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Abstract

The goal of this chapter is to provide resources and best practice guidelines for planning interventions with broad application to behaviors of every day living. An overview of the theory and context for why planning is important to behavior change with a focus on current evidence is provided first. Key definitions and research evidence of various planning concepts and techniques: action and preparatory planning, implementations intentions, and coping planning are outlined. Subsequently, instructions are provided for people to formulate effective planning with examples among various relevant prosocial, health, academic, and business behaviors. Finally, current evidence and theory are provided with guidance on the types of planning interventions that may work in specific contexts and conditions, and the moderators that may influence the effectiveness of each approach. Each section includes further details that are provided with worked examples of resources to use based on prior research and various modes of delivery (e.g., face-to-face, website, wearables).

Practical Summary

This chapter looks at ways to change behavior that focus on planning. Different types of planning are defined and the evidence showing how to change behavior through planning is reviewed. Step-by-step guides are provided in relation to changing action plans (how, when, and where plans), preparatory plans (how plans leading to the action), implementation intentions (if-then plans), and coping plans (plans to overcome barriers). Worked examples for each type of plan are provided. Finally, research on when and how the application of these various planning techniques may be most or least successful is provided from the current evidence-base in practice.

38.1 Introduction

People attempt to incorporate many health, business, environmental, and prosocial behaviors into their daily and weekly lives to achieve desired outcomes. For example, new year's resolutions are an annual ritual of setting standards for self-betterment. People use these resolutions to pursue lofty goals such as exercising more, losing weight, eating healthier, learning a new skill, or starting a new hobby, and spending more time enhancing their personal well-being (The Telegraph, 2017). What is particularly interesting about this ritual, which is by no means limited to new year's resolutions, is that the anticipated benefits are already acknowledged by the person who is engaging in the resolution-making process. That is, the outcome or behavior is already desired. This contrasts motivational approaches (see Chapters in Section 1 of this Handbook for overviews of these approaches) that serve to educate a person about the potential outcomes of a given behavior in the hopes of increasing that person's motivation toward that behavior. Such motivational approaches include the reasoned action approach (see Chapter 2, Changing Behavior Using the Theory of Planned Behavior, Ajzen & Schmidt; Chapter 6, Changing Behavior Using the Health Belief Model and Protection Motivation Theory, Orbell), social cognitive theory (see Chapter 3, Changing Behavior Using Social Cognitive Theory, Luszczynska & Schwarzer), and self-determination theory (see Chapter 8, Changing Behavior Using Self-Determination Theory, Hagger et al.), and others detailed within this handbook.

For example, in the case of physical exercise, 95% of adults acknowledge they are already aware of the many health benefits of engaging in the behavior regularly (Martin, Morrow, Jackson, & Dunn, 2000; O'Donovan & Shave, 2007). Given that health is a valued outcome, it is thus unsurprising that the vast majority of adults (approx. 80%) hold positive

intentions to be regularly active (Rhodes & de Bruijn, 2013a), and explains why exercising more is the most common new year's resolution (The Telegraph, 2017). What is interesting, however, is that only half of those with positive intentions actually follow-through with engagement in exercise (Rhodes & de Bruijn, 2013a; Chapter 4, Gollwitzer & Sheeran). Further, most of those who do follow-through are already active people and not the people who recently formed new intentions (Rhodes, 2015), such as resolutions. This general finding is not unique to physical activity, as it has been replicated in numerous health, educational, and prosocial behaviors (e.g., Armitage & Conner, 2001; Conner & Norman, 2015; McEachan et al., 2016; Sheeran, 2002; Webb & Sheeran, 2006).

