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Author

Schwarzer, Ralf, Hamilton, Kyra

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7 Changing Behavior Using the Health Action Process Approach

Ralf Schwarzer and Kyra Hamilton

Practical Summary

When it comes to changing behavior, the first question to address is the level of motivation an individual possesses to attain a target behavior. If a person has not yet formed an intention to perform the behavior in question, then the individual is not currently motivated to change and is in need of motivational support. According to the health action process approach (HAPA), this support could involve motivational constructs such as action self-efficacy, positive outcome expectancies (benefits of behavior change), and some risk awareness for not changing. On the other hand, if a person has already formed an intention to participate in the behavior in question, then the individual is already motivated to attain the target behavior. Such individuals are unlikely to benefit from motivational support but are likely in need of behavioral support to overcome barriers that prevent them translating their good intentions into action. This support could involve volitional constructs such as coping self-efficacy, planning, and self-monitoring. Moreover, if behavior is derailed and the person relapses to their previous pattern of behavior, instilling optimistic self-beliefs for successful reinitiation of action such as building recovery self-efficacy may be an effective strategy.

7.1 Introduction

A key question in behavior change research is how to predict and modify the adoption and maintenance of the target behaviors. People have, in principle, control over their conduct. Accordingly, it is assumed that people are able to modify their behavior to change health-compromising behaviors (e.g., inactivity, snacking, alcohol misuse) through appropriate self-regulatory efforts and instead adopt health-enhancing alternatives (e.g., regular exercise, preventive nutrition, dental hygiene, condom use, vaccination). Although people do have this control and are *able* to change their behavior, there are still substantive problems with lack of adherence to health promoting behaviors and failure to give up health-compromising behaviors. The problems likely involve a breakdown in capacity to self-regulate behavior and limitations in the skills necessary to do so.

Health self-regulation refers to the motivational, volitional, and behavioral processes of abandoning health-risk behaviors in favor of adopting and maintaining health-enhancing behaviors. This chapter outlines the key theoretical constructs of a health behavior change model, the health action process approach (HAPA) describes how the model has been used to change behavior, and provides empirical evidence to serve as illustrations in the use of the HAPA to change behavior. The model has been designed as a general framework

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to conceptualize health self-regulation as a process that can be subdivided into phases in which different psychological constructs work best to move people forward to improved health behaviors. This framework builds on older approaches that distinguish between a motivational phase and a volitional phase of change, characterizing individuals' mindsets toward taking action. The level of behavioral intention can be seen as a separator between these phases, identifying less motivated persons in the first phase and more motivated persons in the second phase. The idea is that the factors that move people forward differ between the two phases. The model has been used to inform behavior change in many health behaviors and contexts but can also be an appropriate means to inform behavior change outside health domains such as academic performance, goal striving in sports, career development, and searching for a job.

7.2 Overview of the Theory and Evidence

The HAPA specifies six constructs that are considered the core antecedents of behavior: intention, risk perception, outcome expectancies, self-efficacy, planning, and action control (self-monitoring). These constructs are proposed to be determinants of action through a set of proposed mechanisms. Together, the constructs and proposed mechanisms constitute the theoretical framework of the HAPA. Furthermore, and important to consider when designing interventions to change behavior, it is useful to distinguish phases of self-regulation and assess individuals according to their position within these phases. A useful distinction is the one between motivation and volition. In the motivational phase, individuals are in a deliberative mindset while setting a goal (intention), whereas, in the volitional phase, individuals are in an implementation mindset while pursuing their goal (see Chapter 6, this volume). Thus, goal setting and goal pursuit can be understood as two distinct processes that require self-regulatory effort. In the sections that follow, definitions and operationalization (how the constructs are used) of the constructs will be provided, the key mechanisms by which these constructs relate to behavior will be described, the evidence in support of the HAPA presented, and the limitations of the HAPA discussed.

7.3 Key Constructs of the HAPA

The HAPA identifies six key constructs, which are proposed to be directly or indirectly related to behavior as the ultimate outcome. The HAPA psychological constructs are more or less important for either goal setting or goal pursuit and can be assigned to these two phases (see Table 7.1). The next sections provide definitions and operationalization of these constructs.

