WHO Research and Intervention Projects Into Suicidal Behaviours: The WHO/SUPRE-MISS and the WHO/START Studies

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Abstract

Historically, suicide prevention efforts in a structured form date more than one century back. This paper mentions a few milestones in the internationalisation of anti-suicide strategies, emphasizing the role of both the International Association for Suicide Prevention (IASP) and the International Academy for Suicide Research (IASR). The core of the discussion, however, is the relatively recent involvement of the United Nations, particularly through their *ad hoc* branch, the World Health Organization (WHO), in the fight against suicidal behaviours. A brief description is dedicated to the important WHO/EURO Multi-centre Study on Suicidal Behaviour and to its 15 years of formal existence. Its impact was markedly influential in many European environments and in the growth of a generation of scholars. The ecological approach of WHO to suicide phenomena is probably better reflected in subsequent studies, the SUPRE-MISS and the START, the former spread around five continents, the latter mainly located in the Western Pacific Region of WHO. Brief history and main characteristics of these projects are here commented.

Key Words: suicidal behaviour, World Health Organization, multi-centre studies, SUPRE-MISS, START.

Declaration of interest: none

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Introduction

Structured forms of suicide preventive efforts have been known for more than a century in western societies. Two such examples are represented by initiatives that originated rather concomitantly across the Atlantic: the *National Save-A-Life League* (New York, US) and the constitution of a *Suicide Prevention Department,* by the Salvation Army, in London, UK. Both originated in 1906. It is only after the WWII (1948) that a similar initiative (*Suicide Prevention Agency)* is created in Vienna, Austria, where suicide rates had been extremely high all along the first half of the 20th Century (De Leo & Evans 2004). A few years later (1953), Chad Varah in London created the *Samaritans,* whose reputation in helping suicidal callers grew very rapidly. In 1956, a *Suicide Prevention Service* was constituted in Berlin, 'beyond the wall', in the Democratic Republic of Germany.

However, suicide prevention efforts were especially boosted by the creation of international aggregations of scholars, clinicians and volunteers. This was the case with the *International Association for Suicide Prevention (IASP),* which originated in 1960 thanks to the initiative of Erwin Ringel. Rumanian by birth (Temesvar), this Austrian psychiatrist and neurologist brought together around himself a number of international scholars (mostly Europeans) and held the first assembly of the association, which was formally constituted only in 1962, in Vienna, Austria.

A number of national bodies were created between the 1960s and 1980s [e.g. the *American Association of Suicidology (AAS),* the *Canadian Association for Suicide Prevention (CASP)*, etc.]. Probably, the most meaningful international event after the IASP was the creation of the *International Academy for Suicide Research (IASR),* which occurred in Padua, Italy, in September 1990. The Academy was an initiative of Rene' FW Diekstra, David Lester and the writer of this article. It originated in response to the poor capability of IASP – at that time - of attracting researchers to its conferences and, more in general, to the need of internationalising research promotion (De Leo & Schmidtke 2001). IASR today comprises approximately 140 among the best researchers in the area of suicide in the world. Meanwhile, IASP has greatly improved in attracting leading researchers, and its congresses (both world and regional) are now of the highest scientific standards.

Over the last two decades a number of national strategies on the prevention of suicide were set up by countries around the world. Finland was the first nation

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(in the 1980s) to initiate such activities, followed by Norway, Sweden, Australia, New Zealand and Denmark. With the new Millennium, the US, England and Wales, Ireland, Scotland, France and Germany also set up their strategies, with many other nations (e.g. Canada, Spain, Cuba, Sri Lanka, etc.) very close to finalise their national plans. In general, these programs represent the expression of public concern around the frequency and the gravity of impacts of suicidal behaviours (both fatal and non-fatal), and follow the commonly shared imperative that *'something must be done'* in response to suicide phenomena. In this perspective, these concerns may attract and gain political attention, and finally succeed in mobilising governmental money and intervention. Obviously, the development and implementation of national strategies represent an enormously important achievement for anti-suicide campaigners; however, until now political agendas seem to have had a too prominent role, with adopted strategies having no clear standards of reference, and with more attention paid to creating programs than to evidence for their effectiveness, and insufficient care on programs' concrete implementation and evaluation (De Leo 2002).

Suicide prevention as a WHO priority

Competing priorities and lack of reliable information on the epidemiological dimension of suicide worldwide have kept for long time the World Health Organization far from significant involvements in suicide prevention activities (De Leo et al. 2002). However, a United Nations document of 1996 represents a convincing landmark in the commitment to the problem of suicide. Then, a WHO Technical Report (1999) set the scene for epidemiology and trends of suicide around the world. In 1999 WHO had also launched *SUPRE* (SUicide PREvention), a global initiative, with the following objectives:

1. To bring about a lasting reduction in the frequency of suicidal behaviours, with emphasis on developing countries and countries in social and economic transitions.
2. To identify, assess and eliminate in the early stages, as far as possible, factors that may result in young people taking their own lives.
3. To raise the general awareness about suicide and provide psychosocial support to people with suicidal thoughts or attempted suicide, and to their relatives and close friends, as well as those of people who committed suicide (quoted in WHO 2002).