The modest relation between intentions and behavior, sometimes referred to as the "intention-behavior gap" (Orbell, 2004; Sheeran & Webb, 2016; see Chapter 4, Changing Behavior Using Model of Action Phases, Gollwitzer & Sheeran) represents a very real and important marker for intervention in many of the most sought-after behaviors in daily life. It suggests that interventions that can help focus good intentions or initial aims to change one's behavior, that can help organize and regulate motivation, or assist in preventing lapses in memory and focus attention, are likely crucial to actual behavior change. In order to address this aspect of behavior change, several theories focus on action control, the translation of intentions into behavior (e.g., de Vries, Mesters, van de Steeg, & Honing, 2005; Hagger & Chatzisarantis, 2014; Hall & Fong, 2007; Heckhausen & Gollwitzer, 1987; Kuhl, 1984; Rhodes, 2017; Schwarzer, 2008). These theoretical approaches all consider intention as a pre-requisite for motivated action, but presume that intention is a necessary but not always sufficient condition for actual behavior. While action control theories focus on several different constructs that may

bridge the intention-behavior gap, planning strategies are among the most common element across all of these theories (Rhodes & Yao, 2015).

Thus, the purpose of this chapter is to provide an overview of a select group of strategies that fall under this broad category of planning (i.e., strategies to achieve a desired goal) (Hagger et al., 2016). The theory and context of various planning concepts and techniques is briefly overviewed (see Table 38.1), followed by a discussion with the instructions needed to formulate effective planning. These planning strategies can take different forms, such as prompts or instructions provided by a practitioner, or even as a written or online print communication, and thus resources are also provided that include these various forms.

As noted above, theories that include planning consider intention (and thus some motivation) as a pre-requisite, so the approaches in this chapter are considered most appropriate for people who want to achieve a behavior and are seeking strategies to assist in behavior change. Goal setting is also a particularly important strategy that is considered pre-requisite to planning (see Chapter 44, Goal-Setting Interventions, Armitage & Epton). A goal is "the object or aim of an action… to attain a specific standard of proficiency, usually within a specified time limit" (Locke & Latham, 2002 p. 705), and goal setting is the process of agreement on a goal to be achieved that results in a target behavior. Setting goals serves four functions: 1) to direct attention and effort to the goal-based behavior and away from other activities, 2) to increase motivation toward the behavior specified in the goal, 3) to increase persistence to achieve the behavior, and 4) to prompt action leading to the development of self-regulation strategies to achieve the behavior (Locke & Latham, 2006). The planning strategies included in this chapter are particularly useful to achieve the latter function of goal setting and thus represent a logical

next step in this sequence. Specifically, setting a behavioral or outcome goal is a pre-requisite for a planning intervention.

--SIDE BAR 1--

There are a number of approaches that have been used in behavior change interventions. Four prominent approaches are action planning, implementation intentions, preparatory planning, and coping planning.

Action planning: formulation of an articulated set of procedures to assist in behavioral action (Leventhal, Singer, & Jones, 1965).

Preparatory planning: formulation of plans that enhance the availability and accessibility of resources needed to obtain the goal (Bryan, Fisher, & Fisher, 2002).

Implementation intentions: "if-then" action plans, whereby a link is forged between a cue and subsequent behavioral response (Gollwitzer & Brandstatter, 1997); see also Chapter 4, Changing Behavior Using Model of Action Phases, Keller, Gollwitzer, & Sheeran).

Coping planning: formulation of plans to overcome important barriers when action initiation and/or maintenance is challenged (Schwarzer, 2016).

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38.2 Action and Preparatory Planning

Intentions represent an individual's motivation and the degree of effort they are prepared to invest in pursuing a given behavior to achieve a specific outcome or goal (Fishbein & Ajzen, 1975; Rhodes & Rebar, 2017). Intentions can, therefore, be thought of as "what" individuals pursue. By contrast, *action planning* involves the further specification of the intention encompassing the "when", "where" and "how" elements of the behavior (see Table 1; Hagger & Luszczynska, 2014; Schwarzer, 2008; Sniehotta, 2009 see also Chapter 9, Changing Behavior