7.3.1 Intention

Changes in health behaviors can be influenced by opportunities and barriers, by explicit decisions, or by random events. Here, the discussion is constrained to intentional changes that happen when people become motivated to alter their previous way of life and set goals for a different course of action. For example, they may consider quitting smoking or they make an effort to do so. Thus, intention represents a key factor in health behavior change and behavior change more broadly.

Table 7.1 Health action process approach (HAPA) constructs according to phases of behavior change

Motivation Phase (Goal Setting)	Volition Phase (Goal Pursuit)
Personalized Risk Feedback	Coping Self-Efficacy
Outcome Expectancies	Recovery Self-Efficacy
Action Self-Efficacy	Action Planning, Coping Planning
Intention Formation, Goal Adjustment	Action Control

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This construct was originally proposed by Fishbein and Ajzen (1975) based on Lewin's (1951) seminal work on the topic, as outlined in the theory of reasoned action (see Chapter 2, this volume), to operate as a mediator between attitudes and behavior – theorizing that emanated from well-documented research that showed relatively modest relations between attitudes and behavior (e.g., Wicker, 1969). Empirical evidence has shown intention to be a stronger proximal predictor of behavior than attitudes for many behaviors and, thus, an indispensable variable when it comes to predicting behaviors (Abraham & Sheeran, 2000).

In the process of motivation, intention has been regarded as a kind of "watershed moment" between an initial goal setting phase (motivational phase) and a subsequent goal pursuit phase (volitional phase) (see Chapter 6, this volume). Although the construct of intention is indispensable in explaining behavior change, it has some inherent limitations as a predictor of behavior. Meta-analytic research has shown relatively modest correlations for the intention-behavior link (Abraham & Sheeran, 2000; Sheeran & Webb, 2016; see also Chapter 6, this volume). When trying to translate intentions into behavior, individuals are faced with various obstacles such as distractions, forgetting, or competing bad habits. If not equipped with means to meet these obstacles, intention alone is not sufficient to change behavior. To overcome this limitation, further constructs are required that operate in concert with the intention.

7.3.2 Risk Perception

Perceiving a health threat is often viewed as an important prerequisite for individuals to be motivated to change their risky behavior (Renner & Schupp, 2011). If an individual is unaware of the risky nature of their actions, they would not be motivated to change. Risk perception has two aspects: perceived severity of a health condition and personal vulnerability toward it (see Chapter 4, this volume). The first refers to the amount of harm that might occur and the second pertains to the subjective probability that one could fall victim to that condition. Thus, it has been recommended that people should be informed about the existence of a health risk and, moreover, that they should imagine themselves as possible victims if they do not take the necessary precautions. Using fear strategies that aim to scare people into health behaviors, however, has not been shown to be effective unless other methods are used in conjunction with fear strategies (for a review, see Kok et al., 2018; see also Chapters 4 and 34, this volume). In general, initial risk perceptions may be sufficient to put some people on track for developing a motivation to change but, later on, other variables may be more influential in the self-regulation process.

7.3.3 Outcome Expectancies

People not only need to be aware of the existence of a health threat; they also need to know how to regulate their behavior by understanding the contingencies between their actions and subsequent outcomes. These outcome expectancies are influential beliefs in the motivation to change (Bandura, 1997; see also Chapter 3, this volume). For example, a smoker may find more good reasons to quit than good reasons to continue smoking (e.g., "If I quit smoking then I will save money"). Similarly, positive outcome expectancies (e.g., "If I exercise five times per week, I will reduce my cardiovascular risk") are chiefly seen as being important in the motivation phase, when a person balances the pros and cons of certain behavioral outcomes. Ambivalence in positive and negative outcome expectancies is typical in rational decision-making and has been proposed in other models of behavior prediction to underpin attitudinal beliefs (see Chapter 2, this volume). Ambivalence may not lead directly to action but can help to form an intention to perform a given behavior.

