to contribute in the school health activities, limited funding and geographical aspects of the school location.

Schools seem to have similar future plans which are to maintain the programs for the following year and expand the program for different health issues. The schools also expressed that they will integrate the program into the existing school curriculum.

In general, the schools had a very positive experience in implementing the HPS concept and they also faced some barriers. The benefits are mainly due to increased awareness of health and understanding the concept of promoting health for the school community. The barriers are concerning the human resource capacity and funding. They found that the program took time to implement and may require more people to support to make it more efficient. They understand that the Government does not always provide the funding and this leads them to access non-government funding to support the program.

During the period 1999 to 2002 the Queensland Health and Education Queensland supported and conducted The Western Gateway Health Promoting School Grant Scheme (WGHPSGS) project. This project involved ten schools in the Inala and Ipswich areas to apply the HPS concept concerning the health issues within their school. A study by Rowe in 2004 which evaluated the HPS practice in South-East Queensland, in the WGHPSGS schools, showed that the HPS approach has a positive relationship with school connectedness. School connectedness is known as a cohesiveness between diverse groups in the school community (students, families, school staff and the wider community), which is also as a protective factor for child and adolescents health (Rowe, 2004) can be measured by tolerance of diversity, perceptions of being valued, trust, perceptions of safety and decreased absenteeism.

During the period 2004 to 2008, following the WGHPSGS project, the Queensland Health developed the mentor project, known as a Health Promoting Schools Mentoring

Project (HPSMP). The HPSMP was conducted in eight schools as mentees and seven schools from the WGHPSGS project were acting as mentors (Queensland Health, 2008). The report of the project shows that the mentoring project is useful for promoting the HPS concept to be applied in other schools and schools, mentor and mentee get positive benefits improving health behaviour of school communities.

The report also stated that the main success factor of the mentoring project were strong partnership between mentors and mentees; and sharing of ideas and resources. Meanwhile the barriers included: unmatched mentor and mentee schools, lack of communication, travel distance between mentor and mentee schools and lack of understanding the role of being a mentor (Queensland Health, 2008).

This experience in Queensland reflects the HPS implementation in a well developed country with smaller population and better infrastructure. The experience in a country with larger population may be different, in terms of enabler, barriers and activities focus. The next section describes the experience in China, an Asian country, which has a larger population.

	Browns Plains State High School	Chevallum State School	Eatons Hill State School	Elonora State School	Elliot Heads State School	Jundah State School	School of Today
School characteristic	Located in Logan, Brisbane 1200 students 80 teachers 20 staff	South east QLD Semi rural 200 students 11 teachers	Suburb area, North Brisbane 310 primary students 100 preschool students Multi age	Suburban, Gold Coast 1100 Preschool to year 7 students 85 staff	Remote area, Bundaberg 80 students Aboriginal & Torres Strait Islander	Small school in South West of Longreach, very small town. It has 20 students, five school staff	Small school in Pandoin, Rockhampton. It has 35 students including students with learning disability and chemical sensitive, 7 school staff,
Activities focus	Smoke free school	Bullying, violence, gender "learnscape" "Quality school"	Healthy tuckshop, env care & recycling prog, sun safety, bullying, stranger danger	Toilet hygiene "Germbuster"	Adopt- a Granny/Grandpa social networking	Sun safety program, "No Hat – No Play" policy	Healthy environment (free chemical & natural product), exercise
Enablers	• HPS working party • Students and staff	• School community • Philosophy • School staff	• School community • Non gov inst • Professional groups	• School community • Funding support from QH	Community Liaison Officers Funding support from Wide Bay Health	Intensive support from Public Health Unit, Rockhampton, parents and staff, and accessible information from the QLD HPS network homepage	Highly motivated & dedicated staff, volunteers, parents support, financial support from gov.
challenge	Involving wider range of school community	Need more skill to apply the plan and increase capacity in adopting the HPS program	Involving the stakeholders	The program is time consuming. Lack of time for the students and staff to join the program.	Geographical aspect of the school, limited funding for maintaining, continuing, and expanding the program	Limited human resources in the school	Meet student's individual needs, convince the professionals & agencies
Future plans	Curriculum, teaching, learning, school ethos and env, partnership & services	Continue the program for the next 18 months	Continue and expand the program	Next program on injury and nutrition	Plan to find a way to continue the program with independent funding	Will expand the program for Melanoma Day, maintain the programs, and will integrate the program into the curriculum	Plan to continue the program, focus on involving parents, and apply health in real life in the family

Table 8.1. Summary of HPS practice in seven schools in Queensland in 1998 – 1999

8.3. Implementation of Health Promoting School in three regions in China

The initiation of HPS practice in China was piloted in several big provinces such as Fujian, Shanghai and Beijing. China implemented Health Promoting School approach initially in 1996, which was conducted in Lianjiang county, Fujian province, addressing the intestinal helminth infection as one of the health problems among school age children in China (Shan, Xu Long, 2000). Following the positive outcomes of the project in Fujian, the Health Promoting School (HPS) approach was applied to two projects: tobacco use prevention in 1998 and a nutrition program on 2000, and both projects were carried out in Zhejiang Province and followed by the HPS implementation in Beijing.

In 1996, China also implemented the health program in the school setting in Shanghai, particularly in the Jin Ling Road Primary School. The program was focused on health behaviour standards for students, such as correct posture for reading and writing, carrying handkerchief, washing hands before eating, and a prohibition against dropping litter and spitting (WHO, 2000, Information Series on School Health, Local Action Creating Health Promoting School).

Particularly in Beijing, the HPS approach is one of the school health programs, which was first implemented in 2001. To ensure the program works smoothly, groups of leaders of the program were set up: they included leaders from the Department of Education and leaders from the Department of Health, as well as a Red Cross committee. The Beijing government also takes responsibility for supervising the program. Every district of Beijing has its own team leader.

Certification of HPS is a measure for evaluating education level of a school. There is a form for schools to apply for the certification of HPS. The school that aims to apply for this certification must meet the criteria of this program. Every year a group of leaders organises specialists to evaluate some of these schools randomly. By 2001, 446 schools had received this certification.

The HPS program in Beijing is designed to be applied in all schools, both public and private school and every school has the right to decide whether they wish to implement the program. The next sections will describe the HPS practice in different regions of China: Hong Kong, Macao, and Guangzhou in more detailed information focusing on the

process, enablers, barriers or challenges, and future plans, as the current experience of the HPS practice in China.

8.3.1. HPS program strategy in Hong Kong

The Health Promoting School program was introduced into Hong Kong in 1997. The Chinese University of Hong Kong initiated the program for the education and health departments in Hong Kong. The implementation of HPS in Hong Kong is one of the success stories that shows positive outcomes for the health of the students and the society.

The School of Public Health, Chinese University of Hong Kong established the Centre for Health Education and Health Promotion (CHEP) in 2000. The centre is actively engaged in promoting the Healthy Schools Programme through education, research, services and activities aimed to enhance students' physical, mental and social health through a holistic approach.

Several key projects relating to the HPS concept that have been initiated by CHEP include (1) Hong Kong Healthy Schools Award Scheme (HAS), (2) Healthy Schools (pre-school) Award Scheme, (3) Health Promoting Schools Mentorship Scheme, (4) Colourful and Bright Fruits and Vegetable Project, (5) Smart Kids Fitness Program, (6) Promoting and Strengthening Resilience in Schools: Building on Success of Health Promoting Schools, (7) Capacity Building for the Ethnic Minorities and the Chinese New Immigrants Towards Social Inclusion and (8) Networking and Experience Sharing.

The centre developed the Hong Kong Healthy Schools Award Scheme (HAS) in 2001. The Education Bureau and Quality Education Fund supports the HAS program to promote better health and well being of the students, school personnel, and the community. The schemes program significantly increased school participation in the HPS program and it was extended to pre-school students in 2005. The Centre also has developed a mentorship program for the HPS implementation. The evaluation activities by the HAS program found that the HPS concept brings positive outcomes for health risk behaviour, self reported health status and academic results (Lee et al, 2006).

One example of the project is the dietary behaviour project that has been developed to help primary school children have sufficient intake of fruit and vegetables through creating a supportive school eating environment and culture to gain awareness, make behavioural changes and to support good practice. (CHEP, 2008). The project used

multiple strategies such as capacity building for the teachers, parent ambassador training, student ambassador training, nutrition education teaching kits and resources, dietetic consultation, an exchange tour to California, USA and several school-based activities. These activities included school radio/tv broadcasting, healthy sandwich demonstration, healthy snack sampling, healthy snack promotion campaign, healthy eating award scheme, fruits subscription theme, recipe design competition, cook book publication, organic farm visits, supermarket tours, exhibitions, informative poster display among others. This project involved various stakeholders, such as government sectors, media, and private companies. The project was successful in improving student behaviour toward fruit and vegetable consumption and enhanced awareness of healthy eating among all the school community as well as among other stakeholders and top managers in government sectors.

Another example of the key projects, the Smart Kids Fitness Program was implemented in six local primary schools in Hong Kong in 2007 to address childhood obesity. The aims of this project are to enable the school community to learn effective weight management skills and healthy lifestyles, create a supportive environment for healthy eating and active living and improve parents' knowledge and skills to manage childhood obesity.

In relation to the mental health issues among children and adolescents, CHEP carried out a project to promote resiliency in children in primary school and early secondary school in school, family and community settings. CHEP helped the students with support from parents and teachers, to successfully learn skills to improve their resilience and to gain capacity for everyday challenges.

Concerning the ethnic minorities population, CHEP also carried out a three year project of capacity building for the ethnic minorities and the Chinese new immigrants towards social inclusion. They also have developed a networking program and an international short course on the HPS program that involves many countries in Asia, Australia, America and Pacific islands.

Overall, schools in Hong Kong have more resources and a stronger team to implement and promote the HPS concept. The resources include the university that provides strong human resources that actively support the HPS team work, ensuring adequate capacity for the team from the University as well as the school community. They also have already established team and active networking with international agencies and organisations

around the world. The most challenging issues for Hong Kong are to have all schools in Hong Kong join the HPS program and to gain Government support for HPS program, as well as to encourage the schools to maintain the HPS concept independently. The different experience between Hong Kong and the other two regions, Macau and Guangzhou, is that the initiative of the HPS implementation in Hong Kong came from the University instead of from the Government.

8.3.2. HPS program strategy in Macao

Macau has implemented HPS since 1999 when it was first introduced by the WHO. They started with a one year pilot project in three schools: two public schools and one private school. The pilot project included activities such as training for school teachers and the school head master, health education for the students in classes, competitions among other activities.

The Health Department, particularly the Health Promotion Division, tried to change the strategy to make the HPS program more sustainable. Firstly, the Health Promotion Department continued the program and used the issue based as the entry point. They tried to identify the health issues in the school and found three main behaviour risk factors as key risk factors for student's health. The behaviour issues included physical activity, diet and fighting.

They continued the program and kept trying to improve health awareness and capacity of the school headmaster and school teachers. They also improved networking with the neighbourhood regions such as Hong Kong and mainland China, by inviting them as guest speakers in the training and also to visit some schools in Hong Kong and mainland China. The head of health promotion division stated that the visits were useful for Macau as it helped them more easily to understand and to implement the HPS program in practice rather than only learning from the theories or guidelines. They learnt from Hong Kong and the mainland China experience.

Another strategy was to approach the Education Department to contribute more to the HPS program. They used a top down approach for the policy aspect, which was lead by the Director of the Centre of Health Promotion of the Health Department. The advocacy process started with meetings, the director to director meetings as well as for lower management level. After many intensive meetings the Education Department finally agreed to contribute the financial resources for the HPS program while the Health

Department was responsible for the technical resources. The Education Department provided financial support to any school that was interested in implementing the HPS concept.

It took time for the Health Department to convince the Education Department to understand more about the HPS program. It took about two or three years of advocacy discussions before the education sector finally agreed to give the financial support. The Health Department used current country concerns as an entry point to promote the HPS, such as the fast growing economic situation, healthy city projects, international agency power and success stories from other developed countries.

The Education Department now have a better awareness and understanding of health for the school community. They initiated the 'one doctor for one school' program in 2008. The idea came from the policy of one nurse in a school, but there was a shortage of nurses meanwhile they had an excess of general practitioners who could not find a job. Locating the doctors in the school is one alternative to solve the excessive number of general practitioners.

Some other challenging issues for the implementation of HPS program in Macau were maintaining the sustainability of the program, making the 'one doctor one school' policy become more effective and keeping the school community and education officers sufficiently aware of health. The Health Department needs to use extra effort and energy to keep the program sustainable, by organizing new and different activities on a regular basis, and to develop the capacity of the school community particularly the school head master and teachers. The 'one doctor one school' policy is still a challenging issue because it takes time for the doctors to change their perspective to broader public health issues rather than on clinical treatment in the school community. Another challenge is that they work with a very limited number of staff, hence needing more time for them to reach targets.

The Health Promotion Department plans to extend the HPS program for the younger and older age group such as for kindergartens as well as for the secondary schools in the future. They also are developing a longer term HPS program strategy, being a five year plan instead of a three year plan.

Generally, the implementation of the HPS concept in Macau is promising, as it has substantial support from the Government. Strong Government support is one of the most

important factors for HPS implementation in Macau. Another important factor is the very good relationship or partnership between the health sector and education sector within the Government. The Government, particularly the Health Promotion Centre, put the HPS concept as one of the priorities for adolescent health. The health sector has made very intense efforts to get support from the education sectors and successfully enable the education sector to provide financial support for the schools to implement the HPS concept. The most challenging issues in implementing the HPS program is having the schools to participate in the program, as well as to gain and maintain the health capacity and awareness of the school community, including head master, teachers, staff and parents. Both health and education sectors commit to maintain the program and give more contribution for a longer period of time.

8.3.3. HPS program strategy in Guangzhou

The HPS program in Guangzhou was introduced in 1995, by the Guangzhou CDC as one part of the school health project. It was a one year project targeting nutrition for students. Following on from the pilot project, the Government began to implement the HPS program in 2003. The health sector and education sector worked together in developing the policy, activities plan and team work.

Out of 1900 schools in Guangzhou, 11 schools participated in the HPS program in the beginning, The number of schools engaged with the HPS concept is increasing, and now has reached 74 schools in 2009. Most of those schools are located in urban areas, only two schools are located in rural areas.

The implementation of HPS in Guangzhou is supported significantly by the local Government, particularly the Education Department, Public Health Department, Centre for Disease Control, City Council and is also supported by the health professional association.

Several strategies they used in promoting the HPS concept include: making use of professional resources to spread skills on the HPS concept among the school community; and to learn from other regions' or states' or countries' experiences. They learnt from Beijing as well as from Hong Kong. They also promoted the HPS concept by providing school evaluation activities and they developed guideline and training for the teachers and doctors to develop a better understanding of the HPS concept. They also used China's special events such as Asian Games to promote HPS program.

Guangzhou has sufficient funding from the government to implement the HPS. Initially, the financial support was mostly from the Government and very little from the private sector. Although the Government did not continue to provide the funding, the school can still use the existing funding resources from the school. The national Government still provides funding for the guidelines for school health education. School health education is compulsory for one semester for all schools in China.

The Government requires more effort and resources for the HPS implementation in rural areas and for maintaining the collaboration between different divisions and sectors. The availability of HPS working groups bring a significant contribution in the implementation and collaboration.

Two other challenging matters for HPS implementation relate to the teachers' mindset and implementation in rural schools. It is difficult for the HPS team to gain teachers' understanding to change their mindset toward the substantial relationship between health and a student's academic performance. Most of the teachers are still focusing the activities more on the academic performance neglecting the health of the students and the school community. The HPS team has to use extra effort to encourage the schools in rural areas to implement the program because the schools have limited human resources and facilities, while the team has less access to the schools. The schools in rural areas are still focused on the school physical development such as buildings and facilities. For the initial stage, the HPS team first needs to change the mindset to be more aware about health of the school community.

In Guangzhou the concept of HPS program has been applied in the last five years, and they have developed some plans for the future. They plan to keep increasing the number of schools that will participate in the program, develop the evaluation standard and include the concept in the school policy, build capacity in particular for the evaluation activities, develop guidelines for schools to carry out research, and plan to use the major events such as the Asian Games 2010, to promote HPS. They also hope that the HPS program can be included in the national strategy for the whole of China. They are also committed to share experiences in implementing the HPS program with other countries.

Similar to the Macau experience, the implementation of the HPS concept in Guangzhou was also initiated by the Government sector. The difference with the Macau experience is that the HPS program in Guangzhou is leaded by the Education Bureau. The Education Bureau at City/Provincial level in Guangzhou has several divisions such as a research

department, student work department, student health department and school facilities. The HPS program is under the student health department. Another strength of the HPS implementation in Guangzhou is the fact that they have a school doctor policy. All schools in Guangzhou have one doctor in the school. The school doctor is responsible for the health education of the students and other school communities. However, the school doctor program in Guangzhou may lead to more of a treatment or medication approach rather than prevention or behaviour approach if the doctors are not provided adequate understanding and skills about disease prevention, healthy behaviours and the health promotion concept.

8.3.4. Schools experience in implementing the Health Promoting School program in China

Although countries around the world have used the same standard guideline of HPS implementation strategy developed by the World Health Organisation, different schools have different experiences in implementing the HPS program. Table 8.2 summarizes the different experiences of HPS practice in different schools in China.

Table 8.2. School experience in implementing HPS program in Hong Kong, Macau, and Guangzhou

	School 1 Hong Kong	School 2 Hong Kong	School 3 Hong Kong	School 1 Macao	School 2 Macao	School 1 Guangzhou	School 2 Guangzhou
Program priority	Security and first aid, healthy diet, anti smoking, disease prevention, exercise	Healthy environment	Healthy campus	Injury, life skills, infection.	Healthy eating in school	Physical and psychological health, green environment	Oral health, eyesight, adolescent health, mental health, physical exercise
Strategy	School policy on health, student health services	Health education in the curriculum and normal school operation, teaching by stressing the religious value, tv station project	Stationed school nurse, student health service program	Health screening, health education, counselling, liaison with health network, seminar/lecture for parents	health education, counselling,	Involve professional medical doctor, community, and health department, individual counselling and group discussion for students, lectures and seminars for parents, research, school award, one doctor in school	Health education in classroom, policy and activities development, develop individual skill, health check for teachers, writing competition, collaboration with Red Cross, school award.
Enabler	High motivated teachers and school personnel	Strong support from the headmaster Good relationship with the university	School has very motivated school principle. The politechnic school of nursing gives great contribution to the school. The funding for the all the activities provided by the pilot project.	Doctor in school	Doctor in school	Government support in funding and technical aspects	Government support in funding and technical aspects

	School 1 Hong Kong	School 2 Hong Kong	School 3 Hong Kong	School 1 Macao	School 2 Macao	School 1 Guangzhou	School 2 Guangzhou
Barriers/challenges	Have to write the proposal to apply for the funding for future activities		Have to apply for funding to continue the program	Changing the community behaviour		Takes time to understand the holistic meaning of health. Society still concerns more on the academic	Unhealthy environment outside of the school. Need longer time to educate the parents.
Future plan	Try to continue the program by applying for extra funding.	Try to close the gap between health and education, relate career development to health for the older students	Apply for finding for the next programs	Need to teach about moral, health, emotional, and appreciation		Share resources between schools in the same district. Promote health by strong history and culture value. Will focus the school evaluation indicator on both academic and health performance.	Plan to work harder to get the gold medal

As it can be seen from Table 8.2, schools in the three regions in China had different program priorities, which were mainly focusing on environment, injury, mental health, eyesight, oral health, diet, smoking and physical activity. Each school also has a particular strategy to address the health risk issues of the students. In general, the strategies were focusing on health education, health service, policy support, health screening and school award. One of the typical strategies in one of the schools in Hong Kong was putting health into the religious value as the school was built by a religious organisation.

Enablers in implementing the HPS concept in China include strong support and motivation from the school head masters and teachers, as well as funding and technical support from the government. Particularly in Macao and Guangzhou, they have a school doctor and nurses program. Support from the school head master and teachers are very significant in placing health as part of the learning process in school.