Using the Health Action Process Approach, Schwarzer & Hamilton). Specifically, "when" represents the temporal elements of a plan (i.e. the time the behavior will be enacted), "where" represents the contextual aspects of the plan (i.e., the place or location in which it will be performed), and "how" represents the specific sub-actions needed to accomplish the goal (i.e., the types of actions that need to be performed in order to fulfil the behavioral goal) (see Chapter 5, Changing Behavior Using the Model of Action Phases, Keller, Gollwitzer, & Sheeran, for further details). Although action planning components foster the translation from intentions to action, most behaviors require sub-actions to be completed prior to the execution of those action plans, such as ensuring one has the appropriate equipment (e.g., desk, computer, books for study behavior, athletic apparel for exercise, etc.). *Preparatory planning* specifies the when and where components formulated to the specified preparatory action (e.g., placing the curb recycling schedule near the front door) required to complete the specific action (e.g., planning when and how to curbside recycle).

The theory behind action planning can trace to early work from Ach (1905) and Lewin (1951), but stems primarily from models that have sought to augment traditional social cognition theories that tend to focus on the deliberative processes of intention formation (Leventhal et al., 1965). These models suggest that mere intention is likely insufficient to enact complex behaviors and thus self-regulatory skills, such as action planning, are needed to augment intentions in either a mediation or moderation capacity. They include, but are not limited to, the health action process approach (Schwarzer, 2008; see also Chapter 9, Changing Behavior Using the Health Action Process Approach, Schwarzer & Hamilton), integrated-change model (I-change model; (de Vries et al., 2005), the MoVo concept model (Göhner, Seelig, & Fuchs, 2009), the integrated behavior change model (Hagger & Chatzisarantis, 2014), and the multi-process action control

framework (Rhodes, 2017; Rhodes & de Bruijn, 2013b; see Chapter 14, Hagger & Hamilton, for a full discussion of integrated theoretical approaches to behavior change). Of key importance, action planning includes multiple cues to action for both simple (e.g., turning off a light switch to be power-smart) and complex (e.g., selecting, preparing and eating nutritionally balanced meals for long term health) behaviors (Hagger & Luszczynska, 2014). Thus, action planning is designed to impact behavior through mindful self-regulation (Bagozzi, 1992) and possibly through assisting in cognitive short-cuts that could assist in habit formation or automatic forms of action (de Bruijn, Gardner, van Osch, & Sniehotta, 2014; Fleig et al., 2013; Rhodes, 2017; also see Chapter 37, Habit Interventions, Gardner et al.). Furthermore, the technique of action planning is conceived as being an intuitive outcome for many people that naturally follows an intention (Carraro & Gaudreau, 2013; Schwarzer, 2008), but also a skill that can be acquired (Allan, Sniehotta, & Johnston, 2013), and thus a behavior change technique (Michie et al., 2013). Specifically, this means that action plans can be formed through prompts and exercises provided in written communications or by practitioners. It is this format of action planning that is the focus of interest in this chapter.

38.2.1 Evidence base.

An appraisal of the efficacy of action planning is difficult at present, because it has often been aggregated with implementation intentions (see implementation intentions section later in this chapter) or as part of a multi-component intervention. The best examinations of this technique come from interventions upon health behaviors. For example, Carraro and Gaudreau (2013) showed a small effect of action plans on changes in physical activity behavior compared to control groups among 19 eligible studies, suggesting the technique is effective in changing behavior above no treatment.

38.2.2 A step-by-step guide.

The central premise of an action planning intervention is to induce individuals to develop a detailed and concrete plan of how to enact a behavior for which they have an intention to achieve (see Chapter 9, Changing Behavior Using the Health Action Process Approach, Schwarzer & Hamilton). Delivery formats traditionally include either interviewer-assisted or non-assisted print or online communication whereby individuals are asked to record their detailed plans. Typically, scripts outlining the concept of action planning are presented to the target audience, those whose behavior needs to change, from the outset (see Appendix 38.1, supplemental materials for scripts). Individuals are then prompted to specify the details involved in carrying out their behavioral intention. In practice this may be presented as requesting the individual to first note or record their behavioral intention, then detail the "when", "where", and "how" elements of how to carry out that desired behavior. This could be presented as a form requiring individuals to complete their goal and plan – such as completing sentences or filling in blank entries on a timetable or calendar (see Appendices 38.1 and 38.2, supplemental materials for examples).