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7.3.4 Self-Efficacy

Risk perceptions and outcome expectancies make it more likely that the individual will set goals and form an intention to perform a behavior to address the risk or achieve the identified outcomes. Perceived self-efficacy also contributes to the intention formation but has also been proposed to be important at all stages of the health behavior change process (Bandura, 1997; see also Chapter 3, this volume). Perceived self-efficacy reflects individuals' beliefs in their capabilities to exercise control over challenging demands and over their own functioning. Although perceived self-efficacy has been found to be important for both intention formation and behavioral action (Hamilton, Vayro, & Schwarzer, 2015; Lhakhang et al., 2016; Zhang et al., 2019, 2020), it does not always constitute exactly the same construct. Its meaning depends on the particular situation of individuals who may be more or less advanced in the change process. The rationale for the distinction between several phase-specific self-efficacy beliefs is that, during the course of health behavior change, different tasks have to be mastered and different self-efficacy beliefs are required to master these tasks successfully. For example, individuals might be confident in their capability to be physically active in general (i.e., high action self-efficacy) but might not be very confident to resume physical activity after a setback (i.e., low recovery self-efficacy). In the HAPA, three types of self-efficacy are distinguished: action self-efficacy, coping self-efficacy, and recovery self-efficacy.

Action self-efficacy, sometimes also referred to as pre-action self-efficacy or task self-efficacy, refers to the first phase of the process in which an individual does not yet act but develops a motivation to do so. It is an optimistic belief during the pre-actional (motivational) phase. Individuals high in action self-efficacy imagine success, anticipate potential outcomes of diverse strategies, and are more likely to initiate a new behavior. Those with less self-efficacy imagine failure, harbor self-doubts, and tend to procrastinate. Coping self-efficacy, sometimes also called maintenance self-efficacy, represents optimistic beliefs about one's capability to cope with barriers that arise during the period of behavioral maintenance. A new health behavior might turn out to be much more difficult to adhere to than expected but a self-efficacious person responds confidently with better strategies, more effort, and prolonged persistence to overcome such hurdles. Once an action has been taken, individuals with high coping self-efficacy try harder and persist longer than those who are less self-efficacious. Recovery self-efficacy addresses the experience of failure and recovery from setbacks. It pertains to one's conviction to get back on track after being derailed; the person trusts in their competence to regain control after a setback or failure and to reduce harm. This distinction between phase-specific self-efficacy beliefs has proven useful in various domains of behavior change where action self-efficacy has tended to predict intentions, whereas coping self-efficacy and recovery self-efficacy have tended to predict behaviors such as breast self-examination (Luszczynska & Schwarzer, 2003), dietary behaviors (Ochsner, Scholz, & Hornung, 2013; Schwarzer & Renner, 2000), depression prevention (Zarski et al., 2018), and physical exercise (Scholz, Sniehotta, & Schwarzer, 2005).

7.3.5 Action Planning and Coping Planning

As discussed in the previous section, intention alone is not sufficient to change behavior. The HAPA thus proposes that intentions are more likely to be translated into behaviors when people anticipate detailed plans, imagine success scenarios, and develop preparatory strategies for tackling a challenging task (Schwarzer, 2016). Action planning and coping planning are theorized as proximal determinants of behavior and distinct mediators likely to ensure intentions are translated to behavior, previously referred to as a *dual mediation model* (Carraro & Gaudreau, 2013; see also

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Chapter 6, this volume). This proposition is a central tenet of the HAPA (Schwarzer, 2008), and ample prior research has found support for planning mediating the intention-behavior relationship (Hamilton, Bonham et al., 2017; Hamilton et al., 2020; Hamilton, Cox, & White, 2012; Hattar, Pal, & Hagger, 2016; Reyes Fernández et al., 2016), with intervention studies also supporting complementary effects of action planning and coping planning (Kwasnicka et al., 2013; Zhou et al., 2015).

Both action planning and coping planning are based on contingencies with anticipated situations. For example, an individual might state the following action plan: "I plan to run with my friend on Sunday at 10 a.m. for half an hour in the park without pausing." The plan includes a number of situational cues and sufficient detail to qualify as a plan, going beyond a mere behavioral intention, such as "I intend to go jogging once a week." Such an action plan is often called a *when-where-how* plan. The time and day of week and the presence of the friend constitute the cues that are proposed to trigger the behavior. Other cues can be stronger and more explicit, such as "If I arrive at home after work today before 5 p.m., then I will immediately go jogging in the park." There is a long tradition of research on such action plans with if-then structures for health behaviors (see Chapters 6 and 39, this volume).