A quotation from a school head master in Hong Kong regarding support from the head master and teachers to maintain the HPS practice in school:

> *"… If you manage to get health into the education paradigm it is easier, but if it stands apart from the normal school education operation, that will be a problem, the teachers tend to reject, it is none of our business, done by the doctors, nutritionist, or others. That's my strategy, I need to convince not only myself but also the teachers, why you doing this, what is your concern, it is part of our job. I have to convince the management team about health issues. So if they are more health conscious they will have an impact to the school policy, if they don't have the health consciousness it is hard. Every school principle have to fight. I always say that health is related to our learning if it is not related to our learning it is not our business."*

Particularly in Macao, the school doctor, as the enabler of school health program, understands the health concept for the school community. A quotation from the school doctor in Macao:

"…First one, health promotion and prevention. Infection in the school is number one problem, so first thing is teach hand washing, install the sink, how to wash the wound, who is the person I first be friend, the cleaning lady… I told the cleaners that they are the most important person in the school for infection prevention… You have to let the teacher know, the social workers know and the community…"

Schools faced challenges in the HPS implementation, such as getting the funding from government, increasing health skill and involving school community and environment. The schools in Hong Kong pointed out that obtaining funding support for the school

health activities requires extra effort and time. The school teachers in Guangzhou mentioned that they do not have sufficient understanding about health and need times to improve their health skills. The school in Guangzhou also illustrated that the environment outside the school was not healthy because the school was located in a business area where some shops sell cigarettes and alcoholic drinks. The schools also mentioned complication involving parents in school health activities.

A quotation from the school doctor in Macao regarding the challenges in school health program implementation:

"…How you get the whole environment change. It takes time. Health promotion is talking about changing community, changing priority, changing system, and it takes time, change is hard, change requires you are willing to suffer, people will not like that…"

A quotation from the school head master in Hong Kong concerning the challenges in HPS implementation:

"…To help the teachers see the health promotion is part of our world…and help them relate health promotion to general operation of the school or general teaching of schools…teachers can see what health promotion has got to do with the learning of math, learning of academic subjects, the raising of standard…"

The schools have plans to maintain and expand the school health activities. In Hong Kong, the schools plan to apply for extra funding from the government or from other financial resources. In Macao, the school doctor plans to increase students' skills in health, as well as in morality, emotional and respect. In Guangzhou, school history, gold medal and resources are the focus for the future development.

A quotation from the school doctor in Macao regarding the future health program in the school:

"…We need to teach moral, health, emotional, appreciation…"

Quotations from school head master in Hong Kong regarding funding and future plan:

> *"…As you can see we don't make the health education as something extra, we try to make it as daily normal work of school , we can use the existing funding for the education from the government for the normal operation. We still have to look for, sometime we approach the school management committee for funding, for example we have $HK 100,000 ready for the school to reach the gold award of HPS. In HK we are aided schools, so the funding is from the government and the church as charitable organisation. We can get the funding from the parents as subscription fee or activities fee they pay, just small portion…"*

"…After implementation of the projects we tried to include the project into our normal school operation, like the tv station project. The tv station project if you look at it from the health point of view, it can be used as a good instrument for the health promotion school program…"

A quote from the school principal regarding the future plan:

"... we will try hard to get the medal award.... from silver to gold medal...getting the medal award bring more students to enroll in our school..."

8.4. Lesson learnt from Queensland and China

Reviews from the six schools in Queensland and seven schools in China result in certain important aspects of the HPS practice as lessons learnt. Table 8.3. provides a Strength Weakness Opportunity and Threat (SWOT) analysis of the HPS practice in Queensland, three regions in China and in Indonesia .

8.4.1. SWOT analysis of school-based health promotion in Queensland

The practice of the HPS concept in pilot areas of Queensland has shown a very positive impact for the students and school communities. The HPS concept was introduced by the local public health unit, which actively encouraged the schools to participate in the program. The public health unit in Queensland Health provided an open opportunity for schools to participate and selected certain schools for receiving funding support. The schools had to submit the proposal of particular health issues that they want to address to the local public health unit in order to obtain funding.

Overall, the schools that participated in HPS project in Queensland had several strengths contributing to the success of the program (Table 8.3). The strengths included adequate motivation from the school personnel, school independence to continue the project and adequate monetary resources from the government as a starting point. These strength factors enabled the schools to maintain the project well and to prepare future health programs in the school.

Although the HPS practice in Queensland has been shown to be successful in term of health outcomes, this study found approaches that were considered as weaknesses in comparison to references and global strategy guidelines. Single issued-based project activity is one aspect that may weaken the program. The issued-based project is a good strategy to address a particular health issue if it is developed based on the school priority. However, in some circumstances, schools may have more than one health issue to be concerned as certain health issues may be related to each other. Therefore, a multiple

health issue-based strategy rather than single issue based will be more effective for the school setting. This is considering that the school term lasts for one year for each grade which allows teachers to address several related health issues that commonly occur in adolescents on a weekly, monthly or quarterly basis.

Literature review in the chapter two and chapter three have shown that some health-risk issues were common among adolescents and some of them are interrelated, which should be addressed by the schools, such as smoking, unhealthy diet, physical inactivity, emotional/mental health problem, unhygienic behaviour, unsafe sexual behaviours that contribute to HIV infection, other STIs, and unintended pregnancy, violence and unintentional injury, alcohol and other drug use. As an example, when schools use a strategy of health education or campaign, they can focus the content not only on one health risk issue but also consider other health risks at the same time.

The other aspect that can be considered as a weakness was the fact that the health sector contributed more as a leading initiator of the project, than the education sector, which means the health sector had more responsibility and sense of belonging for the program than the education sector. Meanwhile, the HPS concept basically, tries to share equal contribution between education and health, in order to improve health awareness among the education sector as well as to put health as an important part of the learning process.

The analysis of HPS implementation in Queensland also found several opportunities for schools for best practice in the future. The opportunities for the school include significant support from the government and community. The state government and federal government provided strong financial and technical support to initiate the program. If this support continues, the schools will be able to maintain and improve the program. Another opportunity was the active contribution from the local community. As an example, the elderly community was actively involved in the health related activities in one school and other schools also involved local non-government organisations and professional groups to provide technical assistance for the health program in the school.

In terms of funding, the HPS implementation also faced threats, as it was only one project that received funding. The schools may stop the project if they don't have sufficient budget to continue or expand the program in the future or to continue the program with existing budget they have or by trying to maintain the program without extra funding. Another threat was political change at a state level that may lead to different leaders who

may wish to encourage different concepts. The concepts may either support the existing HPS concept or be different from the HPS concept.

As a whole, lessons learnt from the Queensland experience in HPS practice directs the way that the government sector encourages the school, empowers the local community and pays attention to all types of schools such as remote schools or large schools. The Government sector tried to encourage the schools to actively participate in the HPS project and gave them sufficient contribution to interest them to continue the project independently. Involving local groups in the community also provided a positive example of empowering the community in the PHS practice. Giving equal opportunity and support for the smaller or remote schools also showed positive contribution to the HPS practice, because it showed that even in smaller or remote schools the HPS practice can be effective and useful.

8.4.2. SWOT analysis of school-based health promotion in China (Hong Kong, Macao, Guangzhou)

The implementation of Health Promoting School program in Hong Kong, Macau, and Guangzhou have their own specific experiences depending on their regional characteristics. Each region has specific strengths, barriers, weaknesses, challenging issues and future plans. In general, they have had positive outcomes from the implementation of the HPS program.

Hong Kong started the HPS program earlier than Macao and Guangzhou. Hong Kong has more experience in HPS implementation, therefore Macao and Guangzhou have learnt a lot from Hong Kong. This may be related to the strong support from the academic sector such as the Chinese University of Hong Kong.

In general, the implementation of HPS in the three different regions has varied depending on the resources, the leading institution or organisation who initiate the program as well the governmental system characteristics. For a region like Hong Kong, that has sufficient resources and capacity, the HPS program does not necessarily have to be initiated by the Government. Meanwhile in the situation like Macao and Guangzhou, it might be more efficient if the program is lead by the Government. This is because of different government's role in each region. In Macao and Guangzhou, the government is responsible for most of the health programs and has stronger power to make it sustainable and to grow, meanwhile Hong Kong has a strong university that has the capacity to

initiate and develop the program in collaboration with the local government. Basically, the HPS implementation requires collaboration from all related sectors both from Government institution and non government institution, but the level of contribution from those related sectors will vary depending on the country or city or regional situation and resources.

As can be seen in Table 8.3 the SWOT analysis shows Macao and Guangzhou had similar strengths such as strong support from government sectors (health and education). The strong support included technical and funding support. Particularly in Guangzhou, high motivation by the school was also the strength of the program. The high motivation was mainly due to getting an award from the government, which leads to better school reputation and may increase the student enrollment. In Hong Kong, university support and school leader capacity were the main strengths of the program. This was because the university worked more actively to provide technical and funding support for the HPS implementation rather than the Health Department. The school leaders had sufficient capacity regarding health and put health as important part of the learning process in school.

Less government support in Hong Kong was considered as the weakness of the program because the lesser the support from government the stronger the school capacity needed. Especially the state school, they normally work under the government sector and significant contribution from the government will encourage the school to run the program. Meanwhile, in Macau and Guangzhou the weaknesses concern the health capacity of school personnel and partnership with non-government organisation.

Particularly for the Hong Kong region, the implementation of School Health Program reflected a very commercial economy driven in the region as the government tried to go promote free market system for the schools to decide adopting the HPS concept. Having said that, this can be dependent on school readiness, capacity and resources, to be able to apply the HPS concept. In other words, this can be either a weakness or a strength of the school-based health promotion practice.

Each region has different opportunities in practicing the HPS concept in China. Opportunities of HPS implementation in Hong Kong includes linking the school with international experts or organisations to improve school capacity on health. Macao has

more opportunity in expanding the program covering senior high school students as well as kindergarten students. Meanwhile the opportunity of HPS practice in Guangzhou includes using specific school characteristic as a tool to promote health to the school community, for example the school used the historical background of the school building as the activity's name and promoted 'healthy school environment to maintain historical aspects of the school' to attract attention from the school community. Another opportunity in Guangzhou is the government support for rural schools in applying the HPS concept.

The HPS practice in Hong Kong faces a threat in terms of less sustainability of the program. This is because sustainability of the program relates to strong support from the government. Governments usually provide legal aspects of the program that leads to routine funding and technical support. A threat in Macao is failing to encourage the school to participate in the HPS if the education and health sectors are not trying hard to convince the school to join the program. Meanwhile in Guangzhou, the aspects that may threaten the HPS program is the lesser support from the community and non government organisation. Lack of community involvement may lead to failure to address health issues in the community. The award system can be both as a strength and a threat of the HPS program. It can be a threat if the school only focuses on the output and ignores the process of obtaining the award medal. The process of obtaining the award is more important to gain sustainability of the program. Also especially for poor school it is more important to understand the process but not necessary have to win the medal award.

8.4.3. SWOT analysis of school-based health promotion in Indonesia

The strength of the school health program in Indonesia was focusing on the governments policy and commitments that included four Ministries. These policy and commitments are important foundations to maintain continuity of the program, and need to be followed up with effective practice and evaluation programs. This strength is facing challenges as Indonesia is still struggling in turning policy into effective practice.

It is very challenging for Indonesia to turn the school-based health promotion policy into practice because of issues in human resources, school capacity in health and a superficial relationship between education and health government sectors. The Indonesian government needs to use other potential opportunities to counter those weaknesses.

Community empowerment is an opportunity in developing an effective school-based health promotion. It is part of the Indonesian culture to involve community in most of the activities. The community can be given a significant role to synchronize the communication or relationship between health and education offices. The communities' role can also addresses the issue of limited funding in conducting the health activities in schools by making use of the health professionals in the local community to voluntarily support the activities.

Threats in the implementation of school-based health promotion in Indonesia include total dependency on government support and a large number of schools with very limited resources. Government support is necessary for the sustainability of the program, but total dependency or too much reliance on government support in terms of financial aspects can be a threat to the program, as the program will stop as the government stops the funding. In this case, leadership and political aspects may play important roles in order to maintain the government support. As the Indonesian government budget is still vulnerable due to political situation, total dependency on the government funding will be risky. This is because of the change in leadership as part of political aspect may leads to change in government program prioriy including in health. It will be worth to considering non-government funding as an alternative resource for the sustainability of the program.

Table 8.3. Analysis of Health Promoting School in Hong Kong, Macau, and Guangzhou

	Queensland (Australia)	Hong Kong (China)	Macau (China)	Guangzhou (China)	Depok (Indonesia)
Strength	• State government support (Queensland Health and local Public Health Unit) • Highly motivated school personnel • School independency or initiative to continue the project	Universities support, School leadership	Government support (health sector) and good education – health partnership	• Government support (education sector), • High motivation in getting the award/gold medal, school doctor.	• Policy support • Involve four government Ministries
Weakness	Project based activities	Less government support	School staff capacity	Partnership/collaboration with other non government sector.	• Limited human resources • Lack of school capacity • Weak relationship between health and education government sectors
Opportunity	Active community involvement	Link with the international experts,	Many professional groups that can support the program	Government targeting the program more for the rural school	Community empowerment
Threat	Maintain the sustainability of the program without funding support from government.	Less sustainability of the program due to less support from the government	Load of each sector (health and education), maintain the partnership between health and education sector, Convincing the schools	Less community participation and other related non government stakeholders involved in the program Award oriented	• Total dependency on financial support from local government and school commitment

Overall, the main lessons learnt from Australia and China to implement the HPS concept includes several points as follow :

- The initiation of the program can be either from the health programmer in the government sectors or from the academic institutions. More importantly, the initiator should be able to connect to the related stakeholders from government or non government institution, organisations and communities, to make a stronger and more sustainable program.

- Community participation is an important part of the HPS practice. Especially in schools with limited resources and capacity, an active contribution from the local community can allow schools to run the health related activities such as involve nutrition association or other health related professional groups in healthy diet activities is schools, physical activities, anti smoking or other health related activities. The community includes teachers, school staff, students, parents, local community figures, leaders and groups.

- Partnership is very crucial to run the HPS concept, in particular the partnership between the health and education sectors. Effective communication between partners is necessary in order to fill the gap in HPS implementation in school.

- At the school level, a strong commitment, support, capacity and motivation, from the school principal and other school personnel make a very positive impact for the program initiation and sustainability.

- Funding has been mentioned as one of the barriers in both Australia and China HPS practice. This means even with well developed government infrastructure, funding is still one of the issues. Having strong support from the school community and other non government sectors should be able to address funding issues in implementing the HPS concept.

8.5. Conclusion

Australia shows different experiences in HPS implementation from the three regions in China. The differences are mainly concerning the program initiator or facilitator, activities strategies, enablers, barriers and future plan. Implementation of HPS in the Queensland experience was reviewed as the example of an Australia experience in HPS practice, and three regions: Hong Kong, Macao and Guangzhou are examples in China.

Similarly, the HPS practice in Queensland, Macao and Guangzhou, were initiated by the government, meanwhile academic institutions initiated the program and plays a more active role in Hong Kong. The strategies in schools were health education, policy support, community participation, and health professional approach (doctor or nurse in school). The enablers include strong government and school support, active community participation and good partnership. The barriers mostly related to limited funding and human resources at school level, and how to maintain and improve the program with limited school capacity and resources. Most of the schools planned to maintain the program and tried to develop more health projects.

The lessons learnt of HPS implementation from Australia and China concerning several key points such as: either health or education or both, or academic institutions can initiate the program; active community participation and strong partnership are necessary to run the program effectively; support, motivation, adequate skills of school personnel are necessary for schools to apply the concept; schools with the support of the community should be able to address the funding issue in running HPS program. Parts of the lesson learnt from Australia and China that are possible to be applied in the Indonesian situation, particularly in Depok, will be discussed in the next chapter, the discussion and recommendations chapter.

Chapter 9. Discussion and recommendations

9.1. Introduction

This study has found important findings focusing on the needs of the school health program, lessons learnt from different countries, strategy evolution and challenges in school-based health promotion practices. Previous chapters have explained health-risk issues occurring in adolescents, the schools' capacity and experience in the implementation of school based health program at the district level in Depok, what efforts and strategies the district and national governments have generated for the school-based health program, including the gaps that caused the schools' failure to implement successful school health program. Following on from the findings of previous chapters, this chapter aims to discuss the needs, challenges and future direction of school-based health promotion in Indonesia.

The next sections will discus the needs for school-based health promotion in Indonesia, strategy evolution and challenges, lesson learnt from different countries and future directions as well as an alternative strategic model for a more sustainable school-based health promotion program in Indonesia. Finally, the discussion and proposed strategic model will be addressed to fill the gaps in school-based health promotion practice in Indonesia as well as for the further study.

9.2. Discussion of major findings

Several main findings of this study are focused on the needs for school-based health promotion in Indonesia, challenges and future direction in implementation of the school-based health promotion program.

9.2.1. Needs for school-based health promotion in Indonesia

The needs for school-based health promotion in Indonesia were categorised into types of needs such as normative need, compare need, expressed need, and felt need. Findings from this study showed a need for school-based health promotion from different perspectives both from decision makers and users or clients. Needs from the decision makers were generated from health and education sectors at national and district level. This study summarized the needs according to four types of need that were mentioned

earlier. Table 9.1 below describes the normative need, felt need and expressed need of school-based health promotion from the perspective of decision makers from the health sector and the education sector in the national or central government office.

Table 9.1. Needs toward school-based health promotion from decision makers perspective in the health and education offices

Type of need	School-based health promotion from Health Sector	School-based health promotion from Education Sector
Normative need	the need determined by the experts: - more integrated strategy that not only focuses on first aid management but also directs to prevention and promotion aspects in school setting	the need determined by the experts: more collaborative strategy and actively invite other related sectors.
Felt need	The health officers feel : - Need at least one focal point or coordinator for school-based program in PHC and district/provincial health office to make the program more effective. - Need clearer system and structure in the district level - Need capacity building activities at central and district level to improve skills in technical and managerial aspect of school-based health program.	The education officers feel: - Schools need to more actively collaborate with health sectors and local government - PHC should increase the coverage of health screening program - Need a more equal work load with health sector to produce the students health card - Need stronger advocacy activities to the local government to implement the school health program. - Need to give more attention to particular provinces (Sulawesi, Maluku, Papua)
Expressed need	The decision makers from related divisions and institutions had regular technical meetings and seminars to improve the school health program	Involvement in collaboration activities with other related institutions to address health issues in students.

9.2.1.1. Needs from the health sectors' perspective

The needs from the health office sectors were identified based on the evidence that shows the policy and guidelines provided by the experts were not followed up with effective practice at the school level. As showed in Table 9.1 the preliminary survey in Depok showed that only one out of 29 junior schools ran the school-based health program effectively.

The experts need is mainly concerning the need to develop an integrated strategy to address health issues for adolescents in the school setting which is not simply addressing the first aid activities. This is because the school community (teachers, students, and

parents) believed that the UKS or school health activities in school were activities to help students if they got sick at school (see table 5.7 in chapter 5). Therefore it is necessary for the experts to develop the guideline for school-based health program that also concerns preventive aspects as well as the first aid and includes the health-risk issues such as prevent smoking, provide healthy food, healthy environment, hygiene and sanitation, unintentional injury and mental health related health-risk.

The existing guidelines (see appendix 1) only include general information that is used as the evaluation or assessment indicator for healthy schools, but they do not provide the tools to accommodate the schools in applying the guidelines especially for the minimal strata indicator. The minimal indicators (see appendix 1) for school health program do not contain details and clear guidelines and tools that address the health needs of the students. As an example, the guidelines describe that in the minimal strata, the school should have a school canteen in, but it does not mention in detail specific healthy school canteen standards. This guideline is for the minimal strata, therefore the school with very limited resources in the remote or village area in Depok do not understand how to manage a healthy canteen in the school. Healthy canteen standard should be included in the minimal or basic standard indicator of the school-health program for adolescents in order to enable and encourage schools, especially the schools with limited resources, to understand and applying the school-based health promoting concept.

From the perspective of the program coordinator, the health officers in the national office felt that they need a focal point at the district level in both the education and health office as well as in the school, to be able to facilitate and bridge the communication gap between national and district government offices. They also mentioned the need to modify the structure in the health office at district level in order to avoid complicated and time consuming administrative procedures to run the school-based health program, which lead to delays in the program implementation. The health officers also mentioned the need to improve the capacity building of the health workers in the central and district office particularly to enhance skills in technical and managerial aspects.

The decision makers from related divisions in the Ministry of Health (MOH) were participating in regular meetings and seminars to improve the school-based health program. This expresses the need of the decision makers to ensure commitment and agreement by different sectors under MOH for school-based health program in the future.

9.2.1.2. Needs from the education sector's perspective

The need from the experts' perspective in the education office is focused on collaboration issues. They believe that a more collaborative strategy that actively involves related sectors will lead to more effective school-based health promotion activities. The education officers at the national level think that there was a lack of coordination and follow up action at the district level. The Centre for School-Health Program in the education office at the national level mentioned that they had already provided training and guidelines at the district level even though the centre does not have authority to make the program compulsory in the school. An effective collaborative strategy involving the national education office, district education office, schools and other related non-education organisations or institutions is necessary to avoid a complicated government bureaucracy organisational structure.