For example, in an action planning intervention to increase physical activity, a practitioner could first note the target behavior of achieving 150 minutes of moderate to vigorous physical activity per week. Next, the practitioner could ask participants to fill in the detailed plans of how to enact this behavior, namely by indicating when, where, and how they will accomplish the desired behavior. A suitable action plan would be: 'On Monday, Wednesday, and Friday at 5pm (when), I will go for a 50-minute jog each day (how) around my neighborhood (where)' (see Appendix 38.3, supplemental materials for a complete example of an action planning intervention).

Preparatory planning interventions follow a similar logic and format but differ in that they focus on the "when" and "where" of preparatory actions needed to achieve the target behavior rather than the behavior itself. In particular, people could be asked to think of the simple sub-actions leading up to the target goal behavior, and plan specifically for those sub-actions (see Appendix 38.4, supplemental materials). For instance, if one has formulated a goal to achieve 150 minutes of physical activity in a week, one may need to pack their workout gear at home in the morning in order to get their workout in after work. Alternatively, one may place this workout gear in a visible location at home, so that the moment they arrive at home they are immediately able to dress into their running gear (see Appendix 38.5, supplemental materials for a full example of a preparatory action planning intervention).

38.2.3 Implementation considerations

Despite their conceptual differences, the means of delivery for action and preparatory planning interventions are similar. In general, participants are requested to think of plans that are not too difficult to achieve and that they are certain of obtaining, consistent with some of the key principles of goal setting (see Chapter 44, Goal-Setting Interventions, Armitage & Epton). Occasionally, participants are additionally requested to visualize enacting these plans. Plans are often written down using paper-and-pencil or in website textboxes. This aids specific formulation of the plan, which is important for the quality and appropriateness of the plan and intervention fidelity. A meta-analysis of action planning interventions to promote physical activity indicated a number of conditions that enhance the effectiveness of action planning interventions (Carraro & Gaudreau, 2013). Specifically, action planning interventions produce stronger effects when people (a) already hold strong intentions; (b) are older; (c) were previously less active; (d) formulate plans that contain four components (as opposed to fewer components);

and (e) are in rehabilitation (Carraro & Gaudreau, 2013). Mode of delivery, such as solitary paper-and-pen or interviewer-assisted studies, or when plans are set by the study participants or by researcher, do not seem to affect action planning effectiveness for physical activity.

There is also evidence that pre-existing planning skills makes action planning more effective (Allan et al., 2013). For example, in a study on diet behaviors, Allan et al. (2013) demonstrated that participants who were more skilled in planning (as assessed by a planning task (Wilson, Alderman, Burgess, Emslie, & Evans, 1996)) were more likely to follow-up on their intention to log on to a website and complete an online diary on snack intake than those with poor planning skills. In contrast, research on physical activity indicates that planning seems to become less relevant once physical activity, or, at least, the decision to instigate physical activity, has become habitual and people feel more efficacious to engage in exercise behavior (de Bruijn et al., 2014).

To date, there are relatively few experimental studies examining the proposed benefits of preparatory planning in changing behavior. Given the lack of experimental work on the added benefits of preparatory plans, caution is needed to understand the boundary limits of these instructions. However, there is preliminary evidence that these instructions are as effective as action planning in decreasing snack intake (De Bruijn, Nguyen, Rhodes, & van Osch, 2017).

38.3 Implementation intentions

Implementation intentions have considerable conceptual overlap with action plans and the two terms are often used interchangeably (see Table 1; Hagger & Luszczynska, 2014; Hagger et al., 2016; Michie et al., 2013; see also Chapter 4, Changing Behavior Using the Model of Action Phases, Keller, Gollwitzer, & Sheeran). Just like action plans, implementation intentions extend from intentions to specify the “when”, “where”, and “how” aspects of a plan (Gollwitzer

& Brandstatter, 1997; Gollwitzer & Sheeran, 2006). Implementation intentions, however, are also termed “if-then” plans, whereby a link is forged between a cue and subsequent behavioral response (Gollwitzer, 2014; Gollwitzer & Sheeran, 2006; Hagger & Luszczynska, 2014).