The example items on physical activity presented include a level of uncertainty. This is because the conditions for performing the behavior might be unfavorable, such as bad weather, physical discomfort, a traffic jam, or a visiting friend, preventing the person from actually executing the plan. To account for such barriers, the concept of coping planning, initially known as barrier-related strategic planning, was developed (Sniehotta et al., 2005). Coping planning is proposed as a conceptually distinct construct from action planning; action plans are proposed to connect the individual with good opportunities to act through a task-facilitating strategy (i.e., making plans that specify when, where, and how an intended behavior is to be performed), whereas coping plans are proposed to protect good intentions from anticipated obstacles via a distraction-inhibiting strategy (i.e., making plans that anticipate challenging situations that may obstruct behavioral enactment and mental representation of ways to overcome them). Empirical literature supports the conceptual distinction between the two planning constructs (Scholz et al., 2008; see meta-analyses by Carraro, & Gaudreau, 2013; Kwasnicka et al., 2013), although it should be noted that there is more convergent than discriminant validity of these two concepts but keeping them distinct is useful for the design of interventions (see Chapter 39, this volume). Coping plans serve a compensatory function in the HAPA. If one's first-choice plan becomes unrealistic due to anticipated barriers or better options to attain one's goal, coping plans contain several alternative responses identified beforehand that could be retrieved and adopted. An example is: "If I feel tired of studying, then I will go to the kitchen and prepare a coffee; however, if it is already after 6 p.m. and I don't want to risk not falling asleep later, then I'd rather go for a refreshing walk outside to maximize goal attainment of studying for the exam." Behavioral interventions in which individuals are prompted to produce a number of well-elaborated coping plans to make goal attainment more likely have been shown to be useful in promoting behavioral engagement (Hagger & Luszczynska, 2014). This pertains to individuals who are able to vividly imagine and forecast possible scenarios, as well as anticipate barriers and opportunities, and who are capable of understanding the contingencies.

Action planning and coping planning are alterable variables. They can be easily communicated to individuals with self-regulatory deficits and, for this reason, have been frequently applied in interventions to change health behaviors. Further, it is suggested that the advantages of planning interventions include low cost and response burden

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(Hagger & Luszczynska, 2014). Numerous randomized controlled trials have documented the evidence in favor of such planning interventions (for a review, see Hagger & Luszczynska, 2014).

7.3.6 Action Control

Action control is a self-regulatory strategy for promoting maintenance of an enacted behavior through the continual monitoring and evaluation of a behavior against a desired behavioral standard (Schwarzer, 2008). Unlike self-efficacy and planning strategies, which are generally elicited prior to a behavior being enacted, action control is performed retrospectively or concurrently with a behavior each time it is repeated, where the ongoing behavior is continuously evaluated with regard to a behavioral standard (Schwarzer, 2008). Action control comprises three facets: self-monitoring (e.g., "I consistently monitor when, where, and how long I exercise"), awareness of standards (e.g., "I have always been aware of my prescribed training program"), and self-regulatory effort (e.g., "I took care to practice as much as I intended to"). Action control strategies can include keeping records of behaviors in the form of a diary or checkmarks on a calendar, which can make people more aware of their behavioral gains and deficits and, therefore, encourages continued action or alternative action if needed (Schwarzer, 2008). Action control is a useful behavior change technique that has been applied to a variety of health behaviors, including oral health behaviors (Hamilton et al., 2018; Schwarzer, Antoniuk, & Gholami, 2015; Zhou et al., 2015), dietary habits (Godinho, Alvarez, Lima, & Schwarzer, 2014), dust mask wearing (Zhou et al., 2016), or hand hygiene (Reyes Fernández et al., 2016).