The education officers felt that schools need to collaborate more actively with the health office at the district level. They suggested that the schools to invite or request the local PHC to assist the schools to organise school health activities. This will accelerate the implementation of school-based health promotion rather than passively waiting for the PHC to visit the schools.

Other needs felt by the education officers are more schools to have health examination or screening for new students, more equal work load between the health and education sectors, stronger advocacy to the local government for a more sustainable program and a need to focus on the under-developed districts in Indonesia such as in Sulawesi, Maluku and Papua. The education officers also to keep actively involved in activities in collaboration with other stakeholders.

This study also found needs from the school community perspective, particularly from the students, teachers and parents perspectives. Table 9.2. below shows the summary of needs from the different perspectives.

Table 9.2. Needs toward school-based health promotion from the school community perspective

Type of need	School-based health promotion to prevent health-risk behaviour in adolescents
Normative need	The needs determined by the experts in the health and education sector are: - To do more advocacy to local government as well as donor agencies to increase budget alocation to run health-related activities in schools. - Capacity building of healthy behaviour for students, headmasters & teachers. - Capacity building for technical and managerial capacity for health officers. - Stronger partnership between related institutions and players.
Felt need	The adolescents feel: - Need stronger collaboration and communication between parents & students - Want teachers to provide regulation about health behaviour - Need more education about religion - More active school-based health program (UKS). - Need cleaner toilets in school. - Want school canteen to provide healthy food - Schools should prohibit food street vendors selling food inside and outside school The teachers feel: - Need more education on religion and discipline for students - Need routine activities of health screening, counselling, health care, improve nutrition status of students - Need more safe and proper sport facilities in school - Need Routine monitoring from FDA for school canteen and food street vendor The parents feel: - Need more health education related to drug abuse, sexual behaviour, nutrition, physical activities, balance between study and rest. - School should provide health education for parents
Expressed need	- Most of the students to join the exercise group for extra curricula activities - Around 60% students who smoke want to stop smoking - Top ten health-risk behaviours among adolescent male students aged 12 – 15 years were: **1. Passive smokers** **2. Consume food from street vendor** 3. Ever smoke 4. Consume fruit less than one or never in a day 5. Feel neglected by parents 6. Ever got unintentional injury 7. Consume vegetables less than once or never in a day 8. Not everyday brush teeth 9. Never eat breakfast before go to school 10. Feel lonely, sad and worried Top ten health-risk behaviours among adolescent female students aged 12 – 15 years were: **1. Passive smokers** **2. Consume food from street vendor** 3. Feel neglected by parents 4. Consume fruit less than one or never in a day 5. Feel lonely, sad and worried 6. Never eat breakfast before go to school 7. Consume vegetables less than once or never in a day 8. Not everyday brush teeth 9. Ever got unintentional injury 10. No physical activity in typical week
Comparative need	The schools that run School Health Program have school canteen which provide more hygienic foods

The needs from the school community perspective can be seen in Table 9.2. Similar to the needs defined by the decision makers and experts, the school needs stronger advocacy, capacity building and partnership to enable running the school health program in a more sustainable way. Meanwhile the needs felt by the students are slightly different compared to the needs felt by the teachers and parents. The students felt that they want closer communication with their parents to make them feel protected and cared for by their parents. Interestingly, students also mentioned that they felt that it is important to learn more religion at school, to prevent students trying negative behaviour such as smoking, premarital sex and drinking. This need was raised by students who probably have a stronger religious understanding or students with positive behaviour, but the response may be different from students who have deviant behaviour. The students, teachers and parents felt that health education is important for adolescent health. The students and parents felt that they need better school facilities including healthy toilets and healthy school canteen.

In term of health risk issues, the need assessment analysis shows that the two main health risk issues in both male and female adolescents are passive smoking or involuntary smoking and consumption of unhealthy food from street vendors. Particularly for male students, ever smoke cigarettes is one of the health-risk issues which is not common in female students, meanwhile physical inactivity occurred as health-risk issue among female but not in male students. Gender difference in health-risk issues among adolescents should be considered as males and females have a different issue priority.

Observation in the schools showed that schools that have conducted the health activities have a cleaner school environment, including the school canteen, classrooms, and toilets. The schools that have not yet applied the school health program have a need to create a healthy environment and facilities.

Overall, the needs towards school health program defined by the school community can be categorised into three categories: health capacity, social and physical environment, and gender difference in addressing health-risk. Looking at those needs there are some challenges in the implementation of school-based health promotion in Indonesia. The next section will describe the need expressed by the students in terms of health-risk issues and how to link those health-risk issues with the school-based health promotion program development, specifically to utilise the evidence in convincing decision makers.

9. 2. 2. Utilizing the identified health-risk as evidence-based information for advocacy process.

The health-risk issues presented in Chapter 5 are some major health-risks that occurred in adolescents in Depok city. The health-risk related behaviours found in the survey were smoking, diet related behaviour, hygiene, mental health related behaviour, and injury. In most of the government sectors in Indonesia, statistics are still very important and give a very strong contribution and influence to decision makers and policy makers. This section will talk about alternatives to utilising statistical data of health-risk issues mentioned above.

The health-risk issues in adolescents can be associated to social pressure, environment and personal factors that are interelated to each other (Henderson et al, 1998). In term of health-risk issues, the findings of this study show that the social pressure includes the protection factors that also relate to mental health aspects, such as students felt sad, lonely, worried and attempt suicide (15.8%) as well as feeling neglected by parents (30.6%). Personal factor in adolescents such as social and physhological development is another aspect that leads to risk taking behaviour. This can be shows from the smoking behavior figure that is high among male students (39.2%). The physical environment determinant factors of health-risk in adolescents are related to dietary and hygiene aspects. School environment issues such as unhygienic food at school or from the street vendor (37.1%) and unhealthy toilet facilities are challenging concerns for the school. Besides, policy development contributes to the social and physical environment determinant factors in adolescent's health.

As it has been mentioned in the literature review, policy development involves ideological beliefs and values, economical aspects, political load, evidence based information and research. Findings from the survey are crucial to provide the evidence-based information in order to facilitate problem identification and issue recognition as the first step in the policy making process. Most of the policy and decision makers mainly prioritise issues by national or global health issues, political, and economical issues. Figure 9.1 summarizes the key points of utilising the health-risk figure to convince the decision makers using the linking issues. Linking issues is necessary to bridge the different of issue prioritisation between adolescents and decision maker or policy maker perspectives. As presented by Pappaioanou, et al (2003) barriers in utilising data in the decision making process are due to the gap between researcher and decision makers. The

information should contain political language and context that can bridge the communication gap between evidence-based data and policy support.

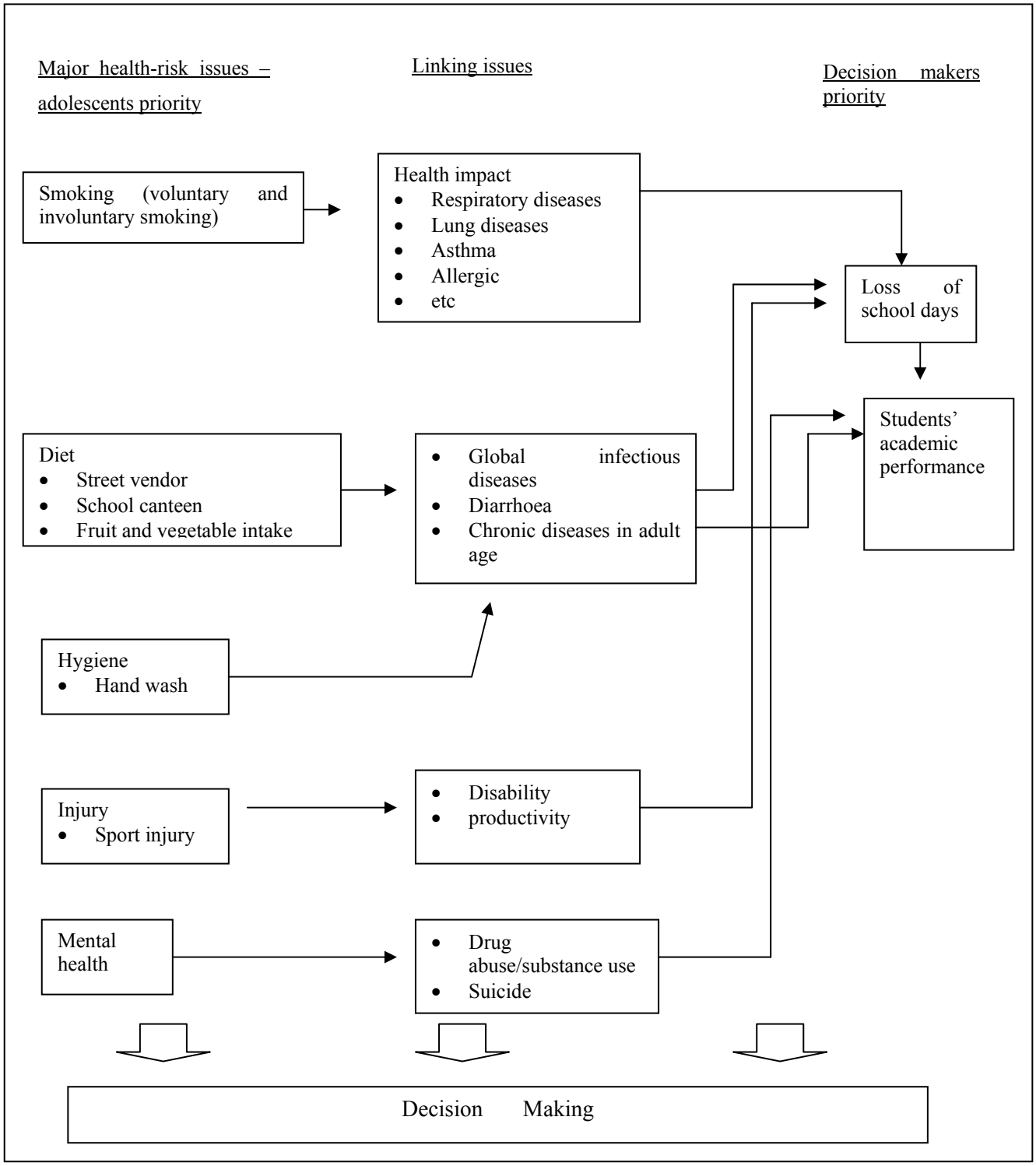


Figure 9.1. Linking major health issues in adolescents and decision makers priority in decision making for school-based health program

Figure 9.1 describes how certain linking issues that usually have a political context can bridge the information-base to the needs of decision makers. Smoking, particularly passive smoking, is one of the major health-risk issues in adolescents in Depok city and it is actually also an important issue among adult in Indonesia. Specifically for adolescent, passive smoking of environment tobacco smoke (ETS) is the main smoking issue. As it has been mentioned in the literature review chapter, ETS or involuntary smoking caused many illnesses among children including adolescents, such as respiratory diseases, asthma, pulmonary diseases, chronic cough and pneumonia. The ETS was mainly because the father smoked and most likely the peers and other adults surrounding them smoked.

The policy makers and decision makers in most of the government sectors most likely have a better understanding of health issues by utilising statistical data. Therefore presenting statistical data is important in the advocacy process. The proportion of smoking related behaviour issues in adolescents can be used as the evidence based supporting aspect in the advocacy process to convince that the smoking issues is crucial.

The education sector mainly focused on the academic performance of students rather than health. Therefore it is important to link the health-risk behaviour with the academic aspect of the students development. Two main aspects in smoking related issues that need to be considered are linking the issues with students academic performance impact as well as the health impact and to put more effort on smoking prevention among males. Particularly for advocacy in the education sector linking the smoking related behaviour with the academic performance will be more effective. Also, it is important to point out the gender different in smoking related issues among adolescents, because of the high proportion among males.

In terms of diet related behaviour, several issues that need to be raised with the decision makers are food hygiene, healthy canteen and fruit and vegetable intake. The food hygiene issues are related to students access to the street vendor outside the school. Most schools did not make food safety and quality a part of strong policy and practice. The students still have high access to the unhygienic food from street vendors. It is important for this issue to involve other related government sectors and organisation, such as the food and drug association, local government, street vendor association, as well as the local community, because strict policy on street vendors is lacking at almost all districts in Indonesia. The issue of school canteens is related to the low quality of food provided

by the school. Food nutritional value is poor, most contained unhealthy and unnecessary chemical substances such as colouring, flavouring, and preservative. Lack of fruit and vegetable intake among students is most likely related to family dietary culture. Therefore involving parents is one of the key aspect to increase fruit and vegetable consumption among students. Schools also need to provide sufficient knowledge, skills and the environment to enable the students to consume sufficient fruit and vegetable without pressure.

One alternative for presenting the food issues among adolescents to the decision makers is to link unhygienic food with infectious diseases, which also indirectly affects academic performance due to loss of days in school because of diarrhoea, typhoid and other infectious or gastrointestinal related diseases. Healthy canteens in schools will bring benefits not only for the students but also for the other school community members such as teachers and staff. Meanwhile, sufficient intake of fruit and vegetable can be linked to long term health benefits.

In regard to injury issues, the key point that can be raised to convince the decision makers in the education sector is by linking injury with disability and loss of school days. Disability also leads to less productivity and social life which are important to teenagers. Linking the injury to sporting activities is also important as sport is one of the priorities among male youth.

Mental health related issues among adolescents in the survey included feeling unhappy and neglected by the parents. Mental health related issues are crucial among adolescents because it is related to psychological and emotional development in their future life and presents a possible risk of drug use and smoking when they get older. Directing these issues to drug abuse and smoking as well as to suicide issues is one alternative to convince the decision makers to take action because the issues are important for all sectors.

The hygiene issue was focused on the student's habit to wash hands properly before eating. As it was about 5.6% of students rarely or never washed hands before eating, the school should take this into account in linking with the health impact. Similarly with the issue of unhygienic food, linking to the health impact particularly infectious diseases is one of effective ways to convince the decision makers. An alternative strategy to use the case of emerging diseases outbreak or current infectious diseases outbreak, such as SARS

or Avian Influenza to point out the importance of having clean behaviour and environment in schools to stop the contagious cycle of the diseases.

In order to address all the needs from different perspectives described above, government sectors should have effective strategies that accommodate all the needs to improve adolescent health. The next section will discuss strategies that have been implemented by the government sectors and the barriers or challenges that are evident in the findings of this research.

9.2.3. Strategy evolution and barriers of School-based Health Promotion in Indonesia

The school health program in Indonesia started many decades ago with the pilot project in Bekasi district in 1956 initiated by the Ministry of Health. The program was called UKS and it has been applied at all school levels from elementary to high school. Most activities at the UKS were basically focused on a first aid program, health education and hygiene related to infectious diseases and malnutrition. After some years, the school health program has evolved into the current movement which has a broader and more comprehensive approach.

The current movement of the school health program can be seen as an important evolution in the school health program strategy development. Since the program initiation, some important strategy evolution has been recognised in terms of program concept. The evolution shows stronger commitments and concerns for promoting health through the school setting. On the other hand, some barriers were found explaining the main reasons of failure in running the school health program. The summary of evolution of the school-based health program in Indonesia can be seen on figure 9.2

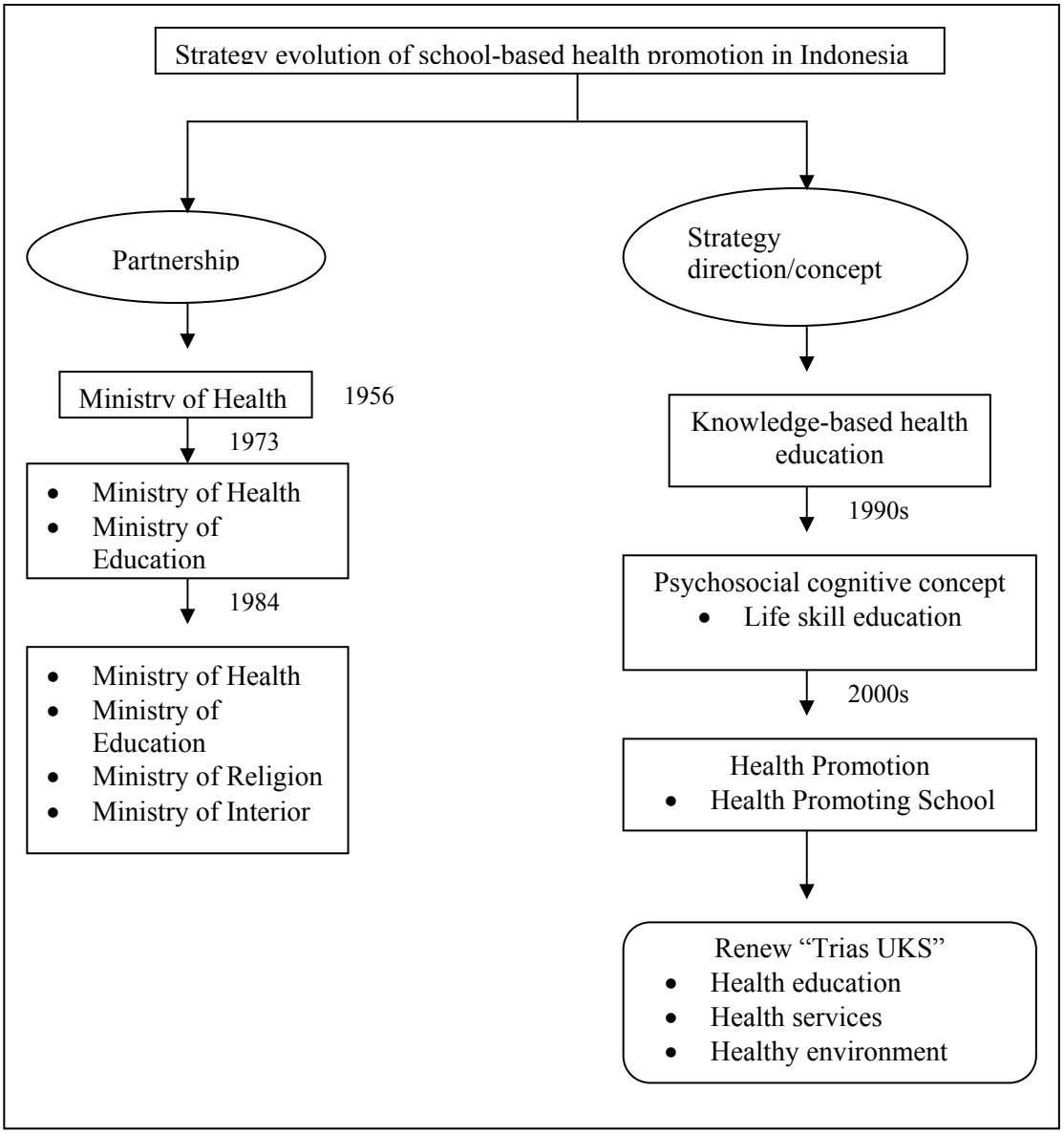


Figure 9.2. Evolution of school-based health promotion program in Indonesia

The first evolution was in 1984 when the government, particularly the health and education sectors, realized that schools were not only under the education sectors. The number of private or semi-private schools was rapidly increasing across Indonesia. Those private schools were run by some middle-up independent foundations, particularly religious foundations. Therefore, the government decided to involve the Ministry of Religion and the Ministry of Interior in the school health program development. The Ministry of Interior roles are very important because the Interior Office or local government office at province and district level has a strong influence in most program

development in the province and district level. Consequently, the government released a collaboration decree letter that involved four ministries (Health, Education, Religion, and Interior) to develop the School Health Program for children and adolescents. In that year, the school health program also changed name to Trias UKS which means the program included three main aspects of health education, health service, and healthy environment. This is an important achievement because this meant that the program concept changed from basic issues such as first aid, food supplement and hygiene into broader concepts.

The second evolution occurred during the 1990s, when the concept of School Health Program changed to psychosocial cognitive development introduced by WHO. The concept of the program was known as life skill-based health education, to enable students to have strong independent skills to deal with deviant behaviour including health-risk behaviour. This concept was developed based on the social cognitive theory that built adolescents' self esteem to avoid any negative behaviour such as smoking, alcohol drink, drug abuse.

The third evolution was in the 2000s, when the WHO introduced the concept of health promoting school for adolescent health. The Indonesian government tried to renew the Trias UKS concept introduced in 1984, in the direction of the health promoting school concept.