Implementation intentions arose from the development of the model of action phases (Gollwitzer, 1990; Heckhausen & Gollwitzer, 1987). In the model, two separate ‘phases of action’ are proposed: a motivational or ‘pre-decisional’ phase and a subsequent volitional or ‘implementation’ phase (see Chapter 4, Changing Behavior Using the Model of Action Phases, Keller, Gollwitzer, & Sheeran; Chapter 11, Chapter 9, Changing Behavior using the Health Action Process Approach, Schwarzer & Hamilton). Implementation intentions represent a key strategy within the volitional phase that is hypothesized to bind motivation to behavior (Gollwitzer, 1999). Given the distinction between motivation and volition, implementation intentions are particularly suitable for behaviors where the motivation to enact the desired behavior is stable, but inaction may occur due to forgetting to recall the intention, failing to seize an appropriate moment to act, or inadequate shielding from other more desirable courses of action (Gollwitzer & Sheeran, 2006).

The theory behind implementation intentions suggests that the process of specifying contingency cues to a behavioral response helps build a link that is below conscious awareness (Gollwitzer & Sheeran, 2006). Thus, implementation intentions may be considered akin to the process of habit formation, without the prolonged period of behavioral repetition typically required to form a habit (Gollwitzer, 1999; Wood & Runger, 2016). This occurs by highlighting the appropriate cues aligned to the intended behavior, and making the appropriate behavioral response more accessible when the cue is presented. Interestingly, research on using implementation intentions to counter an existing habit has shown that implementation intentions

can also eliminate the advantage on an established habitual response and thus offer an individual flexibility to choose which behavior to perform in the situation as long as the motivation to perform a behavior is strong (Adriaanse, Gollwitzer, De Ridder, de Wit, & Kroese, 2011). Thus, implementation intentions may be useful to break "bad habits" or undesired behaviors and replace these with the desired behavior, by providing more flexible choice options between the healthy and unhealthy options.

Hagger and Luszczynska (2014) make a critical point that implementation intentions are focused on developing a link between a cue and a highly specific behavioral response (e.g., "when I enter the grocery store, I will go to the vegetable aisle"), instead of a general behavioral response that may involve a complex sequence of actions ("regular healthy eating"). Research in complex health behaviors has tended to disregard this important conceptual aspect (De Bruijn et al., 2017; Sniehotta, 2009), and contemporary research on the psychology of habits has made the same distinction (see Gardner, Phillips, & Judah, 2016; Rhodes & Rebar, 2018). These conceptual boundaries of implementation intentions also represent how it can vary from action planning, because action planning can be both a conscious deliberative process or a non-conscious process and apply to both complex behaviors and simple behaviors (Hagger & Luszczynska, 2014).

38.3.1 Evidence base.

Several reviews and meta-analyses have explored the effectiveness of implementation intentions in changing behavior for multiple behaviors (see also Chapter 4, Changing Behavior Using the Model of Action Phases, Keller, Gollwitzer, & Sheeran). For example, Gollwitzer and Sheeran (2006) conducted a meta-analysis of 94 studies across diverse behaviors and found a medium-sized effect of implementation intentions on behavior. Meta-analyses of implementation

intention effects on behavior change in certain health behaviors such healthy eating (Adriaanse, Vinkers, De Ridder, Hox, & De Wit, 2011; Vilà, Carrero, & Redondo, 2017) and physical activity (Bélanger-Gravel, Godin, & Amireault, 2013) have also shown medium-sized and small-sized effects from implementation intentions, respectively.