7.4 Mechanisms: A Self-Regulation Framework

Other social cognitive models such as the theory of planned behavior (see Chapter 2, this volume) have been criticized for not addressing the intention-behavior "gap," that is, the relatively modest link between intention and behavior (Sheeran & Webb, 2016; see also Chapter 6, this volume). As a comprehensive self-regulation model, the HAPA suggests a distinction between pre-intentional motivation processes that lead to a behavioral intention and post-intentional volition processes that lead to actual behavior (see Figure 7.1). In the following sections, the processes that underpin the HAPA are described and key issues such as goal setting and the goal striving phase of health self-regulation are further introduced (Schwarzer, 1992, 2008).

Before changing behavior, individuals need to become motivated. This is seen as a process toward attaining an explicit goal or intended action (e.g., "I intend to quit smoking this week"). Three sets of social cognitive constructs are implicated as playing key roles in this intention formation process, namely outcome expectancies, action self-efficacy, and risk perceptions, and all three are proposed to have direct effects on intention. After an individual has become committed to their goal, they are proposed to move on to a volitional phase where they undergo necessary processes to prepare for action and, later, maintenance of the behavior, particularly in the face of barriers and setbacks. In this phase, the "good intention" has to be transformed into detailed instructions on how to perform the desired action and, once an action has been initiated, it has to be maintained. This involves self-regulatory beliefs, skills, and strategies such as coping self-efficacy and recovery self-efficacy, planning, and action control (self-monitoring) that help protect one's goal pursuit from distracting or tempting situations.

Coping and recovery self-efficacy are required to overcome obstacles that might derail the intended action, to overcome setbacks and recover from failed attempts to enact the target behavior, and to stimulate self-motivation repeatedly. Coping and recovery self-efficacy are

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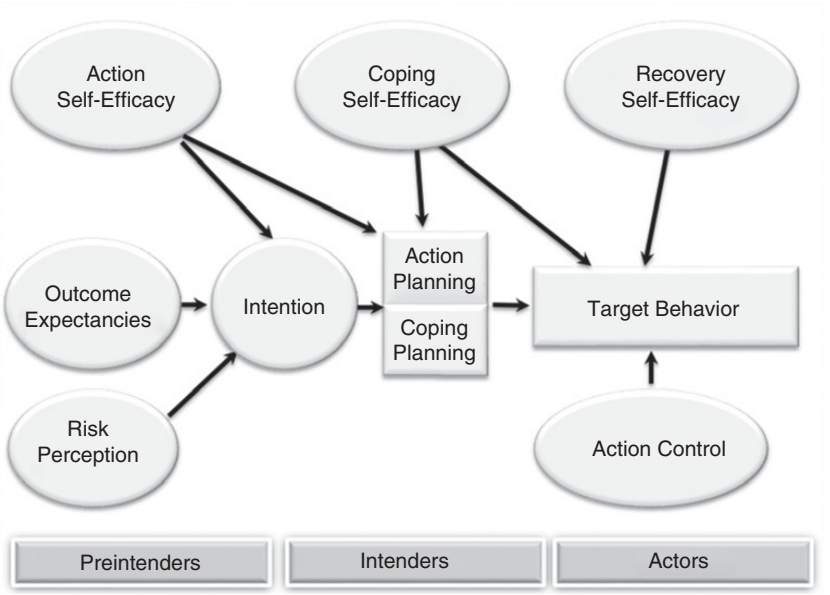

Figure 7.1 The health action process approach (HAPA; Schwarzer 1992, 2008)

proposed to have direct effects on behavior and are also expected to be related to each other and to action self-efficacy. The forms of self-efficacy in the HAPA are, therefore, phase-specific, with action self-efficacy relevant to intention formation and coping and recovery self-efficacy implicated in the enactment and maintenance of behavior. Plans are required to specify the details to performance of the desired action and, when the critical situation arises, individuals take the initiative and invest in preparatory behaviors. Action and coping planning are thus proposed to mediate the intention-behavior relationship in the HAPA. Action control is required to help focus individuals' attention on the task at hand, while avoiding focusing attention on distractors, resisting temptations, and managing negative emotions, and proposed to have direct effects on behavior. In sum, the volitional process can be viewed as a set of sequences that involve planning, initiation, maintenance, and relapse management. This process to health action is not achieved through an act of will but involves the development of self-regulatory skills and strategies that influence an individual's motivation and behaviors, such as the setting of attainable, proximal subgoals; creating incentives; drawing from an array of coping options; monitoring progress; and mobilizing social support.