These evolutions lead to some progress of the technical aspects of the school health program. More players were involved and stronger commitment was obtained from each player. This motivated the schools to participate in the school award program. Schools that had a higher level or strata of school health program and won healthy school award attracted more parents to enrol their children and adolescents to that school. Although, conceptually, the governments already achieved significant progress, some barriers were still found in the implementation of the school health program, which caused a low rate of program implementation. Although the school-based health promotion had achieved certain progress in terms of partnership and program concept, many schools failed to run the program effectively due to some barriers.

Barriers or obstacles in the implementation of school-based health promotion found in this study were divided into three main aspects being funding, partnership and human resources. Each player, for instance the health office, the education office, and the school community, had their own typical barriers, but all of them stressed the human resources barrier. The health office considered their barriers to be human resources and the

functioning of the education sector. The education office considered theirs to be human resources, the health sector function and the management system. The school community, including students, teachers and parents, stressed the barriers to be funding and human resources. The barriers to efficient implementation of school based health program presented from both education and health offices perspectives were actually linked to insufficient funding available to both the Public Health Centre, as the direct coordinator, and to schools. Figure 9.3 and 9.4 describes the barriers in carrying out the school-based health promotion from the perspective of the health sector and the education sector.

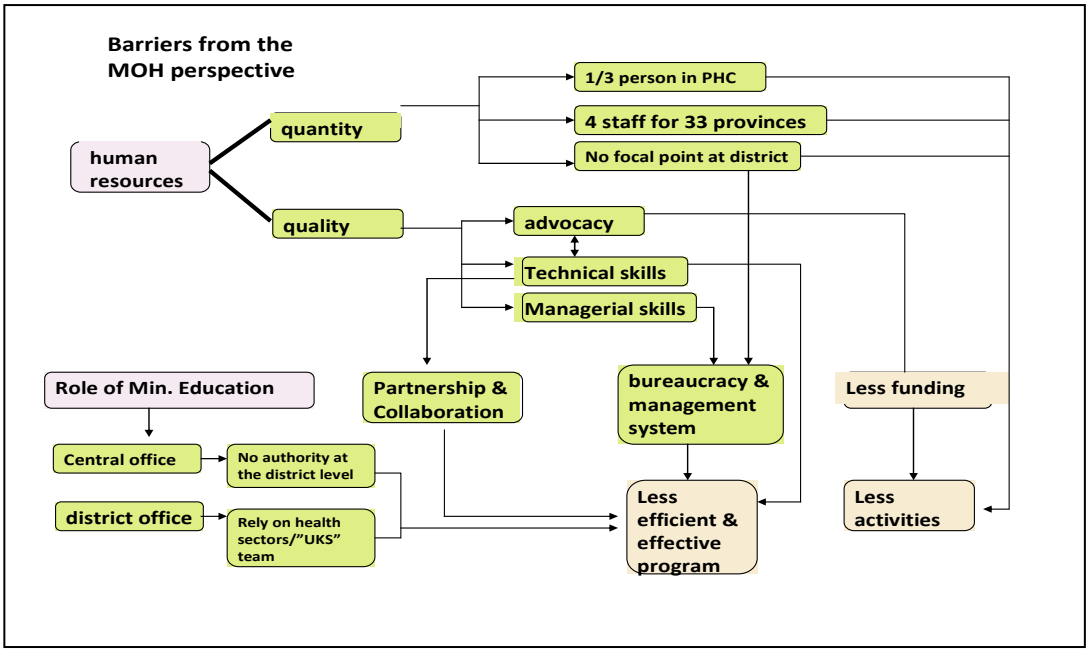


Figure 9.3. Barriers of School-based Health Program Implementation from Health Sector at National Level.

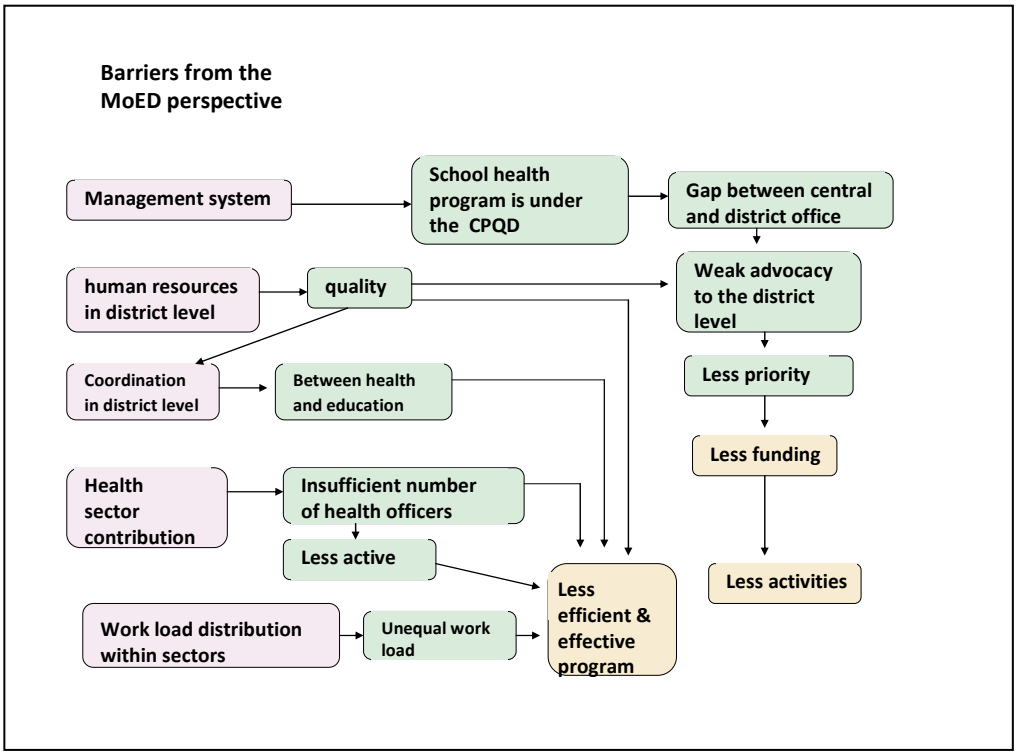


Figure 9.4. Barriers of School-based Health Program Implementation from Education Sector at National Level.

Figure 9.3. and 9.4 describe that the human resources barriers in the health and education offices are both referring to quantity and quality. Particularly for the health sector both respondents from the health office and education office admitted that the number of staff working for School Health Program is very limited both at national, district and PHC. The limited number of staff also had limited quality, particularly in advocacy, partnerships and the technical aspects of adolescent health.

Partnership barriers are basically about limited capacity in communication and inviting partners to be actively involved in the school based health program. There are some assumptions related to these barriers. First, there is insufficient confidence from health sector to convince the partners to become involved, secondly, there is limited communication skills. Both the health and education offices judged that the other side did not contribute optimally. This showed a lack of understanding from both sides regarding the limitation in human resources. Better communication should be able to address this issue.

Funding or monetary barriers always comes out in all program evaluation and analysis in government sectors. They mostly blame the insufficient funding for the ineffective program. This funding issue is mainly related to limited capacity in providing the evidence based and advocacy skills to convince donor agencies or decision makers in government to release more funding. Another limitation is lack of capacity to obtain funding from non-government donor agencies.

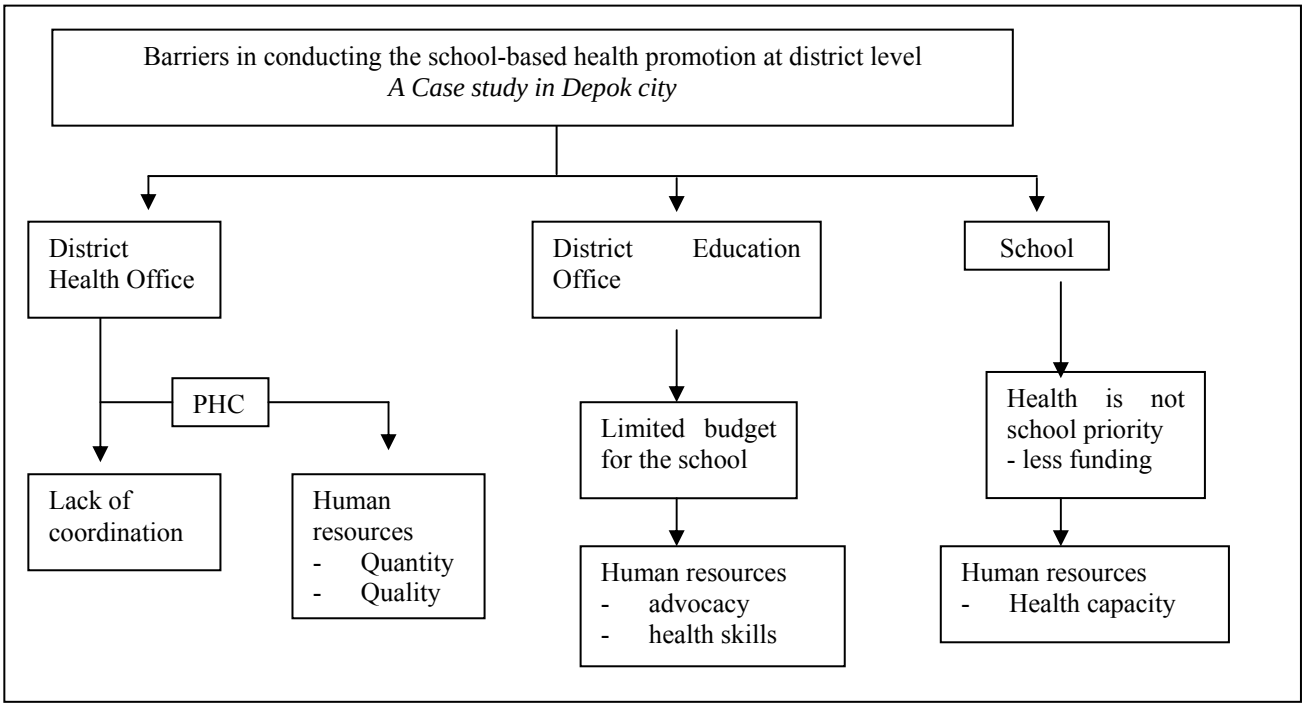


Figure 9.5. Barriers in conducting the school-based health promotion in district level

Figure 9.5 shows that from the school perspective, the barriers include human resources and funding. Funding was an issue both in schools that have good resources and limited resources. In a school with good resources, budget to run the school health program was less than 1% of the total school budget or approximately AU$500 yearly. The school used most money to prepare sporting competitions and lesser amounts for other health activities. The school with limited resource, had less funds to support the school health program, because this school was not a state school and the funding came from the religious foundation which it might not be able to fund extra curricular activities. Meanwhile, the teachers and head masters expressed human resources as the main barrier

The implementation of School Health Program linking it to the HPS concept can be seen on table 9.3. The school health program, in the case study, have applied the health promoting school concept, but it did not completely or ideally apply the concept (table 9.3).

Table 9.3. HPS concept key problem and School-based health program in Depok

Six Concepts of Health Promoting School	School health program in Depok	Key problem
Engage all players to be actively involved in promoting health and school health activities	• The schools rarely had school health activities (at most once a year for school award or sport competition) • Have involved education office, health office, and local PHC only. • Have not involved parents and other community organisation or leaders yet	• Community or youth organisation and health related NGOs, were not available. • Teachers were not aware to involve community in school health program • Teachers don't know how to involve the community
Create and save healthy environment	• Schools did not provide healthy and clean toilets. • School canteen provided unhealthy foods. • Street vendors outside the school were selling unhealthy and unhygienic foods	• School had lack of funding. • School community had insufficient health skill and awareness. • School had discordant communication with street vendors. • Poverty
Develop skill-based health education in the curriculum	• Health education in curriculum was indirectly included in biology and physical activity subjects. The health education includes environment, hygiene and sanitation, tobacco use, food additive, food colouring, sweetener, chemical and drugs, reproductive health. • School curriculum did not include health-risk behaviour prevention in the teaching material.	• Teachers and head master had limited health skills. • School usually follow the national curriculum that did not provide teaching material for adolescents health-risk.
Provide access to health service (include screening, diagnosis, monitoring growth and development)	• Access to health services was available only for those who were sick during school hours. • Screening was for new students only (once) • The local health office rarely visited the school. • Particularly for junior high school, some schools still did not have growth monitoring cards or health cards.	The local health service had limited number of nurse/health officers to monitor and coordinate the school health activities.

Six Concepts of Health Promoting School	School health program in Depok	Key problem
School support the health promoting policies and practices	• School did not have specific policies on health promoting school • School applied the national policies and operational strategy guideline to run school health program.	• School had not put health as priority yet. • School assumed that health of the students should be managed by health office.
Strive to improve the health of the community	• Activities that involve community were during religious events. • No particular health related activities that involve community • Still focus only on students health	• Teachers don't know how to involve the community

9.2.4. Prospective strategies of school-based health promotion in Indonesia learning from the Australian and Chinese experiences.

The key lesson learnt from Australia and China can be focused on three main aspects; leading sector, community participation, partnership and leadership. Indonesia can include points in the development strategy of school-based health promotion.

a. Leading sector of practicing school-based health promotion concept

The leading sector of HPS implementation does not necessarily have to be from the health sector or government institution. It can be from academic institutions, education sectors or non-government organisations that have a strong interest in developing the school-based health promotion. Learning from China, particularly from Hong Kong, the leading sector of the HPS is one of the universities, which is a success story of HPS implementation. This success is because of the supportive contribution not only from the university role but also from other from schools as well as from the government.

In the case of Indonesia, particularly in a district situation such as in Depok, using the non-health sector as the leading sector is one of best alternatives. Potential institutions or organisation for HPS practice in Depok are the University of Indonesia and Depok City forum. The University of Indonesia has potential resources to develop and initiate the program because it has a faculty of public health. The faculty

of public health in University of Indonesia has strong human resources capacity and international links and access with health experts from different countries. Another opportunity is that Depok has a city forum named "FKDS", which is working for different types of community health projects.

b. Community participation

The implementation of health promoting school in Australia, particularly Queensland has a strong community involvement. An example of strong community participation was in Elliot Head School, that involved an elderly group to support the health activities in school, because the school was located in the residential areas where the residents were mostly elderly. Queensland also is a good example of active contribution from parents and professional groups in supporting the school health activities.

Community participation is the most achievable strategy for school-based health promotion that can be applied in Indonesia. This is because Indonesia has a variety of community groups and it is culturally acceptable. Especially in the middle lower class population, group activities and engagement are common. Many potential community groups that can be involved in the school health activities are school committee, youth groups ("*karang taruna*"), elderly groups, city forum, women movement ("*PKK*"), religious groups, housewife groups ("*arisan*") and others.

c. Partnership

Macao and Guangzhou showed good experience in maintaining good partnership between the health and education sectors. The Education Department in Macao has positive initiation in giving funding support for the school-based health program. This is unlike other experiences in Queensland and Hong Kong, where the funding mostly come from the health departments. The Health Department who had good communication with all levels of government offices promoted good partnership in Macao.

In the case of Indonesia, the partnership between the Health and Education Departments is rather superficial. The partnership is strong on paper and at the policy level, but weak in the technical level. Learning from Macao, using better communication skills in all levels will bring a positive influence in maintaining

relationship of health and education sectors. Both sides should improve their communication skills to understand and trust the other in developing the school-based health promotion.

d. Leadership in school setting

Both Queensland and China have strong support from the school leader to implement the school-based health promotion. The school headmaster is completely aware of the need to improve health and wellbeing of the school community. An example in Hong Kong, the school headmaster has a strong healthy leadership concept, which put efforts to include health concepts in the whole learning process targeting students, teachers, and other school community members.

Learning from Queensland and China, improving the capacity and skills of school headmasters is important as a short cut in implementing the school-based health program. Besides, focusing only to build the capacity of the biology or sports teachers, improving the capacity of school head masters will also give significant contribution, because the school headmaster has decision making power. The local health authority should consider approaching the school headmaster to enable the schools to initiate health activities as one of the routine school activities and include health in all learning processes, as well as encouraging teachers, parents and school staff to apply health behaviours to become role models for the students.

9.2.5. Future direction in school health program implementation

Future direction of HPS program implementation in Indonesia was developed in line with challenges and needs found in this study. The summary of the challenges, needs, and future direction in general is presented on the figure 9.6.

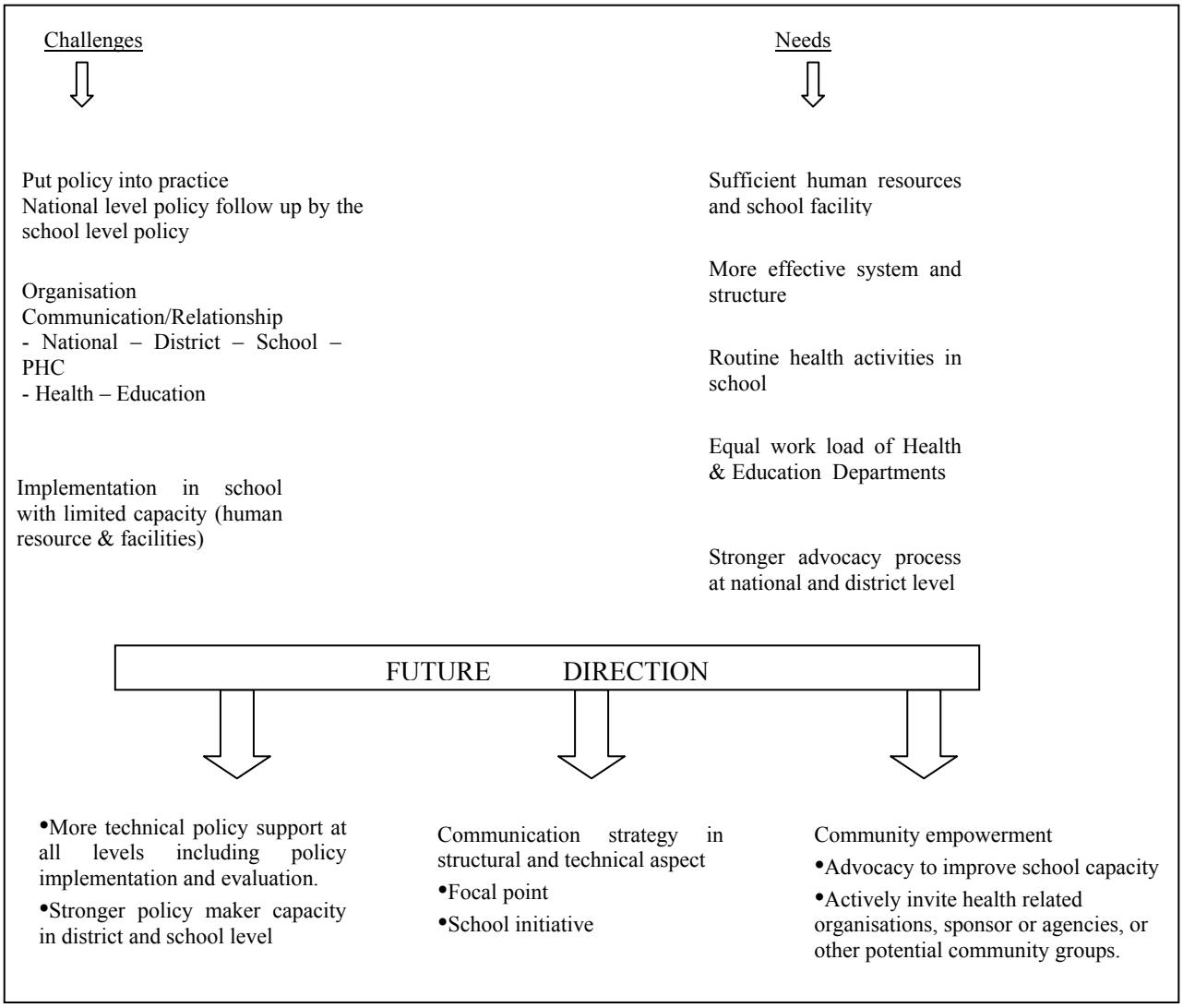


Figure 9.6. Summary of Challenges, Needs and Future Direction of HPS Practice in Indonesia

School-based health program for adolescent health is a very comprehensive and effective approach to improve the wellbeing and health of the adolescents. This approach has been applied for many decades in all over the world. In Indonesia all the official and administrative supports are sufficiently available. However, Indonesia still faces challenges in implementing the school-based health promotion which influences the

effectiveness of the program. The challenges are mainly related to the barriers that currently face by all the players in school-based health promotion. Generally the challenges include putting the policies into practice, particularly at school level, technical and structural communication between national, district, school level, and community, and how to implement the program within limited school capacity.