38.3.2 Step-by-step guide

The objective of an implementation intention intervention is to have an individual identify a critical situation or cue and link it with the enactment of the appropriate behavior. This process facilitates efficient recall between the cue and the desired action. In most applications, interventions utilizing implementation intentions explicitly name the target behavior, explain why using the technique can be effective, provide an illustration of an implementation intention, and have participants work through examples in the 'if-then' format.

There are two main approaches to developing implementation intentions, namely self-generated and pre-specified. In the self-generated form, implementation intentions are specific to the individual, and it follows that individuals generate their own personal implementation intentions in the 'if-then' format (see Appendix 38.6, supplemental materials for scripts). Conversely, in the pre-specified style, participants are presented with a list of 'if-then' statements by which they select the instances that apply to them and choose a correspondingly appropriate behavioral response for each instance. This pre-specified approach arose from the development of volitional help sheets, which are a standard tool designed to facilitate the formation of personalized implementation intentions by providing a list of critical situations that could be encountered and potentially useful responses for behavior change (Armitage, 2008; see Appendix 38.7, supplemental materials for volitional help sheets).

For instance, in a self-generated implementation intention intervention aimed at promoting use of reusable bags to reduce waste caused by single-use plastic bags when visiting the grocery store might adopt the following (adapted from Chapman & Armitage, 2010; see Appendix 38.12, supplemental materials):

> We would like you to begin bringing your reusable bags to the grocery store. Research has shown that if we identify a situation, then decide what to do in that situation, we may be more likely to turn our intentions into actions. For example, statements such as the following can be useful: 'If I am walking out the door to the grocery store then I will grab a reusable bag.' Please write your plans to use your reusable bags in the space provided, following the format in the previous example ('if…then…').

In contrast to the above, an implementation intention intervention aimed at promoting use of reusable bags in the pre-specified style would present a table with two columns. The first column would contain situations or temptations, and the second column would contain responses or solutions. Next, individuals would be instructed to link situations with appropriate responses. For example, one may link a pre-specified situation from the first column, such as: "If I am walking out the door to the grocery store", to an appropriate response from the second column, such as "then I will ensure I have a reusable bag with me".

38.3.3 Implementation considerations

Although theory would suggest that implementation intentions are effective for all populations and behaviors, there is evidence that the effectiveness of these strategies varies across behaviors and individuals (Gollwitzer & Sheeran, 2006). For instance, people who have a strong desire to (re)act impulsively tend to benefit less from implementation intentions (Churchill & Jessop, 2010). Moreover, evidence suggests that implementation intentions tend to

produce stronger effects on behavior when that behavior concerns the uptake of a behavior (e.g., increasing fruit and vegetable intake) than when it concerns reducing an existing habitual behavior (e.g., limiting snack intake) (Adriaanse, Vinkers, et al., 2011). Furthermore, effects of implementation intentions also tend to be more pronounced when higher quality measures are used to assess behavior, and a shorter time period over which behavior is measured. Finally, implementation intentions instructions have stronger effects on behavior when people already have strong pre-existing planning skills (Allan et al., 2013), when implementation intention instructions are combined with self-affirmation manipulations (Harris et al., 2014), and when implementation intentions are more specific (van Osch, Lechner, Reubsaet, & De Vries, 2010) and mentally imagined (Knäuper et al., 2011).

In summary, although implementation intentions have been found to be effective for behavior change and that these effects are in the small-to-medium effect size range, practitioners employing implementation intention instructions should be aware of specific caveats, such as (a) that specific individuals may be more or less responsive to implementation intention instructions; (b) effects may vary for specific behaviors and may diminish over longer time periods; and (c) some individuals may require additional instructions, such as mentally imagining the sequence of acts.

38.4. Coping Planning

Coping planning refers to plans developed to account for contingencies when barriers may arise that impede the performance of a behavior (see Table 1; Sniehotta, Schwarzer, Scholz, & Schuz, 2005; Chapter 9, Changing Behavior using the Health Action Process Approach, Schwarzer & Hamilton). They are ostensibly ‘back-up’ plans to an action plan in order to help increase the chances of success of the behavioral performance in the face of expected barriers

and difficulties (Napolitano & Freund, 2016; Schwarzer, 2016). Schwarzer (2016) describes coping plans as a variation of the initial action plan in terms of the target behavior, the time, the social situation, and other situational factors. Thus, coping plans may complement an action plan by having the planner consider the potential barriers that could thwart the "when", "where", and "how" aspects and provide alternatives to ensure that the action plan is implemented.