The WHO strategic plan for the following five years involved the surveillance of suicide mortality; the production and dissemination of information; the *Multi-site Intervention Study on Suicide behaviour – SUPRE-MISS;* and, technical support to countries. Data on suicide were continuously updated after 1999 on the WHO SUPRE website. A number of booklets were produced on supporting education and awareness (*Preventing Suicide: A Resource for: 001 – General Physicians; 002 – Media Professionals; 003 – Teachers and Other School Staff; 004 – Primary Health care Workers; 005 – Prison Officers; 006 – How to Start a Survivors Group.* A detailed description of the SUPRE-MISS study is presented below. Technical support to countries was offered through WHO Headquarters, the six Regional Offices (with particular support from the office in Copenhagen), and the two WHO Collaborating Centres on Research and Training in Suicide Prevention, Padua and Stockholm (the former appointed in 1997 and the latter in 1998).

Suicide prevention received more impetus in WHO through the campaign against violence (2002), driven by the Injury Prevention Unit in Geneva. The *World Report on Violence and Health* (prefaced by Nelson Mandela) subdivided the matter in interpersonal violence and self-directed violence, and suicide phenomena could benefit from more international attention, even because the official launch happened in Brussels, at the Royal Palace, with the presence of King Albert II and a relevant number of Nobel laureates, and was broadcasted live by the CNN. The writer of this paper, at that time President of the International Association for Suicide Prevention and one of the panellists at the Brussels launch, was then in the best position for promoting the realisation of the World Suicide Prevention Day, which was officially instituted for the first time on 10th September 2003, after several years of preparation. The World Suicide Prevention Day, since its first edition, has been a major booster of suicide prevention activities throughout the globe, with more than 70 countries organising formal celebrations in 2007 (De Leo 2008).

WHO collaborative studies on suicidal behaviour

The World Health Organization, since its creation in 1948, has matured a substantial tradition of collaborative studies. Actually, the first co-operation in the area of suicide was promoted by the European Regional Office of Copenhagen, thanks to the longsighted public health interests of Dr. John Henderson, who promoted and oversaw the founding of the study during a meeting in York (UK) in 1986. The *WHO/EURO Multicentre Study on Parasuicide* (renamed as WHO/EURO Multicentre Study on *Suicidal Behaviour* in Athens in 1999) started on the field in 1988 with 13 centres and ended formally in 2001 with 35 centres enrolled (Platt et al. 1992; Schmidtke et al. 1996, 2004). Needless to say, the study was enormously influential in fostering suicide research and education, not only in European countries. The study originated more than 250 scientific publications, both at national and international level, including three international books and three WHO Technical Reports. The study also stimulated the creation of the bi-annual European Symposia on Suicide and Suicidal Behaviour (ESSSB), which rapidly became the natural stage for the highest quality standard in suicide research worldwide (first meeting in Munich in 1986 and most recent in Glasgow, 2008).

In 1995 in Berne, Switzerland, during a WHO/EURO meeting, advantages and disadvantages of international co-operations in suicide research and prevention were the object of an intense debate (De Leo 1995). Among the positive issues embedded with

this type of studies were presented the following features:

- Larger samples allow for bigger statistical power (extremely important for a low-base phenomenon such as suicide);
- Trans-cultural differences may instruct prevention;
- Large co-operative efforts can obtain better sensitisation and awareness of community members and health authorities;
- Creation of stable research units of highly specialised researchers;
- Implementation of prevention programs at local, regional and national level;
- The opportunity for implementing suicidology courses in academic settings;
- Increased competency of researchers through international exchange; and
- Stimulation of innovative research.

On the contrary, at the level of disadvantages, it was identified what follows:

- Obtained data only refer to health facility referrals;
- Local data do not necessarily mirror national trends;
- Epidemiology is often perceived as detached from clinical practice, even with WHO 'brand';
- Comparability among centres is also often problematic;
- Diagnostic processes are influenced by cultural contexts and might bring to erroneous conclusions on pooled data sets;
- Study impact is often problematic to evaluate in terms of direct benefits;
- New treatment protocols are not necessarily an implicit outcome of any study;
- Cooperation among team members can be problematic or even disruptive if personality factors or behaviour attitudes are not properly controlled and managed.