Turning the policy into practice is a very challenging in this case because the school still had problems in running the program. The policy at national level both in the Health and Education Department was not followed by policy at the lower level, such as at district level and school level. According to Eager (2005) an effective healthy public policy should include all levels of the government system. The government level in school-based health promotion include national office, district office, sub district PHC and school level. Policy implementation and policy evaluation, as part of the policy making process, were not yet done in terms of school-based health promotion at school level. In small and remote schools, the policy and the plan were available but the activities were absent.

Communication and maintaining good relationship with all players in school-based health promotion are other challenges that are crucial for sustainability of the program. As mentioned by Orme (2007) successful partnership process involves the commitment and engagement of partners; agreement about purpose; involves high levels of trust, reciprocity and respect; favourable political and social conditions (finance, institutional arrangements, legal structures); satisfactory accountability arrangements and adequate leadership and management. In term of school-based health promotion in Indonesia, the partnership issue across sectors as well as within sectors was hypocritical or superficial. A good relationship was shown on the surface but it was not strong enough to keep the school-based health promotion actively implemented at school level. The relationship was good in term of official commitment and national policy paper. Four Departments agreed to commit and work together for the school-based health program. However, the relationship and commitment were not sufficiently followed by the practice due to ineffective communication, particularly at the technical level. This communication included both between Health and Education sectors as well as within divisions in each Health and Education sectors. The relationship between the Health and Education sectors seems to be demanding rather than supportive because of ineffective communication. The challenge for the Health and Education sectors is how to improve communication and relationship between all players in both sectors.

Another challenge was the implementation of school-based health promotion in small and remote schools that had very limited resources. Indonesia still has many small schools in remote areas in village and subdistrict areas as well as in slum urban areas. Government and other related institutions or organisations should have the appropriate strategies to improve health of adolescents in disadvantaged schools. The school-based health promotion was not fruitfully implemented in disadvantaged schools. Therefore, future direction should also focus on issues in disadvantaged school.

Particular needs are also an important aspect to direct the future plans for better HPS practice. The needs were generated from different groups, such as the government office at national level, government office at district level, and school communities. The needs can be summarised into five major needs; sufficient human resources; effective government system and structure; routine school-based health activities; equal work load between health and education sector and stronger advocacy process at national and district level.

The need for human resources with adequate health skills is very important for the school-based health promotion implementation. It is shown in the findings that the school community has a very limited understanding and perspective about school-based health promotion. The school community sees the school health program for treatment rather than for prevention. Their understanding about UKS is mainly related to giving first aid and to take care of the students if they are sick during school hours.

Future direction of school-based health promotion has been developed according to the achievements, barriers, needs and challenges found in this study (see figure 9.6). The direction mainly concerns the policy aspect, partnership and community involvement. This was generated from the overall challenges found in this study that have been mentioned in the paragraphs above.

The policy for future programs requires comprehensible regulation and technical guidelines that include an implementation and evaluation process at all levels of the government system as part of the policy making process. Up to now the health and education sectors have not yet carried out official policy evaluation for the school-based health promotion implementation. The school level, as the targeted setting, did not have a strong policy for the school health activities.

Direction to more effective communication and partnership between all players in school-based health promotion is important to enable the school to have more access and capacity to health. School initiative is very important to encourage or trigger active contribution from partners in accommodating school needs. In order to obtain school initiative, the school should have sufficient capacity to address the health needs and priorities of adolescents as well as community health.

9.2.5. Strategic model for sustainable school health program in Indonesia

Development of a school-based health promotion requires a more strategic model that enables schools to put the policies into practice effectively according to their school capacity. Learning from other countries experiences, analysing the barriers, as well as assessing the need of school-based health promotion ensures a more effective alternative strategic model. An alternative strategic model is developed with four different categories such as human resources, funding, partnership and technical strategy for school level.

The human resources alternative strategy can be seen in figure 9.7. The framework focuses on three key strategies which are capacity building, management system and community empowerment. Capacity building targets the health and non health sectors, government and non government organisations, and school communities that relate to school-based health activities. The main goal of capacity building is to improve the skills of the target groups in health, advocacy and communication technique. Examples of activities in this strategy are training, workshops, round table discussions about current issues of adolescent health and effective advocacy and communication technique. The outcome of the capacity building will be that all players in school-based health promotion have sufficient skills in adolescent health, advocacy and communication.

The second strategy targets human resource to improve management systems at the district and school level. The management system should have a focal point for the school-based health promotion to build more effective communication, more prompt responses and to avoid complicated bureaucratic government procedures which are time consuming and costly. The focal point should communicate to the district level, both in the Education and Health Offices, and to schools for teachers, headmasters, parents and students representatives. Other focal points are members of city forums, as most districts in Indonesia normally have a city forum. The main function of each focal point is to communicate with the national or central government offices and with other focal points at district level and to bridge the communication gap between all partners in order to

accelerate the school-based health promotion practice and to anticipate any urgent needs or issues.

The third strategy is community empowerment, which aims to fill the gap in issues of insufficient human resources to run the school-based health promotion. The school with very limited human resources is still able to run the school-based health promotion by empowering the local community. The local community includes public figures or community leaders, health professionals such as General Practitioners, nurses, midwives and nutritionists who live in the residential areas near the school premises. The members of "PKK" are also alternatives to be actively involved in school health activities. The important focuses of this strategy are to maintain good communication and to motivates the community so that they can actively support and assist the school to run the school health activities on a voluntary basis.

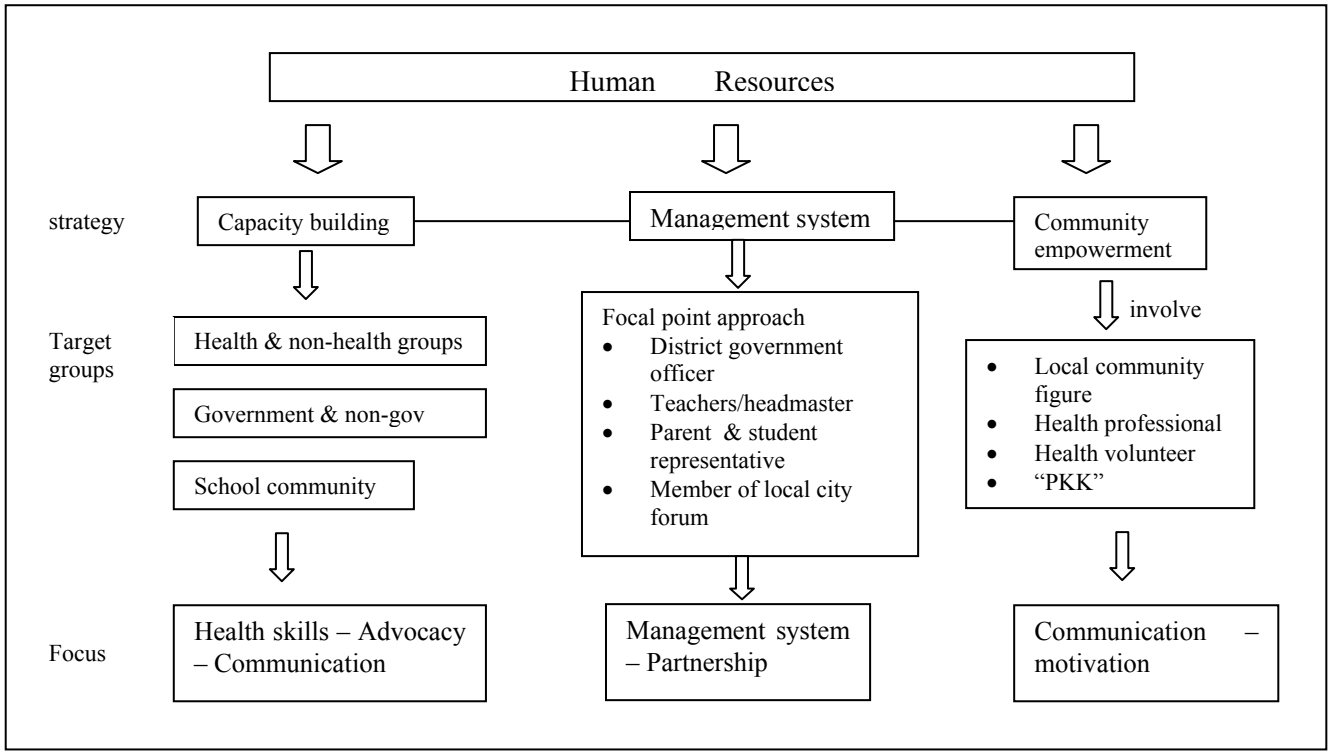


Figure 9.7. Strategic Framework of Human Resource Development in School-based Health Promotion Practice

Funding issues are crucial because it was pointed out by all the players in school based health program as one of the main barriers. The funding resource is usually from either government or non government organisation or both. The alternative solution for funding issues can be grouped into national, district, and school level. The national and district

levels have similar funding resources. The key strategy for national and district levels to receive sufficient funding is strong advocacy, which needs a strong evidence base and qualified human resources or persons to deliver the messages to the policy makers and decision makers. As it can be seen in Figure 9.8, the strong evidence-based information should be obtained through proper process and present the community or client needs, address the priority health issues, with a political and economical sense and support from influential local community leaders and groups.

At the school level, the strategy to obtain sufficient funding support can be developed according to the school resource category such as good, moderate or limited resources. The schools with good resources, either state or private school normally already have a certain amount of money to run the school health program as one of their extra curricular activities, while schools with limited resource are wanting. The moderate schools fall between the good school and poor or limited resources school. The strategy in schools with good or sufficient resources should focus at least to maintain the existing funding support or to increase the amount if possible. One alternative for schools to gain the funding support is by proposing a budget plan with the help from health officers or professionals to be delivered to the government or non government funding institutions. An alternative for schools with moderate or poor resources is to obtain support from local community members and school communities such as alumni, association of the school founder, or by empowering the teachers and school headmasters to propose budget plans to government or non-government organisations, with the assistance from local PHC or health officers. This is because the teachers and school principal in schools with poor or moderate resources do not have sufficient skill to purpose extra budget to conduct the school health program, therfore the assisstance from the non-government organization or alumni organization will be helpful.

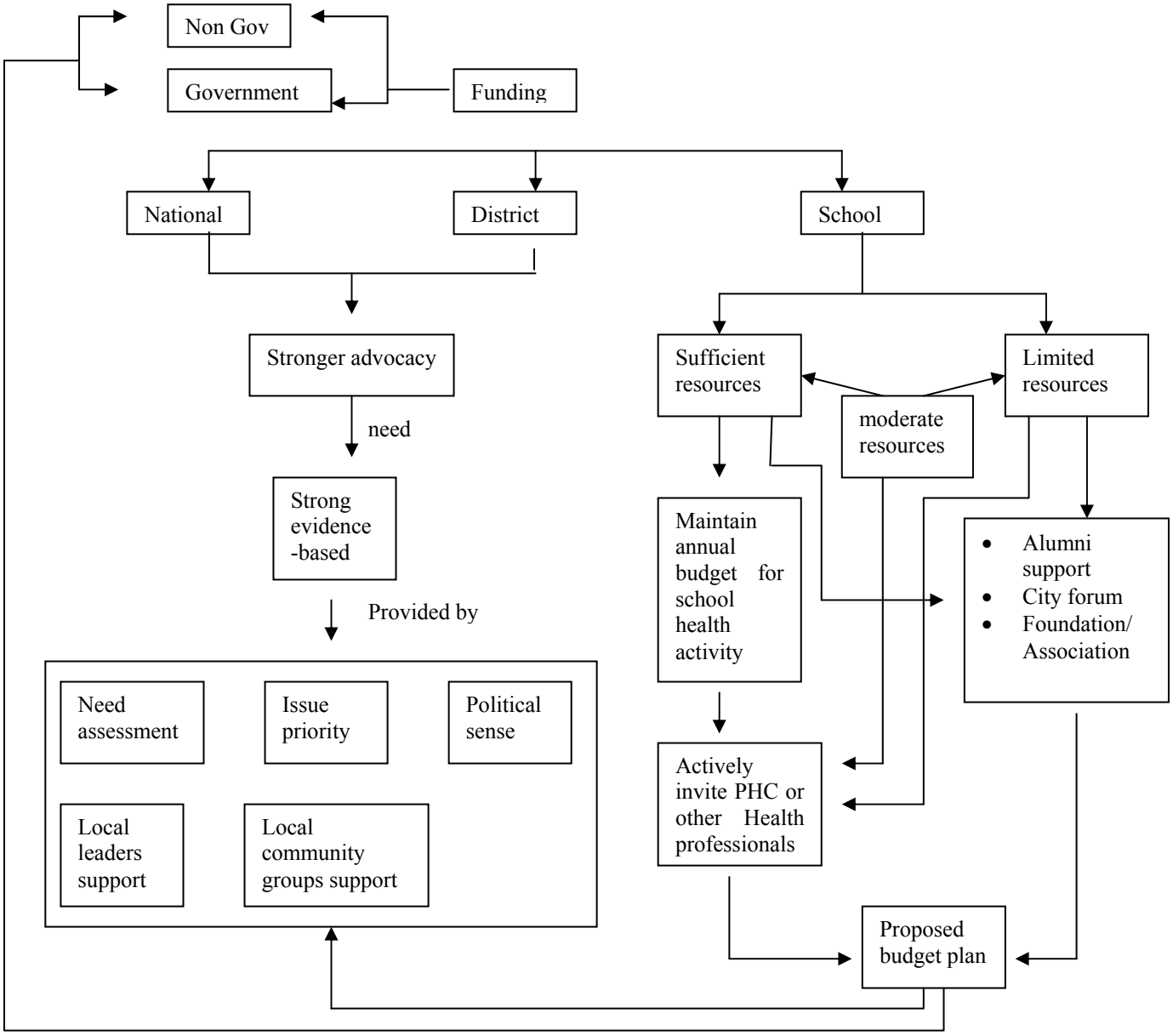


Figure 9.8. Strategic Framework of Funding Support in School-based Health Promotion Practice

This study found that partnership is one of the main barriers in school-based health promotion practice. The partnership in central and district, as well as in school level was lacking and not that many partners were involved in the school-based health activities. Figure 9.9 below displays the strategic model of a possible solution to address the partnership issue. The strategic concept includes active initiator or coordinator, routine activities and communication. The active initiator or coordinator is very important as he or she will lead other partners to keep informed and contribute actively for the program. The person in charge can be from either the Education or the Health office in the national or district office or from the local city forum in the community. The person should have high motivation and interest in the school-based health program and have sufficient understanding of the importance of partnership and how to maintain effective partnership. Defining and inviting appropriate partners are also crucial aspects in partnership because failure to involve suitable partners may lead to ineffective partnership. Defining partners depends on the level of partnership such as international, national, local community, or individual (Orme et al, 2007). As it was mentioned in the literature review, successful partnership can be judged by process and outcome success factors. From the beginning, the program may focus on the process which requires commitment and engagement of partners, agreement about purpose, involves high levels of trust, reciprocity and respect, favourable political and social conditions, satisfactory accountability arrangement, and adequate leadership and management. Partnership outcome success will be achieved when more schools practice school-based health program on a more regular basis and improvement in health behaviour among students and other school community members is evident.

Routine activities and communication are crucial to maintain the relationship between partners in a more harmonious way. The activities and communication can be varied dependent on available resources, ranging from traditional ways to the most high technology ways. The focal point or the coordinator should consider the schools with very limited resources, which may not have email or phone line access. The most traditional and least costly way in routine activities and communication can be by post mail or meeting on a regular basis or to invite all partners to join the existing regular meetings in the community such as the monthly village meeting or PKK (Family Welfare Movement), who also can be one of the partners. Involving partners in some routine activities in the government office or in the school premises also will lead to stronger

partnership, as the partners are involved directly in the activities and will have a sense of belonging to the program. The school with good resources can apply more high tech ways of communication such as through internet access and other electronic-based communication devices (mobile phone, etc). The communication does not necessarily have to be initiated by the government. The school or other community members can also initiate the communication or suggest any activities related to school-health anytime.

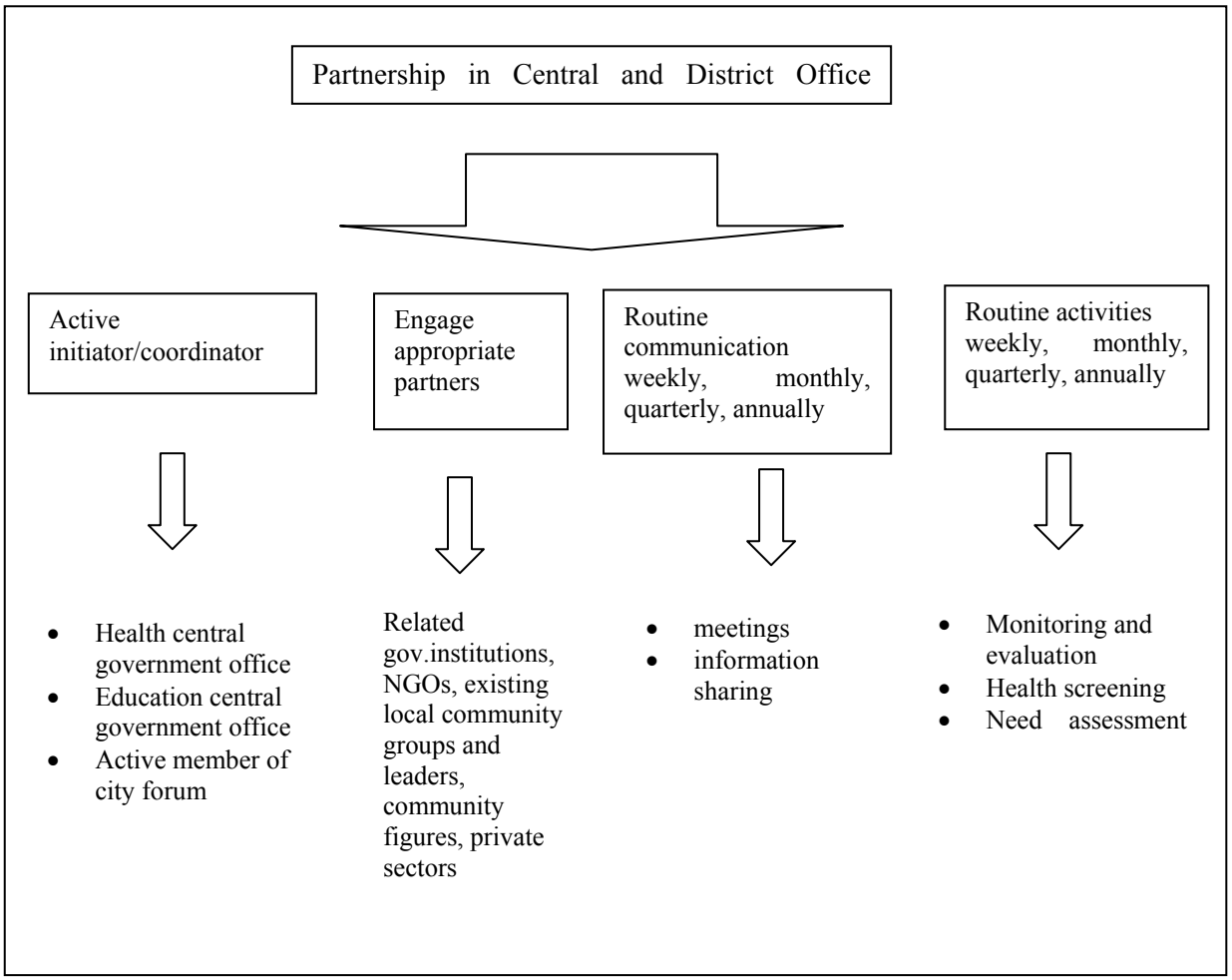


Figure 9.9. Strategic on Partnership in National and District Government Office.

At the very technical stage, the strategic model can be focused more on practice or program orientation. Examples of the strategic activities can be seen in table 9.4. The program strategy can be focused on several key points such as issue identification to be addressed in school-based health activities, health education, healthy school environment, award scheme and individual consultation. The details of activities, targeted health-risk, target group and partners involved, can be seen in the table 9.4. This program strategy is an example that can be modified or added depending on the school need and capacity.

Table 9.4. Example of an alternative program strategy in school-based health promotion practice.