The purpose of the process model described and shown in Figure 7.1 is twofold: It allows a prediction of behavior and it explains the assumed causal mechanism of behavior change. Research that is based on HAPA, therefore, often employs path-analytic methods to test model predictions. There are a host of empirical studies that have applied the HAPA and confirmed its usefulness (for an overview, see Schwarzer & Luszczynska, 2015). However, it should be noted that there is not always a perfect match between the model and real-world applications. Owing to a variation in research questions and contextual constraints, there are often more parsimonious versions of the HAPA aiming at the examination of only certain aspects of the model. In some cases, for example, there has been no sufficient discriminant validity between action planning and coping planning and, thus, collapsing these two facets into one construct of planning has

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been preferred (Zhou et al., 2016). In other cases, there has been no sufficient discriminant validity between coping self-efficacy and recovery self-efficacy and, therefore, both were combined into an overall construct labeled volitional self-efficacy (Zhang et al., 2019).

7.5 How Has the Theory Been Used to Change Behavior?

The HAPA proposes multiple targets for interventions and suggests that intervention components targeting key constructs in each phase may assist in intention formation and behavioral enactment and maintenance. The model has been used as a guide to develop intervention content aimed at changing individual constructs (e.g., Lippke et al., 2010; Payaprom et al., 2011) as well as multiple constructs from the HAPA (e.g., Duan et al., 2017; Keller et al., 2018; Lhakhang et al., 2015). As HAPA overlaps with other social cognitive models, and the use of more integrated models of behavior is becoming more popular (Brown et al., 2018; Hagger et al., 2016; Hagger et al., 2017; Hamilton, Kirkpatrick et al., 2017; see also Chapters 12 and 15, this volume), one needs to decide to what degree an intervention study is inspired, guided, or determined by a particular theory. Key elements of the HAPA are phase-specific self-efficacy (action, coping, and recovery self-efficacy) and one or two forms of specific planning (action and coping planning). The theory lends itself to longitudinal mediator research designs that typically also include more pervasive motivational constructs such as intention, outcome expectancies, and risk perception. Thus, one could argue that a study does not qualify as a HAPA study if these key elements (one type of self-efficacy, one type of planning) are missing (see Zhang et al., 2019). Accordingly, there are many studies that claim to be based on the HAPA but, in reality, are simply inspired by the HAPA.

In intervention studies that have targeted HAPA constructs, various behavior change methods or techniques (Kok et al., 2016; Michie et al., 2013; see also Chapter 20, this volume) have been applied to target participants' risk perceptions, outcome expectancies, and intentions in the motivational phase, whereas the self-regulatory components of self-efficacy, action planning, coping planning, and action control (self-monitoring) constitute the behavioral support to initiate and maintain the desired health behaviors. Strategies that provide motivational support target intention formation as the primary outcome, whereas strategies that provide behavioral support target action as the primary outcome, in line with the motivation and volition phases of the model.

Most intervention studies concentrate on the mechanisms and constructs that characterize the continuum layer of HAPA, with few intervention studies making use of the stage layer. For an example of a study protocol of a HAPA-based intervention, see O'Brien et al. (2018). A recent study tested the efficacy of an mHealth program based on the HAPA using the social media platform Telegram to promote good oral hygiene behavior and oral health outcomes among Iranian adolescents (Scheerman et al., 2019; see also Chapter 29, this volume). Results demonstrated that the oral health intervention compared to the control group resulted in significant improvements in toothbrushing behavior and clinical oral health indicators as well as more positive social cognitions (intention, outcome-expectancies, risk perception, self-efficacy, action planning, coping planning, self-monitoring, and health-related quality of life) among Iranian adolescent students in the short and long term (for a detailed description of this study, see Sidebar 7.1).