Coping plans were developed initially for a cardiac rehabilitation study in which the authors sought to conceptualize different aspects of planning (Sniehotta et al., 2005), and the strategy has gained traction in the scientific literature since that time (see Schwarzer, 2016 for an overview). They feature prominently in the health action process approach (Schwarzer, 2008: Chapter 9, Changing Behavior Using the Health Action Process Approach, Schwarzer & Hamilton), but coping planning is also sometimes included in variants of the theory of planned behavior (Ajzen, 1991) and the multi-process action control framework (Rhodes, 2017; Rhodes & de Bruijn, 2013b). Further, coping planning shares considerable overlap with overcoming performance barriers, which is a hallmark strategy in other social cognitive approaches such as the health belief model (Rosenstock, 1974; see also Chapter 6, Changing Behavior Using the Health Belief Model and Protection Motivation Theory, Orbell), the transtheoretical model (Prochaska & DiClemente, 1982; see also Chapter 7, Changing Behavior Using the Trans-Theoretical Model, DiClemente and Graydon), and social cognitive theory (Bandura, 1986; see also Chapter 3, Changing Behavior Using Social Cognitive Theory, Luszczynska & Schwarzer). Coping planning is also linked to action planning because one must have an initial plan to use as a template in order to develop alternative plans. Thus, coping plans are more elaborate action plans (Hagger & Luszczynska, 2014).

38.4.1 Evidence base

Like action planning, evidence for the efficacy of coping planning is relatively limited at present with most of the work focused on health behaviors given the physical activity and health origin of the technique (Sniehotta et al., 2005). Kwasnicka et al. (2013) conducted a systematic review of coping planning applied to health behaviors that identified 11 studies testing coping planning effects in interventions across multiple populations and behaviors. The authors concluded that coping planning was an effective technique to increase health behaviors, and particularly effective in augmenting action planning. However, not all studies found intervention effects – this included three large sample studies with strong experimental designs. Carraro and Gaudreau's (2013) meta-analysis of coping planning in physical activity studies identified a small effect on behavior change when compared to no-treatment controls, and a medium-sized effect when coping planning was combined with action planning.

38.4.2 Step-by-step guide

A common approach to a coping planning intervention includes four basic steps: delivering a message about coping planning and its utility, providing an example of a coping plan, prompting participants to consider potential barriers that may impede their performance of a target behavior, and finally, asking participants to develop a coping plan to overcome each anticipated barrier or difficulty (see Appendix 38.9, supplemental materials for coping planning interventions employed across various health behaviors).

For example, an intervention to promote studying behavior to improve academic achievement in students would initially provide students with a rationale and description of coping plans and their utility: "Coping plans are reserve plans that can be used to increase the chances of studying in the face of expected difficulties. They require a clear anticipation of barriers that may interfere with your studying behavior. By identifying these potential barriers

that could impede your studying, you can develop strategies to overcome these obstacles". This introduction might be followed by an example of a coping plan: "For example, if you identified friends asking you to hang out together as a barrier to your studying, a possible coping plan might look like this: 'If my friends ask to get together, I will say no, I have to study and head to straight to the library'". Next, students would be prompted to identify the salient barriers: "Which obstacles or difficulties might occur that would interfere with your studying behavior? Please list them". The final step would be to prompt students to form strategies to overcome each anticipated barrier: "Think of one strategy to overcome each potential barrier to studying and list them" (please refer to Appendix 38.10, supplemental materials for a complete example intervention).