Program strategy	*Targeted health-risk*	*Activities*	*Target group*	*Players/Partners*
Identify health issue	Health-risk behaviour	- school survey - focus group	Adolescents (students) Adult (teachers, staff, parents)	Government (health, education, research centre), NGOs
Health education	Smoking, diet, mental health, injury, hygiene, physical activity	Include health education in the school curriculum	Adolescents (students) Adult (teachers, staff, parents)	Education office, head master, teacher
Healthy school environment	Smoking, diet, mental health, injury, hygiene, physical activity	- Smoking free area - Friendly school community - Safe water - Clean toilet - Safe sport facilities - Healthy waste/rubbish management - Healthy canteen - Care about friends	Adolescents (students) Adult (teachers, staff, parents/visitors, food providers inside and outside school)	Government (health, education, environment, religion, interior, local authority), universities, NGOs, PHC, private company for toilet, sport, hygiene & sanitation, foods industry.
Award scheme for healthy students and school community	Smoking, hygiene, diet, physical activity	- Annual Health screening - Monthly BMI monitoring - Healthy food diary - Physical activity diary - Monthly and yearly reward	Adolescents (students) Adult (teachers, staff, parents)	Same as above
Individual consultation	Mental health, smoking, diet	- stop smoking - emotional problem - diet	Adolescents (students) Adult (teachers, staff, parents)	PHC, professional associations (mental health, diet, smoking), NGOs

Based on the findings, in general this research highlighted three main view points of challenges in the Indonesian situation: turning policy into practice, understanding the

process to adopt the global strategy and the need to strengthen the partnership between Education and Health sectors.

Strong commitment from government sectors, school communities as well as other related community group or organisation is crucial to make the political concept into practice. This is because the practical aspect is started from a commitments to develop the school-based health program. The commitment will not work well by single stakeholders' commitment; it requires multiple stakeholders' commitments.

All the stakeholders should have an adequate skill to make the process of making theory into practice more effective. The skill includes understanding the concept of adolescent's health and school-based health promotion, skill of good communication, effective advocacy, and maintaining relationships with related partners and school community. In addition, readiness of the stakeholders, school community, and other community groups toward the school-based health promotion will accelerate the process of making theory into practice. Aspects in the readiness include social, economical, cultural, and environmental aspects.

The health promoting setting approach, particularly the school-based health promotion, has been part of the global strategy since 1950s, when the international public health experts figured out the effectiveness of using school as the setting to improve health of children and adolescents. Each country has specific experience and challenges in adopting the strategy into local strategy and not necessary always successful.

In term of global strategy of school health, key points that country need to considered in adopting the strategy into local strategy include issue priority and needs, local resources and readiness and linkages with the existing strategy. These key points will make easier for the country in adopting the strategy.

Identifying issues and needs, specifically in adolescents health are crucial in the decision on the appropriate direction of the program and necessity of implementing the strategy. These are also useful in adopting the global strategy to make it more practical and applicable according to local issues and needs.

It is also important to identify local resources and readiness in community, especially the school resources, as eventually the school is the one who decide to actively conduct the

school health activities. Knowing the local resources will bring more effective program in a way that school is aware of their limits and capacity and willingness to start to implement the school health program step by step. In addition, the local resources also include resources from government sectors as well as from the community. By understanding the local resources each stakeholder will know where and how to start the school-based health promotion in line with the global strategy

Another significant conclusion from this research is that the global strategy of school-based health program should link with the existing strategy. The local authorities need to know that it will be more effective not to completely change the existing school-based health strategy, but rather supplement and modify the program with the global strategy according to the needs.

In Indonesia, the Ministry of Health and Ministry of Education are two main influential government sectors in the implementation of school-based health promotion program. The other two Ministries, Ministry of Religion and Ministry of Interior, that also responsible for the school-based health promotion, are less likely to be involved in the implementation. Therefore, the relationship between the two key Ministries is crucial.

This research learns that the relationship between health and education sectors in implementing the school-based health promotion depends on people-to-people relationship and sense of belonging of the program. Those two aspects are significant in maintaining effective relationships.

People-to-people relationships between the health and education government sectors should be in all level of the government offices. The relationship can be bottom up or top down or sometimes can be initiated by the middle level. In addition, adequate skills in communication, advocacy and health promoting school concept will make the people-to-people relationship stronger.

Another significant aspect in maintaining the relationship is sense of belonging of the school-based health promotion program. Sense of belonging to the program should be from both the education and health sectors. Up to now, the health sectors often lead the program and the one who mostly try hard to maintain the program exists in the school agenda. Making the education sector have sense of belonging to the school-based health promotion concept is very challenging and need lots efforts, patient and high motivation.

9.3. Recommendation of the study

Recommendations of this study are categorised into three main subjects; recommendation for policy aspects in government sectors; implementation at school level; further research on school-based health program and adolescents health.

9.3.1. Recommendation for policy aspect in government sectors

The school-based health promotion in Indonesia already has policy support and includes the policy in the national strategy and operational guideline. However, the implementation of the program is still facing many hurdles and many schools still do not actively run the program. Some policy recommendations on policy implementation and evaluation below should be taken into account in order to improve the policy practice of the healthy public policy.

a. Policy implementation

   The policy should not only be strong at the national or central government level, but it also needs to be supported by strong policy in all settings at the lower level, such as district level and school level. Therefore the government at the national or central level, particularly in education, health and other related sectors, should encourage and support the district level government, including the school level, to build stronger policy. Basically, all levels of the government sector who are directly or indirectly involve in school-based health promotion should re-analyse the policy and be directed to a more powerful policy.

b. Policy evaluation

   Policy evaluation has not been clearly conducted, as many schools have not yet actively run the school-based health promotion. Policy makers and decision makers at all levels of the government sector in school-based health promotion program should regularly perform policy evaluation and address the issues found in the policy implementation to develop more effective policy support.

9.3.2. Recommendation for the implementation at school level

Effective school-based health promotion has school commitment and capacity as the key success factors, therefore it is highly recommended that schools should have strong health commitment and capacity to implement the program. School headmasters play important roles to encourage the teachers to be more aware about health and to develop strong policy to put health as a crucial part in the learning process. Even for schools that have limited resources, at least the headmaster should be willing to improve her/his health skills independently and become well informed about health issues. Another important strategy that this study suggests is that schools should initiate invitation or demand the health officers or local PHC to carry out health related activities for student health as well as for school community health. Demanding assistance from the local PHC will show the need from the school perspective, which motivates the PHC to run health activities in schools.

9.3.3. Recommendation for further research and development

This study has suggested certain strategic models and future direction for the school-based health promotion practice, which are developed according to the needs, barriers and achievement of previous implementation. Those findings have highlighted new issues that require more research. The following are the details of recommendations for the area of research and development:

- Research to analyse the relationship of health related aspects and academic performance among students, in particular school characteristics. This study will be beneficial to provide stronger evidence-based information to the policy makers, decision makers and program planers, particularly in the education sector.

- Qualitative research to explore more about major health-risk behaviour among adolescents such as involuntary smoking, consuming food from street vendors, smoking among males, mental health related behaviour, as well as hygiene and sanitation related behaviour.

- Trial or pilot projects to test the efficacy of the strategic models developed in this study. It is important to study further whether the strategic models can actually lead to successful school-based health promotion.

- Operational research on school community development will be important to explore the community involvement in the school health activities. This is to analyse how effective a community based intervention strategy can be used in the school setting.

9.4. Conclusions

This chapter discusses the main findings of the research, which includes strategy evolution, needs and challenges in the implementation, lesson learnt from different countries, future direction as well as an alternative strategic model for a more sustainable school-based health promotion program in Indonesia.

Overall, the main milestones of school-based health promotion in Indonesia concern two main aspects of partnership and strategy concept. The needs from the decision maker perspective concern the human resources, partnership and collaboration, advocacy and management aspects. Meanwhile, the needs from the school community, include health capacity, social and physical environment and health-risk issues priority. The barriers in the implementation of school-based health promotion found in this study were contemplated into three main aspects such as funding, partnership and human resources. These challenges mainly relate to the barriers that are currently faced by all the stakeholders in school-based health promotion. Generally the challenges include putting the policies into practice, particularly at school level; technical and structural communication between national, district, school level and the community; and how to implement the program with limited school capacity.

The future direction mainly concerns the policy aspect, partnership and community involvement. Directions for more effective communication and partnership between all stakeholders in school-based health promotion are important to enable the school to have more access and capacity to health. An alternative strategic model is developed into four different categories being human resources, funding, partnership and technical program strategy for school level. Finally, this study developed recommendations that are categorised into three main subjects; recommendation for policy aspect in government sectors; implementation in school level; and for further research on school-based health program and adolescents health.

Chapter 10. Conclusions

This research examined the evidence surrounding the needs, challenges and future directions for school-based health promotion in Indonesia particularly from the perspective of the health and education sectors. The evidence gathered can be used to develop future plans and strategic models to create more effective implementation of the school-based health promotion, which aims to promote health among adolescents and other school communities. This research included a review of the school-based health promotion strategy at a national, district and school level to identify the needs and barriers or challenges in Indonesia. Also, this research drew on experiences from other countries such as Australia and China in school-based health promotion practice targeting adolescent health.

The health of adolescents is essential in terms of creating better quality of life and investment in the future as well as preventing chronic diseases. Without any intervention, disease related risk factors may occur as early as adolescence. Focusing on setting-based health promotion approach is an effective strategy for adolescent health because it uses integrated and multiple approaches and it has been demonstrated to be effective in many places in the world. In Indonesia, the health and education sectors are the key stakeholders in school-based health promotion for adolescents' health.

This thesis has two parts, part one consists of chapter one to chapter four, which provided the background information of the rationale of the research, literature review, conceptual framework, and the method used to address the research questions. Part two covered chapters five to chapter ten, which described the research findings, discussion, recommendations, and conclusions.

Chapter one overviewed the rationale of this research, concerning the issues of adolescents' health risks, the increasing figures of lifestyle related diseases as death causing diseases worldwide, as well as ineffective school based preventive and promotion strategies for adolescents health, particularly in Indonesia. This chapter highlighted that although the Indonesian government has developed an intervention strategy for adolescents' health, particularly in the school setting, health-risk behaviours such as smoking and unhealthy diet were still major issues. Besides, the preliminary study that had been conducted prior to this research showed that only one out of 29 schools in

Depok Indonesia, had actively implemented the school-based health promotion program, while most of the schools were struggling to run the program. This chapter concluded that it is important to study the challenges and needs of school-based health promotion in Indonesia in order to develop future plans and strategic models to address the health-risk issues in adolescents.

Chapter two reviewed the health-risk issues in adolescents as global issues as well as for Indonesia and described the factors underpinning the health-risk issues. This chapter found that the major health-risk issues among adolescents worldwide included smoking, unhealthy diet, physical in-activities, violence and unintentional injury, mental health issues, poor self hygiene, unsafe sexual behaviour and alcohol abuse. This chapter ascertained that factors underpinning the health-risk among adolescents were psychological and physical development, peer pressure, environmental and social cultural aspects. Less information was available to identify the major health-risk issues in Indonesian adolescents, especially the statistics at the district level. Such statistics for the major health-risk issues in adolescents are necessary as part of the policy making process to develop a more effective intervention strategy for adolescent health. Therefore, this chapter pointed out the necessity to have district figures of health-risk issues among adolescents to prioritise the issues at a district government level in Indonesia.

Chapter three described the international development for preventive and promotion strategies to address adolescents' health-risk issues, including a comparison of conventional and integrated health promotion approaches and the implementation of such approaches in Indonesia. Based on the theory and international experiences in different countries, it concluded that the school setting approach, as an integrated health promotion approach, is a more suitable strategy to promote health for adolescents compared to conventional approaches that focus more on individual behaviour and psychological aspects. The health promotion setting approach is suitable to address adolescent health because it involves multiple strategies and focuses on personal, environment and social aspects. In the Indonesian situation, this chapter also identified a government report that indicated that issues in the program implementation include a large number of schools, difficulties in managing the program at a national and district level and the education sectors main concern for academic function of the students. However, there was not sufficient evidence to explain the difficulties and needs in implementing health programs within the school setting. This chapter concluded that it is necessary to explore the

challenges and needs of school-based health promotion at a national and district level from a health and education agency perspective as well as from the perspective of schools.

Chapter four explained the conceptual framework and methodology of this research. The conceptual framework illustrated the relationship between health-risk issues in adolescents, environment, social and peer pressures, as well as school-based health promotion as the strategy to address the health-risk issues in adolescents to prevent morbidity, disability, and premature death. This chapter explained the use of need assessment analysis and a case study to identify challenges and needs for school-based health promotion from the perspectives of decision makers, teachers, parents, and students. The location of this research was in Indonesia (Jakarta and Depok), in China (Guangzhou, Hong Kong, Macao) and in Australia (Queensland). This chapter also pointed out the limitations and strengths of this research from a methodology perspective. The limitations included the year of survey was conducted, limited data from the survey and limitation in data collection in China and Australia. The strengths of this research included the use of both qualitative and quantitative data, multi-countries evidence-base and the provision of alternative solutions or scenarios to address the challenges and needs for school-based health promotion in Indonesia.

Part two of this research consists of Chapter five to Chapter ten covering the findings, discussion, recommendations and conclusions. Chapter Five explored the national and district strategy for adolescents health in Indonesia and identified challenges and needs toward school health program from the perspectives of education and health officers as well as from the school community. The challenges were grouped into three main categories: human resources, funding and communication or partnership. The key barriers in human resources were low health awareness among Education officers including teachers and lack of capacity in management, advocacy and communication skills in both education and health officers. In terms of budget, the challenges focused on the amount and the miss-usage of existing budget. Particularly for partnership, the challenges identified related to difficulties engaging partners and maintaining effective partnership between the stakeholders. At the school level, teachers, students, and parents have a different understanding and awareness of adolescents' health, and this reflected the need to improve their health understanding and behaviour. One of the key findings showed the school community's (teachers, students, parents) believe that a school health program is

useful to take care of students if they get sick during school hours or to give first aid for the students. This chapter also found that the students felt that the teachers could use the religious aspect to promote healthy behaviour among students. This chapter concluded that Indonesia was facing problems both within sectors and government administrative levels including the school level at both a national and district government, which help explain the ineffective implementation of school-based health promotion.

Chapter six analysed the proportion of health-risk in adolescents using the data from Global School Health Survey in Depok, West Java Indonesia during 2006. This chapter discovered that the major health-risk issues included smoking, hygiene, eating food from street vendors, low nutrition foods in school canteen, lack of fruit and vegetable intake, unintentional injury and mental health related issues. This chapter pointed out that involuntary smoking (62.4% in males and 58.9% in females) was a major risk behaviour, while active smoking was a major issue in males (39.2%). With respect to food at school, the students were exposed to unhealthy food from the street vendors (43.4% in males and 31.8% in females). Although some schools had a school canteen, the food nutrition value was poor. Consuming food from street vendors is an important issue due to the use of chemical substances in the foods, low quality of foods and unhealthy methods of food preparation, which leads to short term and long term health impacts. The unintentional injury mostly occurred in males students during their sport activities in schools (46.7%). Regarding the mental health related issues among male students, this research found that more than one third of males were feeling neglected by parents, which means that they most likely need more attention from their parents. While among females students, about one fifth of them were feeling unhappy (lonely, sad, worried or attempt suicide). The health-risks are significantly different between male and female adolescents for almost all of the health-risks, with male students tending to have a higher proportion of health risks compared to females. These health-risk issues are similar in the three school types with good, moderate and limited resources. This chapter concluded that the proportion of major health-risk issues reflected those expressed by the students as issues to be addressed in the school-based health promotion program.

Chapter seven examined the barriers, enablers and future plans of school-based health promotion in the two case study schools. In term of HPS concept, the schools had tried to apply the concept but each school had a different experience and level of progress. This chapter found that both the school that had good resources and the school with limited

resources, were basically facing similar categories of barriers in implementing school-based health promotion, such as health curriculum, funding, supportive environment and community involvement. Obviously, the school with more limited resources was facing more severe challenges within each of the barriers categories. Both types of schools had typical enablers such as health awareness among the school leaders and sufficient support from the school foundation and alumni association.

Chapter eight highlighted lessons learnt from Australian and Chinese experience in HPS practice that can be adopted in Indonesia. This chapter discovered that the health promoting school practice in China tended to be very commercial economy driven in the regions. The schools assumed that applying the health promoting school concept might bring better school credibility and higher students' enrolment. Particularly in Hong Kong, the government was not the leading sector of the HPS program because the government tried to apply a free market systems to schools. The program relied more on the school capacity rather than government support. In contrast, the HPS in Guangzhou and Macao obtained very strong support from the government and programs were driven by the local health and education authorities. In Australia, the key lessons learnt were strong community support and high access of technical support in HPS practice. This chapter concludes that the lessons learnt from the experiences in Australia and China were; flexibility in selecting the program initiator or leading sectors which can be from non health or education sectors, non government or other potential community groups; support, motivation, adequate skill of school personnel are necessary for schools to apply the concept; schools with the support from the community should be able to address the funding issue in running HPS program.

Chapter nine contains a discussion of the major findings of this research, particularly focusing on the needs, challenges and future direction of the school-based health promotion implementation in Indonesia. The needs were explored from the perspectives of decision makers in health and education sectors as well as from the perspectives of school community. The major needs from the decision makers in health and education offices mainly concerned on adequate human resources, stronger partnership, improvement on advocacy and management aspects. Limited human resources, mainly referred to the quality or capacity of the health and education officers. The partnership between health and education was very superficial and it was identified that they needed

deeper and improved integrity within the partnership. Improvement in advocacy and management aspects were needed due to limitation in budget and managerial aspects.

Furthermore, chapter nine also concluded that in general the challenges in school-based health promotion in Indonesia are: applying the policies into practice; technical and structural relationships between national, district, school levels and community; and how to implement the program within a limited school capacity. The discussion chapter also highlighted that understanding the process of adopting global strategy into national and local strategy and strengthening the partnership between education and health sectors as key challenges. This research also found that in developing countries such as Indonesia, the country needs special efforts and a long time to adopt the global strategy into local strategy. Rapid changing of global development makes more difficult for developing country like Indonesia to "keep up" with the global strategy and make the program as an effective national or local strategies.

This chapter also discussed findings of major health-risk issues that can be used in prioritizing the health-risk issues for developing the intervention strategy. The proportion of major health-risk issues in adolescents can be used in the advocacy process to implement the school-based health promotion by using certain linking issues. The health issues that can be linked to the health-risk in adolescents are basically the major public health issues that have strong political and international impact such as global pandemic diseases, disability, low productivity, cause of death diseases, drugs and substance use and others.

In developing future direction, this chapter also discovered that key issues from experiences of China and Australia that can be adapted by Indonesia are flexibility of leading sector, strong community participation and partnership style. It concludes that the future direction for more sustainable school-based health promotion should be concerned with practical policy, effective partnership and community involvement. Practical policy refers to policy that is supported by detailed technical guidelines that are applicable for implementation in all types of schools and supported by accessible technical support from the health experts. The policy should be regularly evaluated and monitored in an appropriate way to improve program implementation. Direction to the effective partnership is basically referring to better communication between health and education sectors to avoid over expectation from both side. The partnership also

considers inviting other related potential partners in government and non government sectors, such as Ministry of Interior, Ministry of Religion, universities, private or industrial sectors and other health-related organisations. In addition to the strengthening the positive effects of implementation in school with good resources, the stronger community involvement is basically important for assisting he schools with limited resources. The schools with limited resources should empower local community members to actively support the health promotion and prevention activities in the school while getting more funding support.

The results of this research illustrate the link between theory and practice in health promotion concept for adolescent health in particular and contributes to the scientific development in adolescents' health, partnership, health promoting school concept and community participation. In terms of operational aspects, the research findings provide an important contribution for the government sector, community, and future research and development. More specifically, the research findings are beneficial for the government sectors, particularly in the Health and Education Departments in obtaining feedback for program improvement for adolescent health. This also includes improvement in relationship and collaboration between health and education sectors as the two key stakeholders in school-based health promotion. For the community, main discoveries of this research will be useful in improving community awareness of the importance of adolescents' health and participation in school-based health promotion. Focusing the health promotion in the school community also means promoting health to teachers, parents, and the surrounding community.

This research recommends issues for policy development, the school community and for further research and development. Recommendation for policy aspects includes further need relating to policy implementation and evaluation to develop more practical-based policy for school-based health promotion. For the school community, the recommendation is focused on the commitment and capacity to put health as part of the learning process in schools.

Specifically for the research and development, it recommends further studies on the relationship of academic function and health-risk issues in adolescents, exploring cultural and environmental aspects of the health-risk issues among adolescents, intervention or experimental based study to assess the effectiveness of the strategic models found in this

research, and operational research on the community involvement in school health activities.