The ending of the WHO/EURO Multicentre Study on Suicidal Behaviour convinced WHO officers, and particularly Dr. Jose' Bertolote (a very important player in many advancements of suicide prevention activities), to support the implementation of a new collaborative effort in the area of suicide (being the advantages far superior to the disadvantages), possibly focussing on a rather neglected – but extremely important – topic: the role of cultural factors in suicide phenomena.

The WHO/SUPRE-MISS Study

Proposed by the author of this article, the idea of the SUPRE-MISS study originated mainly by the observation of the marked disparities in suicide and attempted suicide rates in the countries participating to the WHO/EURO Multicentre Study on Suicidal Behaviour. For example, that study demonstrated in men rates of parasuicide seven-fold higher in Helsinki (Finland) compared to Guipuzcoa (Spain) (Schmidtke et al. 1996). On the other hand, rates of suicide were notoriously very different amongst European countries, with rates in Finnish men 40 times higher than in Albanian men (WHO 1999). On 2nd October 1999, in Brisbane, Australia, during a WHO Regional Meeting on SUPRE campaign, the idea of a study involving countries in representation of the five continents was launched and accepted by participants. Background documents (De Leo & Broers 2000; De Leo et al. 2000) were prepared and discussed during the first meeting of principal investigators of the WHO/SUPRE-MISS Project (5-7 April 2000, WHO Geneva). The study (the name of which meant Suicide Prevention: Multisite Intervention Study on Suicide) involved three different areas of investigation: 1) a trans-cultural description of the communities participating to the study; 2) a community survey of suicidal ideation and behaviour on a representative sample of subjects from each community; 3) a randomized controlled trial of treatment as usual of suicide attempters at health facilities versus treatment as usual (TAU) plus a simple form of contact and intervention with attempters. The assumption on this specific part of the study was that a necessarily simple intervention (given the enormous variability of type and availability of care among countries) performed with some continuity (9 follow-ups in an 18-month trial) could elicit different results from routine forms of treatment. The feasibility of the community study and the structure of all questionnaires were first piloted in Queensland (De Leo et al. 2005).

The study, globally, was meant:

- To contribute to increasing the awareness about the burden of suicidal behaviours;
- To identify reliable and valid indicators of risk for fatal and non-fatal suicidal behaviour, with a special emphasis on socio-cultural factors;
- To describe patterns of suicidal behaviour;
- To identify variables that determine the presentation or not at health facilities following a suicide attempt.
- To improve the efficiency of general health care services through the identification of specific interventions effective for the reduction of suicide attempts.

Eight countries, in representation of the six regions of WHO, were selected to participate to the study: Estonia (EURO), South Africa (AFRO), Brazil (AMRO), Iran (EMRO), India and Sri Lanka (SEARO), Vietnam and China (WPRO). For Iran, Vietnam and South Africa it was the first occasion of an international co-operation in the area of suicidal behaviours (Fleischmann et al. 2005). Main results from the community surveys are presented in **Table 1**.

The SUPRE-MISS most relevant results are those related to the RCT involved in the pooling of all data of the TAU vs. TAU+BIC (Brief Intervention and Contact) on suicide attempters in all centres. Given the size of the two samples (945 subjects in TAU vs. 922 in TAU+BIC, after randomization), the obtained results were particularly convincing: in the group that received the series of planned follow-ups, mortality for cases of suicide was very significantly reduced ($p<.0001$) compared to TAU only subjects. Specifically, at 18-month follow-up, there were only two deaths due to suicide in the first group compared to 18 deaths in the group that received only the routine care. Furthermore, even the mortality for all other causes was higher in

Table 1. *Results of the community surveys within the WHO/SUPRE-MISS Study* (Bertolote et al. 2005)

Country	*Ss*	*suicide ideation**	*suicide plans**	*attempted suicide**
Australia (Brisbane)	11,572	14.9%	4.4%	4.2%
Estonia (Tallin)	498	12.4%	5.4%	3.6%
Sri Lanka (Colombo)	670	7.3%	1.5%	2.1%
Brazil (Campinas)	516	18.6%	5.2%	3.1%
Iran (Karaj)	504	14.1%	6.7%	4.2%
Viet Nam (Hanoi)	2,266	8.9%	1.1%	0.4%
S.Africa (Durban)	500	25.4%	15.6%	3.4%
India (Chennai)	500	2.6%	2.0%	1.6%
China (Yuncheng)	503	18.5%	7.4%	2.4%

the group receiving only TAU: 22 subjects vs. 11 individuals in the TAU+BIC group ($p<.037$) (Fleischman et al. 2008).

Several articles were originated by the SUPRE-MISS study, the data of which are still being analyzed, both locally and centrally (pooled data set). The participation to the study contributed to the appointment of the Beijing Suicide Research Centre as a WHO Collaborating Centre on Research and Training in Suicide Prevention (2007), the third of this type in the world (together with Stockholm and Brisbane. The Paduan centre was closed in 2003).