38.4.3 Implementation considerations

Kwasnicka et al.'s review of the effects of coping plans suggested that coping plans were effective in changing behaviors, particularly when used in conjunction with action plans and strategies to enhance self-efficacy (Kwasnicka et al., 2013 see Chapter 39, Self-Efficacy Interventions, French & Warner). Most studies provided participants with a list of pre-identified barriers in the context of hypothetical scenarios and required participants to self-select personally-relevant barriers from that list (see the previous examples and those in Appendix 38.10, supplemental materials). Such a strategy may be workable from a practical perspective, as most of the barriers can be collapsed into tempting situations (e.g., in the evening at home, watching television on the couch) and their precursors (e.g., fatigue after a long day at work) and physical boundaries (e.g., being stuck in traffic so one arrives at the gym when it has closed). Furthermore, most of the identified studies reported that coping planning instructions were filled in using pen-and-paper under the supervision of a health practitioner, whilst only a small part

were done over the internet or telephone. The benefit of monitoring how and which coping plans are formulated in pen-and-paper setting is that these can then be checked for adequate formulation and adapted when needed (Kwasnicka et al., 2013). This is relevant for practitioners, as the majority of pen-and-paper interventions (5/6) were more effective as compared to control conditions. Likewise, coping planning interventions supplemented with action planning interventions also appear to be more effective when they are conducted using pen-and-paper designs. Finally, there is presently limited information on effective moderators of coping planning instructions.

In summary, practitioners should consider employing coping planning interventions when they have the opportunity to monitor and adapt the coping planning instructions that their clients are formulating. The evidence to date does not allow to further detail for which individuals and behaviors coping planning instructions are more effective. There is also little evidence of the time periods over which coping planning instructions are most effective. However, the evidence to date does point that supplementing coping planning instructions with action planning instructions enhances the likelihood for behavioral change.

38.5. Conclusions

Planning and implementation intention interventions have shown considerable promise in fostering behavior change in many contexts (e.g., prosocial, business, academic, and health). This chapter has detailed three types of planning interventions (action and preparatory planning, implementation intentions, and coping planning), outlined the theoretical and evidence base for how they work, and provided evidence-based guides on how these should be applied in behavior change interventions in practice. These planning instructions related to the preparation of action, the identification of important cues to action, and shielding action initiation and maintenance for

important barriers. The application of these three strategies in that specific order allows practitioners to develop and implement successful behavior change interventions. Practitioners should also consider important elements that may either enhance or decrease the effectiveness of these interventions, such as the type of behavior they wish to promote, the time period over which they want to see behavioral change, and the psychological make-up of their clients.

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Table 1

Planning Concepts and their Relationship with Intervention Taxonomies

Taxonomy	Concept	Technique (cluster)	Primary/Related	Description
Michie et al. BCTTv1 (Michie et al., 2013)	Action Planning	1.4 (9 – Goals and Planning)	Primary	Prompt detailed planning of performance of the behavior.
	Coping Planning	1.2 (9 – Goals and Planning)	Primary	Analyse, or prompt the person to analyse, factors influencing the behavior and generate or select strategies that include overcoming barriers and/or increasing facilitators
	Implementation Intentions	1.4 (9 – Goals and Planning)	Primary	Prompt detailed planning of performance of the behaviour. Context may be environmental (physical or social) or internal (physical, emotional or cognitive) (includes 'Implementation Intentions')
Intervention Mapping Taxonomy (Kok et al., 2016)	Action Planning	Implementation Intentions (Methods to Change Habitual, Automatic and Impulsive Behaviors)	Related	Prompting planning what the person will do, including a definition of goal-directed behaviors that result in the target behavior.

	Coping Planning	Planning Coping Responses (Methods to Change Habitual, Automatic and Impulsive Behaviors; Methods to Change Skills, Capability, and Self-Efficacy and to Overcome Barriers)	Related	Getting the person to identify potential barriers and ways to overcome these.
	Implementation Intentions	Implementation Intentions (Methods to Change Habitual, Automatic and Impulsive Behaviors)	Primary	Prompting making if-then plans that link situational cues with responses that are effective in attaining goals or desired outcomes.