The focus of many intervention studies mainly lies on the volition phase, which makes HAPA distinct from other models, and most studies target directly the initiation and maintenance of health behaviors, employing behavior change techniques that are likely to serve this purpose. For example, interventions to improve self-efficacy may seek to

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Sidebar 7.1 A health action process approach intervention in oral health

Based on the HAPA, Scheerman et al. (2019) tested the efficacy of a theory-based online program using Telegram to promote good oral hygiene behavior and oral health outcomes among Iranian adolescents. A three-arm randomized controlled trial design was used, consisting of an adolescent (A)–only intervention group (A group; $n = 253$), an adolescent (A) and mother (M) intervention group (A + M group; $n = 260$), and a control group ($n = 278$). The program targeted multiple behavior change techniques that mapped onto the constructs in the motivational and volitional phases of the HAPA. Specifically, intervention components targeted outcome expectancies (e.g., adolescents were encouraged to formulate their own potential pros and cons of regular toothbrushing), self-efficacy (e.g., instructions were given on effective behaviors as well as role modeling of effective behaviors), risk perceptions (e.g., feedback on oral health behavior change was provided), social influences (e.g., mothers were asked to encourage their adolescent to complete all intervention activities), action planning (e.g., adolescents were asked to make concrete plans on when, where, and after what activity they would brush their teeth in future using the if-then formulation), coping planning (e.g., adolescents were asked to identify barriers and possible solutions by making coping plans), and action control (e.g., adolescents were asked to monitor their oral hygiene behavior and oral health status) (see Appendix 7.2, supplemental materials). Findings showed increases in adolescent toothbrushing at the one- and six-month follow-ups in both intervention groups compared to the control group. Adolescents in the A + M group showed significant greater improvements in their toothbrushing behavior and in scores on two clinic-verified indicators of dental health, the visual plaque index and the community periodontal index, than adolescents in the A group. Improvements to toothbrushing social cognitions were also observed.

apply strategies that target change in action self-efficacy and coping (maintenance) self-efficacy. These can include providing opportunities to experience, reflecting on past success, developing skills, setting proximal goals, monitoring goal progress, providing encouraging feedback on progress, enhancing skills to manage setbacks, and presenting role models to provide vicarious experience of success with the behavior. Brief interventions of this kind provide participants with planning forms where they enter the "when," "where," and "how" of intended actions and concurrently generate several coping plans, including imagined barriers and ways to overcome them. In addition, daily diary forms or calendars are provided to allow for continuous self-monitoring (Gholami et al., 2013; Keller et al., 2018; Lhakhang et al., 2014; Schwarzer et al., 2015). Moreover, role models can be introduced by displaying testimonials of others who have coped well (for self-efficacy improvement). A description of how the HAPA psychological constructs are operationalized in terms of techniques and concrete messages that constitute the treatment components is presented in Appendix 7.1 (supplemental materials).

7.6 Evidence Base for Use of the HAPA in Changing Behavior

If an article reports a combination of one type of planning (action or coping planning) and one type of self-efficacy (task, coping/maintenance, or

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recovery self-efficacy), mediating between intervention and behavioral outcome, then it is considered a HAPA study, even if the model or its source is not mentioned. In other cases, where fewer of these constructs are investigated (e.g., planning and self-efficacy as mediators), it may not be clear whether the study has been derived from HAPA or not. As the HAPA is an open-architecture framework, it tends to inspire research that is not necessarily in line with the original model and, in many cases, published reports address only a narrow aspect that is in line with specific research questions, but not providing a full account of the entire model that had informed the study. This is a problem endemic in the literature on behavior change and an issue that researchers are attempting to resolve through greater transparency in reporting and clearer specification of matching theory components with the specific techniques of the intervention that are purported to change them (see Chapter 20, this volume).

Meta-analyses of HAPA-derived intervention studies have been conducted (Smith et al., 2013). The authors found that there are many interventions on a narrow number of chronic disease–related behaviors such as weight loss adopting the model and that the inconsistencies of terminology, definitions, and reporting make it difficult to identify to what degree studies are really based on HAPA. A more recent meta-analysis on the HAPA has been generated (Zhang et al., 2019). Studies were included if they measured intention and a health behavior and at least one type of self-efficacy (action/task, coping/maintenance, or recovery self-efficacy) and one type of planning (action or coping planning). Studies that met such key inclusion criteria have often also used risk perceptions, outcome expectancies, and, less frequently, action control, and they were likely to be inspired by the overall longitudinal mediator mechanism that is unique to HAPA.