The WHO/START Study

The WHO/START Study arose out of a perceived and identified need to address the problem of suicidal behaviours within the WHO Western Pacific Region (WPR). Officially, there is a paucity of information regarding suicide rates within the WPR, with only 8 nations providing such data to the WHO. However, the 2004 edition of the World Health Report estimates that in 2002 there were 331,000 cases of suicide in this Region of the World Health Organization (WHO 2004). This number represents more than one third (i.e. 38%) of all suicides occurring in the world every year for a corresponding population that is much less than one third of the global population [1,745,620 in 2005 (estimated)] (WHO 2005). The suicide rate for this region in 2002 was 19/100,000, which is more than 30% higher than the average world rate for the same year (14/100,000). With 272,647 cases as the estimated number of deaths due to suicide in 2002, China contributes approximately 80% of the total number of deaths in the WPR (WHO 2004). Suicide is among the top five causes of injury-related deaths, accounting for more than road accidents and falls combined, as well as more than all homicide deaths and war victims put together. Globally, suicide represents 1.4% of the global burden of diseases, but in the Western Pacific Region, the burden reaches 2.5% (WHO 2004).

Most of the 37 member states (28 countries, 9 territories) that belong to the Western Pacific Region are represented by low-income countries, with a small number of those countries currently witnessing booming expansions like China and Malaysia. For many of the countries the globalisation process is imposing radical changes to the structure of societies and traditional values, and the loss of life due to suicide has increased.

In August 2005, 21 countries participated in a meeting in Manila WHO Offices, convened by the WHO Regional Adviser, Dr. Wang Xiangdong. The aim of the meeting was to ascertain the real extent of the problem of suicidal behaviours within the region and verify the feasibility of stimulating and implementing suicide prevention activities. The consensus among meeting participants was that the development of a valid and reliable monitoring system was essential to health planning and resource allocation. It was accepted that the use of standardised nomenclature to effectively promote the implementation of surveillance systems, and the launch of a regionally-based study from coordinated efforts would provide substantial benefit. This would enable a starting point for the individual nation's public health systems regarding monitoring suicide and other suicidal behaviours.

The study, called START (Suicide Trends in At-Risk Territories) also to emphasize the beginning of formal recording practices for many participating countries, was officially launched in Brisbane on 3rd March 2006 by Dr. Shigeru Omi (director of the WPRO) and Dr. Jose' Bertolote (WHO-HQ, Coordinator, Mental Health and Substance Dependence). Of the 37 WPR nations and territories, 22 agreed to take part in the study. The WHO START study is the only officially endorsed study of the International Association for Suicide Prevention (IASP), with the Australian Institute for Suicide Research and Prevention (AISRAP) currently managing the project in all its components. These are:

1. Standardised collection of suicide mortality and morbidity (attempts/self-harm) from 22 nations in the Region (9 countries do not actually run any official data collection);
2. A randomized controlled trial of treatment and aftercare of suicide attempters (interventions study);
3. A psychological autopsy of suicide victims (trans-cultural comparison of risk factors for suicide);
4. A longitudinal evaluation of medically serious suicide attempters.

This large scale study will provide significant insights into the cultural factors of suicidal behaviours and create a powerful network of researchers, clinicians and public health administrators. The increased awareness and sensitivity towards suicide phenomena will be able to generate innovative research, develop education and training, and actively encourage regional and national suicide prevention strategies to develop and evaluate consequent impact. Clearly, the overall goal is to reduce suicide in the 22 World Health Organization Western Pacific nations and associate members, areas and territories through the four phases of the study and its longer-term outcomes. In fact, the START Study is initially planned for three-year duration, but it is expected that a number of countries will commence at a later stage than the official starting on the field, which was January 2008. Twenty two

countries have so far agreed to participate in the START Study. They are: Australia; Cambodia, China, Fiji, French Polynesia, Guam, Hong Kong (China), Japan, Lao People's Democratic Republic, Micronesia, Mongolia, New Caledonia, New Zealand, Northern Mariana Islands, Papua New Guinea, Republic of Korea, Samoa, Singapore, Solomon Islands, Tonga, Vanuatu and Vietnam. This number is destined to increase, with more countries inside and outside the region seeking to participate, including India, Thailand, and Italy.

The project underpins the ability of Western Pacific region nations to develop local strategies to reduce suicide in their communities. The establishment of an efficient and standardised means of collection and record keeping is imperative to the later dissemination and interpretation of results. This data collection will be able to provide information on the social and economic impact of suicide with the database to reflect amongst a range of requirements - age, culture, income, language, mental health services available, literacy and life expectancy. An atlas will finally be established, consisting of the profiles of the characteristics of each nation, associate member, area and territory within the area and territory within the Western Pacific region.

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