In summary, this research has demonstrated the importance of understanding adolescents health and preventing the health-risk issues among adolescents to create young generation with better quality for the future. This research also highlighted that Indonesian government has supported the school-based health promotion with policy and strategies but the implementation is weak due to limited human resources capacity, limited funding and ineffective partnership from the government sector. There is a misconception among school community and education officers, that the school health program is for medical treatment rather than for the health promotion and preventive concept. This research concludes that extra strategies such as active community empowerment, effective partnership and capacity building are need to be done by the government to address the health-risk issues among adolescents through more effective school-based health promotion in Indonesia.

APPENDIX 1 National Operational Strategy Guideline of School-based Health Promotion in Indonesia

National Operational Strategy Guideline of School-based Health Promotion in Indonesia

1. Health service accessibility

   All junior high school (grade seven to nine) and senior high school (grade ten to twelve) and other same level of schools under PHC geographical coverage area should be able to be monitored by the PHC through routine monitoring visits and improving human resource quality.

   PHC have to apply the concept of adolescents health service or *PKPR* ("*Pelayanan Kesehatan Peduli Remaja*") in running the health service for adolescents in junior high school and senior high school or in other same level of schools.

2. Increasing the health service quality

   Improvement of school-based health program ('UKS') should be carried out through several steps as follow:

   a. Sustainable integrated plan
   b. Technical assistance, skill training, in class training
   c. Stage of 'UKS' implementation strata

3. Task authorization

   Task authorization can be done considering limited human resources, facilities, and time. The task can be authorized from the health officer in PHC:

   - To teacher and adolescents health volunteer to run the health service activities that can be managed by the school community.

- Between health officers in the PHC, organized by the head of PHC if necessary.
- Task authorization in city or district office level will be managed by the head of Health Office.

4. Level of service or assistance

The level of service or assistance for adolescents students will be given stepwise depending on the local capacity. The level will be grouped into four strata (*Minimal, Standard, Optimal and Paripurna*). The detail of activities of health education, health service and healthy environment in each strata are in the following table:

Table 1. Stage of "UKS" strata

Stage of 'UKS' implementation strata	Health education	Health service	Healthy Environment
Minimal	1. Physical health education is included in the curricular 2. teacher make education health learning plan 3. guide book for teacher is available 4. reading materials are available 5. at least one teacher for physical health education	1. Running of adolescent health counselling. 2. Carrying out health screening for students 3. measuring students body weight and height 4. monitoring the food street vendor outside school. 5. running activities on first aid and P3P	1. Use safe water 2. Hand washing tools are available 3. Toilets are in good condition 4. Rubbish bin are available 5. Water waste management are working properly 6. School yard is available 7. 'UKS' room is available 8. Cigarette smoking poster is displayed 9. Drug use poster is displayed 10. Monitor the school canteen/tuck shop 11. Carrying out "3M" activity in weekly to prevent mosquito. 12. School canteen or tuck shop is available 13. Praying room is available.
Standard	1. Complete the minimal strata above 2. Physical health education is included in the extra curricular activity 3. have physical health education teacher with ratio of 1:24 per week 4. have health education media (poster, etc)	1. Complete the minimal strata above 2. Conduct a routine health test for every 6 months, including TB test and body weight 3. Record health test result on students health card ('*KMS*') 4. Referral system is available to follow up the health test if necessary. 5. Have trained adolescents health	1. Complete the minimal strata above 2. Supervising the food street vendor outside school in regularly. 3. Have safe school fence 4. Have green area 5. Have students counselling room 6. Have 'UKS' room with basic

Stage of 'UKS' implementation strata	Health education	Health service	Healthy Environment
	5. Have students counsellor 6. Carrying out physical fitness test and recording 7. Include adolescents health education (reproductive health and drug use) into the extra curricular	volunteer ('*KKR*'). 6. Provide health counselling for students 7. Monitoring the food street vendor outside the schools	facilities.*) 7. School area is free of mosquito breed. 8. Conducting free smoking school area and free drug use. 9. Distance between white board and first row seats in class is 2.5 metre
Optimal	1. Complete the standard strata above. 2. Health education is integrated in other subjects in the curriculum 3. Conducting physical fitness test 4. Have 'UKS' counsellor teacher. 5. Conduction health education evaluation. 6. Have active peer counsellor activities in 'PKHS' (healthy life skill education) 7. Have adolescents health education (for reproductive health and drug use), integrated into the subject curriculum.	1. Complete the standard strata above. 2. Fund for 'UKS' is available. 3. Have 10% of students as trained health volunteers. 4. Conducting adolescents health counselling by the peer counsellor.	1. Complete the standard strata above. 2. Have hand washing facilities with soap and running water. 3. Have washing facilities with running water for the school canteen and healthy and clean school canteen. 4. Rubbish bin is available in each class room and has final waste disposing in school. 5. Have clean and healthy toilets for students and school staffs. 6. Have sufficient size of school yard for students to exercise and do morning ceremony. 7. Have nice and safe school fence. 8. Have school garden or traditional herbs garden. 9. Have separate 'UKS' room with adequate facilities.**)

Stage of 'UKS' implementation strata	Health education	Health service	Healthy Environment
			10. School is free of smoking, drug use and alcohol drink.
Paripurna	1. Complete the optimal strata above 2. Have sufficient number of 'UKS' counsellor teacher. 3. Conducting partnership or collaboration activities with related institutions (PHC, Police, Red cross, Agriculture, etc). 4.	1. Complete the optimal strata above 2. Carrying out communication forum of peer counsellor. 3. More than 10% of adolescents health volunteer have been trained.	1. Complete the optimal strata above 2. School canteen provide healthy foods with balance nutrients contents and canteen personnel have been trained. 3. Use safe water 4. Separate organic and non organic waste. 5. Have toilets with ration 1:20 students 6. Good and healthy water waste management 7. Have school garden and utilized it for learning process and manage the plantation product in school. 8. Healthy class room (adequate ventilation and lights) 9. Students density ration is 1:1.5 – 1.75 m2. 10. Have ideal or high standard 'UKS' facilities.***)

Note:

*) "UKS" room with basic facilities such as:

- Bed
- Body weight scale, height measurement, snellen chart.

- First aid box and medicines (betadine, paracetamol, '*oralit'*for diarrhoea)

**) "UKS" room with complete facilities such as:

- Bed
- Body weight scale, height measurement, snellen chart.
- First aid box and medicines (betadine, paracetamol, '*oralit'*for diarrhoea)
- Medicine cupboard, referral book, students health card, posters, organization structure, time table for student in charge .
- Sink for hand washing, record of students who got sick in school.

***) "UKS" room with ideal or high standard facilities such as:

- Bed
- Body weight scale, height measurement, snellen chart.
- First aid box and medicines (betadine, paracetamol, '*oralit'*for diarrhoea)
- Medicine cupboard, referral book, students health card, posters, organization structure, time table for student in charge .
- Sink for hand washing, record of students who got sick in school.
- Dental care unit
- Models of human anatomy.

APPENDIX 2. Health Promoting School Case Studies in Queensland

1. Brown Plains State High School

Brown Plains State High School is one of the large well established schools in Queensland. It is located in Logan area, south of Brisbane. The total number of students in this school is about 1200 students, while the number of teaching staff is 80 people, with 20 support staffs.

This school decided to apply the health promoting school concept on 1998. The main reason in adapting the health promoting school approach is to improve and protect the health and well being of the school community and to address health issues identified by the students.

The first step was creating a health promoting school working party, in order to develop plan of action based on the priorities health issues in the school. The priorities health issues in this school were: maintenance and hygiene of the student's toilet, smoking, and social health for male students.

The second step was the implementation of the activities. They decided to focus the activity of smoke-free school. To support the activities, they developed the policy of a smoke-free school and informed it to school staffs, students, and parents.

The smoke-free policy also applicable for the school staffs, and they can be the role models of healthy behaviour for the students. The teaching staff also put smoking and health in the year 8 student curriculum. The school provide support for students or staffs who want to quit or reduce smoking.

The health promoting school working party extended the existing health related activities that already implemented before, and make sure that the activities follow the health promoting school concept. They set up a parent committee and student committee to gain contribution in school activities and events. They also gave award for Health Promoting School Prefect.

Experience from this school shows the main factors of the applying health promoting school concept is the strong contribution from health promoting schools working party as well as great support from students and staffs.

Meanwhile the working party assumed that they did not put sufficient concern on involving the wider range of school community and developing collaboration with other existing groups in the school, which were very important in the implementation of the activities in school.

Several future plan focuses include giving more consideration on three main aspects, such as curriculum, teaching, learning, school ethos and environment, and school partnership and services, in the developing the program plan. They also plan to create stronger links with other groups in schools as well as from outside school or any agencies that relate to the activities in health promoting school program.

2. Chevallum State School

Chevallum State School is located in south-east Queensland. It is a semi-rural small primary school. It has about 200 students enrolled. They have 11 teachers in total and some visiting specialists and support teachers. This school is a multi-age school, where allow students in different ages and accommodate their needs in one class.

The health promoting school approach has been initiated in this school on 1999. This school started to apply the concept of health promoting school after they got better understanding of the concept and they believe that school's philosophy and operation were actually already in line with the health promoting approach.

They applied the approach in comprehensive activities in school. The school feel more confident to integrate the health promoting school approach in this school because it is a smaller school.

The health promoting school strategy was focused on particular program that become the main health issue in this school. The students need further program on gender issue especially in the playground, as they expressed that the gender and power brought negative influence in student behaviour.

The school decided to add some material in the curriculum in related to power, bullying, violence, and gender construction. They integrated the material into the existing resources, such as 'Enough is Enough' and 'No More Fear'.

As encouraged by the school community, the school used the health promoting school approach to create a more interesting and supportive social and physical environment in the playground. The school decided to construct the learnscape, after done research on play preferences, attitude to the school environment, play ground around the world, and having class discussions and information evening.

They involved local professionals to assists the students and teaching staffs in designing the learnscapes. The local professionals include an author and art design consultants. The learnscapes was build to provide outdoor spaces for class room as well for play activities. The construction includes three different places, which are amphitheatre, playground, and sensory trail.

They got great support in funding and involvement from the school community members, for the construction. They involve the students actively to promote the plans and get more support from the school community members.

They feel that the health promoting school approach can be used as the basic concept of other school activities. After the successful of the learnscape construction they were moving on to consider other health issue and activities in the school using the health promoting school concept.

They continued applying the health promoting school approach for the school's behaviour management program, that called William Glasser's 'Quality Schools' approach. As the output from the parents and students meeting, they identified three types of behaviour that need to be considered, which are 'caring for ourselves and others', 'caring for our learning', and 'caring for our environment'.

The school change the word in school rules to create more healthy environment, using the word, "I care for my environment and the evidence of this is…" instead of " You shall not run through the garden beds". Other message for misbehaviour is "Were you showing a care for your own learning and your own safety?". They also have peer support group for the students.

The school community has important role in implementing the health promoting school approach in this school. They actively involved in develop annual action plan based on report from previous activities as well as from the needs of students and school environment. Some of the main roles of the school community are: (1) establishes the school's vision and goals, (2) identifies concerns of members of the school community, (3) identifies issues that need to be addressed within the school.

Partnership also is an important aspect in the health promoting school implementation. They made a plan for more effective partnership between school community and the school, and persuade all partners to actively involve in the health promoting school activities.

This school has supportive school's philosophy and aims that lead them to get better achievement in health promoting school implementation. Also, the supportive school community and school principal gave substantial contribution to the achievement. Besides, staff's enthusiasm and willingness as well as support from the school's administration bring great positive influence for the achievement. Community member also plays a substantial role in getting sufficient supports from community as well as from the professionals and business. Significant funding support also given by several independent institutions such as Rural Arts Development funding, Queensland Health grant, Lending a Hand Funding and Telstra: Women of Achievement grant. Other strong support also had been given by the members of the Sunshine Coast Public Health Unit, who already worked together with the school for about five years.

However, some barriers in implementing health promoting school approach in this school also found. The barriers related to the need to develop skills to apply the plan. The school feel that they were slightly slow in adopting the health promoting school approach, and they really eager to speed it up.

Health promoting school approach brings very positive and constructive impact for the school. After got better understanding and experience in health promoting approach, they learn about better way to develop other activities in school. They use the health promoting school approach to plan the other school activities, including priority identification, action planning, policy development, annual operational planning and budgeting. The school has philosophy that focuses on happiness of individual and physical well-being, and also move toward student-centred approach.

The health promoting school approach inspired the school to direct the teaching and learning to a constructivist, cooperative learning approach. The school is confident that they will apply the approach for the following next 12 to 18 months. They believe that the approach and activities can represent the school community needs, because it involved variety of school community members.

3. Eatons Hill State School

Same with other schools in the case study, the Eatons Hill State School initiated the health promoting school approach on 1999, one year after the school opened. This school has 310 primary school students, and 100 preschool students. It is located in outer suburb area of north Brisbane. The school provides multi-age classes with lower, middle, and upper primary sections. The applied teaching method based on the value of cooperative learning, effective learning principles and teaching, early childhood practice, health promoting schools and learning through, with, and about technology.

This school established a school council that actively involve in strategic processes. The school council also had legal contribution and concern to improve school-based management for the future.

The concept of health promoting school firstly initiated in this school in the very beginning of school establishment. Although the school is very new, the principle and school personnel were very confident to apply the health promoting school approach, just one year after the school was established. The school believe that the health promoting school approach would enable the school to address the health and well-being issues of the students and school community members. The Parents and Citizens' Association give a full support to the health promoting approach.

This school implement the health promoting school approach through several main actions below:

- The school conducted several meetings for the school personnel and community to introduce the health promoting school concept and make them have better understanding of the benefits and impact for the students and community health.
- The school established a Health Promoting Schools Working Party, which consisted school personnel and parents.

- A survey had been carried out to identify priority health issues among students, parents, and staffs, as well as to determine the strategy addressing the issue. The survey found several issues that need to be concerned. The issues include healthy tuckshop, environmental care and recycling program, sun safety, bullying, and stranger danger.

The enabler that lead to successful health promoting program in this school are the commitment, enthusiasm, and active participation of members of the school community, including the support from the school principal which was followed by supportive school staffs. The Health Promoting School Working Party also plays an important role in all the activities and encourage school community member to support the activities.

Besides, other institutions or organization outside the school also gave positive and constructive support for the health promoting school strategy. The activities were supported by some government and non government organizations, including business and community organizations, as well professionals groups. They gave support by giving valuable suggestions and assistance in motivating the Health Promoting School Working Party to running the activities.

This school faced one barrier that related to the consultation with stakeholders. They felt that the Health Promoting School Working Party failed to have adequate consultation to all of the stakeholders before implementing the health promoting schools activities. So that at the beginning of the school year they held health promoting school workshop which invited all the stakeholders, but it was not well attended by some of the members of the school community.

The health promoting school approach brings significant benefit for the school community. The students feel proud of participating in all the activities that make their school has healthier environment. The school community, including the staffs and parents also experience having better understanding towards health and well-being and their significance in the lives of school community members. The positive transform of thinking by the school community refers as an important progress by the Health Promoting Schools Working Party.

This school plans to keep expand and integrate the activities as the school grows in the future. They plan to modify the component of curriculum, teaching, and learning of the health promoting schools framework as in more well planned way. They plan to provide more comprehensive health contents and activities in the Health and Physical Education Syllabus (1999) for students in year 1 to 10.

The working party members are fully aware that it is essential to provide sufficient time to educate school community about the health promoting schools approach, so that they will have better understanding and giving positive and active support for the successful of the implementation health promoting school approach. Also, to address different health issues, the school community require certain time to access information, resources, and discuss with other people. They will have better awareness of the approach and understand their role and participation by giving adequate time for them to digest all the information and experience to implement more successful health promoting school strategy.

*4. **Elonora State School***

Elonora State School is one of the large schools in Gold Coast. It is located in the suburban area. This school has 85 staffs and 1100 students from preschool to year 7. They have school council and Parents and Citizens' association that are giving strong contribution and very active.

The school started to concern about health earlier than other previous three schools They focus their concern on the health and safety of the students and staffs in the school. They firstly contacted the Queensland Health on 1994 and developed a plan particularly for toileting behaviour among the students at school. They begin the program with the survey and found that the students were feeling unsatisfied with the toilet at school and the student's behaviour in the toilet. The school decided to focus the health activities on toilet hygiene.

This school worked collaboratively with Gold Coast Public Health Unit and Key Learning Area Regional Coordinator (KLARC) to develop particular program addressing the toilet hygiene issue, especially for the younger children. They called the program a Germbuster program, which aimed to increase awareness of healthy toilet behaviour, the danger of germ and diseases, and how to wash hands effectively. This program was

addressed particularly for the younger students, and uses peer educators in giving health education to the younger students.

The Germbuster program was designed using a health promoting school concept, focusing on the three components as follow: curriculum, teaching and learning, school ethos and environment, partnership and services. The activities include supportive environment such as school provides soap and towel dispenser in school toilets, supportive home environment by providing resources and education for parents, so that parents reinforce good hygiene behaviour for students at home. They also add health units in the curriculum, so that students can learn more about human physiology and body function.

The school put funding support from the Queensland Health was vital in the health promoting school implementation. Significant support from the school community, particularly from administration, also brought successful for the Germbuster program.

Barrier in the program implementation was the fact that organizing the buddy system and establishing Germbuster program were time consuming. Besides, teachers and students experienced having not enough time to participate in the program. Those barriers are important to be concerned to ensure the sustainability of the program in the future.

The school community including students, parents, teachers, and administrator learnt more about health and safety after actively participated in the Germbuster program. Some improvement of student's behaviour and awareness on health are increasing knowledge of human bodies and how they function, better toilet behaviour, and especially for older students, they have new skill as peer educator. The school community also learn more about developing and maintain relationship with other partner outside the school, such as with the health promotion officers and advisory staff.

The school community already made a plan for the future health program, which are focused on injury and nutrition issues. They will implement the Kidpower program as the next health program to address the injury issues among the students as well as the school community as a whole.

Having experience in applying health promoting school concept, the school community fully understand that they need to keep continue developing future program for health and

well-being of the school. They are aware that the students have positive interest to keep their school safe and healthy.

*5. **Elliot Heads State School***

Elliott Heads State School is sort of remote and small school located in 22 km east of Bundaberg. The school has 80 students from wide range of socioeconomic backgrounds, and has high number of aboriginal and Torres Strait Islander students, who are the indigenous population in Australia. Typical characteristic of this school is that it provides high level of pastoral care and a balance curriculum to meet the students' need.

The health promoting school concept had been introduced initially to this school by the Central Public Health Unit – Wide Bay, as they invited all the schools to apply for seed money to implement the health promoting school approach. This school and other 11 schools in Wide Bay had successfully got the grant.

This school had an idea of involving the community outside the school in the school activities especially to address the health issues. One of the strength or characteristic of the Wide Bay community is significant number of elderly population. Therefore the school decided to involve the elderly community to actively involve in the school health related activities. Involving elderly community aimed to gain student's awareness and manner to maintain good relationship with elderly and understanding and respect each other. The school believe that good communication between these two wide age different will make positive influence to the student's well-being and general development.

Therefore, this school developed a program called : Adopt- a Granny/Grandpa social networking program. They implemented the program using the health promoting school concept. The program basically aimed to enable students has relationship with older people in the community, so that will bring positive image of the school to the community.

The school put the Adopt a Granny/Grandpa social networking program as part of the school's Annual Operation Plan and Budget. In that case, as health promoting school concept was used for the program strategy, it is a positive start to make it a formal part of the school's program. The program had two volunteers from the Parents and Citizens' Association involved as Community Liaison Officers to coordinate and manage the social networking program.

In order to get public interest and active response, publication was done using local media, such as school newspaper and local newspaper. Initially, more younger people gave response to join the program rather than the target group, the elderly people. Then, the school sent invitation letter to older people, especially those who had certain skills and talent to share it within the school community. The school provide findings for them to transport from the residential to the school once every fortnight. They became a member of the Elliott Heads Parents and Citizens' Art and Craft club to make handcrafts, and donate what they earned for the school.

The elderly, parents, school staffs, and students, they worked together in the program. Although, the elderly people sometimes feel not comfortable individually working with the students directly, so they prefer to work with the parents and school staffs who then worked with the students occasionally.

Some enablers found in the successful of the program in this school include the role of Community Liaison Officers and the funding support from the Wide Bay Health Promoting Schools Seeding Grant.

However, this school faced some barriers in the program implementation. The barriers were related to the geographical aspect, as the school was located in rural location, which need special effort to access, especially for the elderly. Another barrier is related to how to get funding for maintaining, continuing, and expanding the program. Also, the school found that most of the elderly didn't have sufficient time to participate in the program due to other commitments they engaged with, while those who had time they had less access to the school.