Results indicated positive associations among HAPA constructs across studies with small-to-medium effect sizes. The majority of studies identified were correlational in design with few intervention studies targeting change in individual HAPA components. Action self-efficacy and coping self-efficacy, as well as outcome expectancies, had small-to-medium–sized effects on health behaviors. Effects of self-efficacy and outcome expectancies on health behaviors were mediated by intentions and planning. Effects of action self-efficacy on intentions and behavior were larger in physical activity studies compared to studies on dietary behaviors, whereas effects of coping and recovery self-efficacy on behavior were larger in studies on dietary behaviors. Findings highlight the importance of self-efficacy in predicting health behavior in motivational and volitional phases of behavior change.

Importantly, risk perception was the only exception to the predictions of the model in the meta-analysis, with much smaller effects observed. This is not surprising, because risk perceptions generally do not have a pervasive influence on health-related behaviors unless they have a clear, explicit, and proximal link to reduced risk (e.g., taking prophylactic medication, safety behaviors, vaccination) or are pertinent to a specific population at risk such as patients in medical rehabilitation. Although there is an obvious potential of action control as an independent predictor of behavior, only ten of the studies in this meta-analysis provided data to compute effect sizes, which was insufficient for them to be included in the test of the model. What has not been identified to date is a meta-analysis on interventions that address the main constructs along with the stage approach. Such interventions segment the audience into pre-intenders, intenders, and actors and design matched treatments focusing on self-efficacy, planning, and action control. This is an avenue for future meta-analyses as the literature on HAPA interventions expands.

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Sidebar 7.2 Using the health action process approach (HAPA) and technology to change behavior

Most eHealth or mHealth applications address individuals in the volition phase of behavior change because people generally do not sign up for such "apps" if they do not have some level of motivation to change. In such cases, users need behavioral support to overcome obstacles and maintain behaviors based on planning, action control, and maintenance self-efficacy. Participants are guided to set goals, monitor their behavior, receive tailored feedback, make action plans and coping plans, and increase their self-efficacy by vicarious experience via testimonials and by problem-solving tasks (Hekler et al., 2018). The advanced technology allows for immediate feedback loops that keep users online, monitoring lapses as well as progress and providing resource information that is individually tailored (Spruijt-Metz et al., 2015). Technology allows for more fine-grained process characteristics to be included in the implementation of the model (Nahum-Shani et al., 2018). More frequent diagnostics allow the reclassification of individuals into concurrent stages, tailored for individual needs. Combining HAPA treatment components such as self-efficacy, planning, and action control in the volitional phase of behavior change seems to be promising in the context of advanced technology-driven interventions.

7.7 Conclusion

The HAPA distinguishes between a motivational and a volitional phase of behavior change. It can be seen as a hybrid model combining the features of stage models and continuum models (see Chapter 6, this volume). In the motivational phase, outcome expectancies, action self-efficacy, and risk perceptions are factors that make the intention formation (goal setting) more likely. If a behavioral intention is not yet formed, then the individual is not sufficiently motivated to change and, therefore, in need of motivational support. In the volition phase, coping self-efficacy along with action planning and coping planning is important, with behavior maintenance supported by recovery self-efficacy and continuous action control (such as self-monitoring). In this phase, a behavioral intention has already been formed and the individual is motivated to attain a target behavior. Yet such individuals are in need of behavioral support to overcome barriers that prevent them translating their intentions into action. Behavioral intention operates as a bridge between the motivational and volitional constructs. Intervention design considers the position of the individual along the change continuum and targets the appropriate components within each phase that are most likely to move the individual further toward goal attainment. In general, current evidence provides support for both the motivational and the volitional components of the HAPA, particularly the stage-specific self-efficacy constructs, on health behavior (Zhang et al., 2019). Results corroborate research applying the model to a variety of different health behaviors (Schwarzer & Luszczynska, 2015). In moving the field forward, future HAPA interventions may benefit from drawing on advanced information and communication technologies as reflected by eHealth or mHealth applications (see Chapter 29, this volume). An example of an mHealth application is presented in Sidebar 7.2.

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