The school feel getting benefits from the Adopt- a – Grandma/Grandpa program in a way that involving the wider community outside the school community. The school community and elderly community as the biggest population in the community can learn and communicate each other in more interesting way. Both groups feel having significant outcomes from the program. The elderly population feels that the program brings to positive influence to the elderly mental health and well-being. Meanwhile, the outcome from the student's side is that they can learn to directly interacting with older people and understand each other.

The school is considering to put the Adopt-a-Granny/Grandpa program as health promoting school activities that will funded independently by the school. The school

aware that the next health promoting school activities has to be funded independently by the school and Parents and Citizens' Association funds, instead of expecting funding support from the Government. They also plan to involve and work more with indigenous population so that the students and school community can learn and understand more about indigenous culture. The school trying to the school more accessible especially for targeted population such as elderly and local people, so they can actively involve in any school activities and network. Future health promoting school activities may focus to improve nutrition status among students as they found that some students experience having less nutritious breakfast and lunch.

The social networking as part of the main strategy in applying the health promoting school, is one of the important aspect that the school community learnt a lot, especially in the community with wide range of age different and diversity. The school has better understanding about the effective way to teach diversity, such as to let children experience diversity, to meet people from diverse age groups and cultures, to encourage respect for diversity, including age, and to encourage respect for elders. The school has philosophy that "Our core business is education – not just academic education, but also social education".

6. Jundah State School

Jundah State School is a small school that located in a small town at the south west of Longreach, which is a small town with the population of 100 people. The school only has small number of students, 20 students in total of five year level. The number of school personnel is five people, which are a full time teaching principal, a part-time teacher aide, administrative assistant, cleaner, and grounds person.

The school decided to learnt more about health promoting school strategy for the first time during one of the meeting with the Parents and Citizens' (P&C) Association. Previously, the school already had the school health program that carried out with collaboration with the local Primary Health Centre and other community group.

The school and P&C Association realized that the health promoting school concept is in line with the school program plan. The local Queensland Health, Central Public Health Unit gave the school a chance to get funding grant to implement the health promoting school approach. As the school concerned about the sun safety issues, they developed a

sun safety program using school health promoting approach and requested funding support from the Queensland Health, Central Public Health Unit.

Several health-related activities had been done before they learnt about the health promoting school. The activities include health tasks every fortnightly, and an 'Adopt-a-Cop' program which already run by the school five years before the implementation the health promoting school. They change in the way identifying the health topic after they learnt about the health promoting school concept. The health topics were selected according to the students need instead of from the school perspective. They experienced some progress in the attendance of the health talk program from at least 50 % to almost full attendance. Before implementing the health promoting school activities, the school conducted a survey for parents to gain support for sun safety program in the school. The school also got support from the Queensland Cancer Fund to educates students about the sun exposure health risk and skin safety. Particularly for sun safety, they have a program called a "No Hat – No Play" policy. The school put the wide-brimmed hats as part of the school uniform and it is compulsory for the students to wear the hat for any outdoor activities in the school. The school also enforce the student to use sunscreen when swimming, and provide portable shade shelters for outdoor activities.

Some enablers found during the implementation of health promoting school were intense support from staffs at the Central Public Health Unit in Rockhampton and supports and encouragement from other schools as well. Parents and staffs in school also gave very significant contribution of the successful of program implementation particularly as a role model for the students. Other enabler is that that the school community can access the resources from the Qeensland health Promoting Schools Network homepage, so that they can learn more and have better understanding about the program.

Barriers found in the HPS program implementation was that the limited human resources in the school, which is small school and located in remote area. The HPS program bring some benefits for all of the group involved including the students, teachers, parents, and the school community. The students get the benefits the most, as they have better understanding and perception of health and health services including hospital. The parents also become more involve in the school activities. The school community have stronger networking and partnership with government and non government agencies that relate to school community.

The school plan to extend the program focusing on the Melanoma Day on the following year, involve the community in the 'save our skin' project plan. They also plan to maintain all the current program and developing next program for the next following years. The health activities in the school are carried out outside the school hours, and they plan to try to integrate the health program into the mainstream curriculum.

At the beginning the school did not think that the outcome would be special and beneficiary. As the process going on and they learn more about HPS, they are pleased with the achievement. Even though the process was challenging they stressed that maintaining the practices started and continue all the process is very important. "We were able to achieve because we set an obtainable goal"

7. School of Today

The School of Today is located in Pandoin, Rockhampton. It is a small independent school, which has 35 students and 7 school staffs. The specific characteristic of this school is that has a wide variety of students including students with learning disability and chemical sensitivities. They provide a safe and healthy caring environment, that they believe can reduce the effect if chemicals and other health problems on academic and social development and skill.

The school first heard about the HPS program from the Central Public Health Unit in Rockhampton. In fact they already apply many of the HPS approach in their previous health activities in the school. The school had adopted a health promoting concept since it was initiated two years ago by a naturopath.

The school put creating healthy environment as the main aspect in teaching and learning activities in the school, according to the need of the students. As each student has specific different need, the school applying the learning concept more flexible on individual need and capacity. The school provide healthy environment by using natural product, organic product, fresh food, and other non chemical use product in most of all of the activities and facilities in the school. They also have daily exercise activities every morning for half an hour. As they concern most about the environment, they intentionally built the school in the bushland area far from the town to avoid the chemical pollutant. They commit to raise people awareness of the adverse effects of chemicals, preservatives, and additives in food on human health especially on children who has Attention Deficit Disorders symptoms.

Several enabler aspects of the implementation of HPS concept in this school are highly motivated and dedicated school staffs and high number of volunteers that give significant contribution for all the activities, financial support from the government, and parents support. Meanwhile some barriers found in this program implementation include the challenging efforts to meet the individual need of the student, difficulties in making the professional and agencies more understanding about the benefit of the program for health. The supports are more from academic community rather than from the health sector.

Students and their families, school staffs, and volunteers have the most benefit from the program, which affect the lifestyle. The most obvious improvement behaviour among the students is the eating behaviour, which lead to better ability to concentrate on their academic performance.

For the future plan, the school decided to continue the program and focusing on several issues such as promote school's principles and policies to parents, give simple advice about how to apply health aspect in real life to families, and demonstrate the positive impact of health and surrounding environment for the child with problems and their families as well.

The school feel that it needs a lot of effort to convince the parents about the important of health aspect in academic performance of students in the school as well as for the students families and school community well being. Therefore, it is crucial to educate and direct everyone in the school community including parents, students, teachers, staffs and volunteers, so that they will have better awareness and understanding about health.

APPENDIX 3. Ethic Approval

APPENDIX 4

In Depth Interview Guideline

In Depth Interview Guideline

Policy Makers/Decision Makers (central and district level)

Knowledge and Attitude toward adolescents health

1. How do you think the health of adolescents in Indonesia, especially age 12 – 15 years? Is that priortiy? Explain please
2. What do you think the health issues and its related factors during adolescents? Explain please.
3. What do you think the most urgent issues to address health status among adolescents? And why? explain please.
4. What sectors do you think that responsibility for improving adolescents health? Why ? please explain.
5. What are your expectation regarding improving the health of adolescents in the future?
6. How do you think about the concept of health promoting school?

Process implementation

1. How do you think about the existing health programs or intervention for adolescents? (what are the stakeholders? What are the programs? How's the implementation?) please explain.
2. How do you think the implementation of school health program? Please explain.
3. If the school health program has been running well, what are the activities and when, where, and how did it goes? What are the strength and achievement, what factors contribute to the good achievement? Please explain
4. If the school health program has not been done yet, why? Please explain
5. what are the barriers, benefits, expectation and plan for the future in the implementation of school health program or health promoting school?

Budgeting

1. How is the budget allocated for the school health program? What do yout think about the budget? Please explain.
2. What are the budget sources for the school health program? How's the procedure of budget allocation? Please explain?
3. What are the barriers on budget? Why? How to solve the issues? Please explain
4. What are the expectation and future plan regarding the budget for the school health activities? Please explain.

Partnership

1. In your opinion, how do you think the patnership in school health program have been developed? Please explain.
2. What are the partnership activities tha have been carried out? Please explain.
3. Whar are the barriers in partnership? How dit it happen? Why? And how to address that?Please explain.
4. How do you think to run more sustainable and effective partnership in school health program?
5. How do you think the coordination between the district and province government in the implementation of school health program? Please explain.

Community Participation

1. How the community participate in the school health program? Please explain.
2. What are the school activities that involve community? If none, why? Please explain.
3. What do you think the key success of community participation in supporting the school health program? Please explain why?
4. What are the barriers in engaging the community to participate in school health program? Why ? please explain
5. What do you think the community needs to enable the community actively participate in the school health program? Please explain

Health curriculum in junior high school

1. How is the health education included in the junior high school curriculum? Please explain.
2. What are the health related subjects that should be understood by the students? Please explain.
3. What are the health related subjects that important for adolescents?
4. How have the health curriculum been developed? Who are the stakeholders involved? Who should be involved? Please explain.
5. What are the barriers regarding the health curriculum? How to address? Please explain.
6. How are the effective teaching methods for health subject in adolescents?
7. What are your expectations or future plan for health curriculum in junior high school?

Recommendation and Expectations

What are your general comments, recommedantion and expectation of school health program for adolescents as well as the health promoting school.

In Depth Interview Guideline

Food Providers (school canteen/street vendor)

Knowledge and Attitude toward adolescents health

1. How do you think the health of adolescents, especially for the junior high school age in Indonesia? Is it important? Please explain.
2. What are the health issues and its risk factors among the adolescents? How's their lifestyle in present time? Please explain.
3. What are the important aspects of addressing the health issues in adolescents? How and why? Please explain.
4. What do you think about foods for adolescents? Is it important for adolescents? Why? Please explain.
5. What are the foods/drinks that have negative impact on health? Why? Please explain.
6. What are your expectation for the health of adolescents? Why? Please explain.
7. Have you ever participate in training or courses on food in relation to health? Please explain what, where and when.
8. Have you ever heard about UKS or school health program? Please explain, how you understand it, what are the benefits and your recommendation? If not, do you want to learn?

Food at school

1. How long have you been selling foods in this school?
2. How do you think about selling the foods here? Either negative or positive comments, why? Please explain.
3. What do you think the foods that have positive and negative impact on health?
4. How do you usually prepare the foods? Where, when and who? Please explain
5. What are the most favourite food/drinks that students like the most in school? Please explain.
6. How's the school organize the school canteen? Please explain
7. How do you decide the price of the foods? Please explain
8. How do you maintain the cleanliness and hygiene of the foods/drinks? Please explain
9. How do you manage the equipment and facilities? Please explain.
10. What are the barriers in providing foods/drink for the students? How do you address it? Please explain.

Recommendations and expectation

What are your recommendations and expectation and future plan?

In Depth Interview Guideline

Parents

I. Knowledge and Attitude toward adolescents health

1. How do you think the health of adolescents in Indonesia, especially age 12 – 15 years? Is that priority? Explain please
2. What do you think the health issues and its related factors during adolescents? Explain please.
3. How do you think about the life style or health behaviours of adolescents? Please explain.
4. What do you think the most urgent issues to address health status among adolescents? And why? explain please.
5. What is your understanding about health? How do you think healthy adolescent looks like? Why? Please explain.

II. Health Risk Behaviour

1. What do you understand about unhealthy or health risk behaviour? Especially in adolescent? Why? Please explain.
2. What are the health risk behaviour that common among adolescents? Please explain.
3. What do you think about smoking behaviour? How does it relate to health? What about other health risk behaviours such as bullying, sex abuse, violence, personal hygiene and premarital sex? And specifically in adolescents? Why? Please explain.
4. What do you think your son/daughter behaviour related to the health risk mentioned above? Please explain.
5. How should your children understand about the sexual and reproductive health? Why? Please explain.
6. Have you ever explain about sex to your daughter/son? How did you explain? If never, why? When and how do you think the best time and way to explain about sex to your daughter/son? How your daughter/son response on that? Please explain.
7. What kind of foods/drink that bad for health?
8. What kind of foods/drink that your daughter/son like the most? Please explain.
9. What kind of exercise/sport activities that your daughter/son use to do? How often does your daughter/son do the exercise at home or after school hour? Please explain.
10. Do you always give pocket money to your daughter/son? How big is that? Please explain.
11. How do you monitor your daughter/son in using the pocket money and their daily activities including school activities? Please explain.
12. Do you always prepare food at home for your daughter/son to bring to school? Please explain.
13. What do you think your daughter's /son's health in general? Please explain

III. For parents who smoke cigarette

1. How long have you been smoking? What are the reason you start smoking and become smoker? How do you feel when you smoke? What happen if you don't smoke?
2. Where do you usually smoke? With whom do you usually smoke? At home or other places? How often do you smoke inside the house?
3. Do you know the health impact of smoking cigarette? Please explain

IV. School based program

1. Have you ever heard about school health program or health promoting school? If yes from who? Please explain.
2. How do you think about the school health program in related to adolescents health? Please explain.
3. Have you ever heard about clean and health behaviour program? If yes from who? Please explain.
4. How do you expect the health program can support the adolescents health now and in the future?

V. Saran/Harapan

What are your recommendation about the adolescents health? Please explain.

In Depth Interview Guideline

Student

Knowledge and Attitude toward adolescents health

1. How do you think the health of adolescents in Indonesia, especially age 12 – 15 years? Is that priority? Explain please
2. What do you think the health issues and its related factors during adolescents? Explain please.
3. How do you think about the life style or health behaviours of adolescents? Please explain.
4. What do you think the most urgent issues to address health status among adolescents? And why? explain please.
5. What is your understanding about health? How do you think healthy adolescent looks like? Why? Please explain.

Behavior Risk Factors

1. What do you understand about unhealthy or health risk behaviour? Especially in adolescent? Why? Please explain.
2. What are the health risk behaviour that common among adolescents? Please explain.
3. What do you think about smoking behaviour? How does it relate to health? What about other health risk behaviours such as bullying, sex abuse, violence, personal hygiene and premarital sex? And specifically in adolescents? Why? Please explain.
4. What do you think your son/daughter behaviour related to the health risk mentioned above? Please explain.
5. How should do you understand about the sexual and reproductive health? Why? Please explain, who explain it to you?
6. What kind of foods/drink that bad for health?
7. What kind of foods/drink that you like the most? Please explain.
8. What kind of exercise/sport activities that you use to do? How often do you do the exercise at home or after school hour? Please explain.
9. Have you ever experienced injury at school? Please explain.
10. Do you always have pocket money? How big is that? Please explain.

School based program

1. Have you ever heard about school health program or health promoting school? If yes from who? Please explain.
2. How do you think about the school health program in related to adolescents health? Please explain.
3. Have you ever heard about clean and health behaviour program? If yes from who? Please explain.
4. How do you expect the health program can support the adolescents health now and in the future?

V. Saran/Harapan

What are your recommendation about the adolescents health? Please explain.

In Depth Interview Guideline

School Teacher

Knowledge and Attitude toward adolescents health

1. How do you think the health of adolescents in Indonesia, especially age 12 – 15 years? Is that priority? Explain please
2. What do you think the health issues and its related factors during adolescents? Explain please.
3. How do you think about the life style or health behaviours of adolescents? Please explain.
4. What do you think the most urgent issues to address health status among adolescents? And why? explain please.
5. What is your understanding about health? How do you think healthy adolescent looks like? Why? Please explain.
6. Which institutions do you think contribute to the adolescents health? Why and how do you think they contribute to the adolescents health? Please explain
7. What do you expect the adolescents health in the future? Please explain

Resources

1. How do you think the quality and quantity of human resources in your school? Please explain.
2. What do you think the capacity of teachers in your school in giving health education to the students? Please explain
3. Is there any extra curriculum activities that related to health? How do you manage the activities and the budget for the activities? What are the barriers and needs? Please explain.
4. How important is the school canteen for the school community? Please explain
5. How the school manage the school canteen? If no school canteen, why? Please explain.
6. How do you think the quality of the school canteen, if available? Please explain
7. What do you think the good school canteen? What do you need to provide good school canteen? Please explain.
8. How do you think the dietary behaviour among the students in your school? Please explain. Why do you think students buy foods from street vendor? How do you manage the food street vendor?

Community Engagement

1. Do you think we need to invite the community for the school health program? Why? Please explain
2. How do you think the community contribute to the school health program? Please explain.
3. What are the barriers to invite the community for the school health program? Please explain?
4. What do you need to improve the community engagement for the school health program? Please explain.

School Health Program

1. Do you have a school health program in your school? Please explain if yes or no, whether the program is running well or not? What are the barriers in the implementation? Please explain.
2. What are your plan for the school health program in the future? How do you make the plan? Please explain.
5. Have you ever heard about clean and health behaviour program? If yes from who? Please explain.
3. How do you expect the health program can support the adolescents health now and in the future?

For Biology Teacher

1. How long have you been teaching biology in this school? Please explain.
2. How do you think the quality of health material in the school? Please explain.
3. What do you think the barriers of giving health education to the students? Please explain. How do you manage? Please explain.
4. What do you need to give health education to the students? Please explain.
5. What do you think the students interest toward the health education? Please explain.
6. How do you explain to students about sex education and reproductive health? (if you did) if not why? How do you think the best way to explain about sexual behavior to student? Please explain.
7. What did you teach in health education (if you teach health education)? Did you include smoking, healthy diet, alcohol drink, mental health, bullying, drug abuse and physical activity, in the health education? If yes please explain, If no, why? Please explain.
8. Have you ever heard about any health issues from the health workers? Please explain.
9. What do you know about clean and healthy behaviour? Is that included in the health education content? Please explain.

For Sport Teacher

1. What are the barriers in teaching sport to the students in your school? How did you manage the barrier? Please explain
2. What do you need to be a good sport teacher in your school? Please explain.
3. Tell me more about school competition in sport, how was the process? what are the advantage and disadvantages for the students
4. Tell me about your capacity in teaching sport in school? What do you need to improve your capacity? How do you think the sport facilities in school? Please explain.
5. Give explanation on how you define physical activity and it relationship with health.
6. Tell me further about your exercise habit.
7. Have any of your students ever experienced injury during the sport activity during the school hour? Please explain.
8. What do you expect, need and plain for the future in teaching sport?

Cross Sectors Collaboration

1. Have you or any of the teacher in this school ever had collaboration with other institutions or organizations to support the UKS program in school? Please explain.
2. What are the activities and how do you think about the collaboration? What need to be improved? Please explain

Recommendation

What do you recommend to improve the school health program in your school? Please explain

APPENDIX 5

List of Schools and Informants

List of Schools and Informants

Schools	code
SMP N 1 Depok	A
SMP Muhamadiyah 29 Depok	B
SMP N 11 Depok	C
SMP Tugu Ibu Depok	D
SMP N 64 Jakarta	E
SMP N 14 Bekasi	F

Respondents	Sex	Working years/grade/occupation
Head Master A	Male	20 years
Head Master B	Male	25 years
Head Master C	Male	15 years
Head Master D	Male	17 years
Head Master E	Female	22 years
Teacher 1A	Female	17 years
Teacher 2A	Female	5 years
Teacher 1B	Male	10 years
Teacher 2B	Male	8 years
Teacher 1C	Male	12 years
Teacher 2C	Female	4 years
Teacher 1D	Female	12 years
Teacher 2D	Female	15 years
Teacher 1E	Female	18 years
Teacher 2E	Female	25 years
Student 1A	Female	Grade 8
Student 2A	Male	Grade 8
Student 1B	Female	Grade 9
Student 2B	Male	Grade 9
Student 1C	Female	Grade 7
Student 2C	Female	Grade 8
Student 1D	Male	Grade 7
Student 2D	Female	Grade 7
Student 1E	Female	Grade 8
Student 2E	Male	Grade 9
Parents 1A	Female	Housewife
Parents 2A	Female	Housewife
Parents 1B	Female	Housewife
Parents 2B	Male	Staff in private company
Parents 1C	Male	Government employee
Parents 2C	Female	Government employee
Parents 1D	Female	Housewife
Parents 2D	Male	Staff in private company

Parents 1E	Female	Housewife
Parents 2E	Female	Housewife
Food provider1A	Female	School canteen
Food provider2A	Female	Street vendor
Food provider1B	Male	School canteen
Food provider2B	Male	Street vendor
Food provider1C	Male	School canteen
Food provider2C	Male	Street vendor
Food provider1D	Male	School canteen
Food provider2D	Male	Street vendor
Food provider1E	Female	School canteen
Food provider2E	Male	Street vendor
Education , National level	Male	Head of "Penjas" center
Health Promotion, National level	Female	Head of Division on evaluation and technology, Center for Health Promotion, Min.of Health
School Age Health, National level	Male	Head of Division on School Age Health. Min.of Health
Education , District level	Male	Basic Education, staff
Health Promotion, District level	Female	Head of Health Promotion Section, District Health Office

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