

Hale and Hearty Policies: How Psychological Science Can Create and Maintain Healthy Habits

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Abstract

Strategies are needed to ensure that the U.S. Government meets its goals for improving the health of the nation (e.g., *Healthy People 2020*). To date, progress toward these goals has been undermined by a set of discernible challenges: People lack sufficient motivation, they frequently fail to translate healthy intentions into action, their efforts are undermined by the persistence of prior unhealthy habits, and they have considerable difficulty maintaining new healthy patterns of behavior. Guided by advances in psychological science, we provide innovative, evidence-based policies that address each of these challenges and, if implemented, will enhance people's ability to create and maintain healthy behavioral practices.

Keywords

health behavior, intention, maintenance, habits, policy

Each decade since 1979, the U.S. Government has specified national goals regarding the health of the nation; yet attainment of these goals has proven difficult (e.g., National Center for Health Statistics, 2012). *Healthy People 2020*, launched in December 2010, specified 26 goals including reducing the rates of obesity, increasing the rates of colorectal cancer screening, and reducing the rates of substance use behaviors such as smoking and binge drinking (U.S. Department of Health and Human Services, n.d.). According to an update in 2014, 4 out of the 26 objectives have been met, 10 showed modest improvement, and 12 showed no improvement or had gotten worse (Koh, Blakely, & Roper, 2014). As initiatives are designed and implemented to meet these goals, it is critical that advances in psychological science guide these efforts.

Most of the health outcomes identified in these reports rest on people's behavior—the actions they take and those they fail to perform. Underlying these behavioral patterns is an important, discernable set of challenges. People fail to take appropriate action even though they recognize what should be done and intend to take action. The persistence of unhealthy habits undermines efforts to perform a new behavior, and even people who initiate

a new pattern of behavior find it difficult to maintain it long enough to achieve the desired outcome (Rothman, Sheeran, & Wood, 2009). Fortunately, innovative, evidence-based strategies are available to address each of these challenges. Investigators have developed strategies that can help people to (a) focus on beliefs that motivate healthy action, (b) form intentions that are more likely to lead to healthy action, (c) disrupt the influence of prior unhealthy habits, and (d) develop routines that lead to new healthy habits. In the sections that follow, we outline these strategies and describe how and when these tools can be used to enhance policies designed to advance public health.

Strategies That Motivate Action

How should we encourage people to visit the dentist, eat a healthier diet, or stop smoking? Intervention efforts, especially those that involve health messages, rest on the

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assumption that people will be motivated to modify their behavior if they understand the costs posed by their unhealthy habits (Rothman & Salovey, 2007). Yet, psychological science shows that people are reluctant to recognize personal risks and are overconfident about their own invulnerability to health problems (Dunning, Heath, & Suls, 2004). What evidence-based strategies motivate action while avoiding people's tendency to minimize their own vulnerability?

Thinking about other people can motivate action

An approach that successfully increased hand washing in hospitals involved emphasizing the impact of one's behavior on others (Grant & Hofmann, 2011). This contrasts with the limited success of more standard appeals to encourage medical professionals to wash their hands, such as, "Hand hygiene prevents you from catching diseases." Specifically, when an appeal was altered to refer to "patients" instead of "you," rates of hand washing increased by 10% and soap use increased by 45%. Why is it effective to shift people's focus away from consequences for themselves and toward consequences for others? People can easily convince themselves of their own invulnerability, but they are less motivated and able to do this when judging others' risk (Dunning et al., 2004).

Policy implications. Initiatives that focus attention on consequences for others may be particularly effective in situations in which messages about personal health consequences are likely to be processed defensively (Dunning et al., 2004; Rothman & Salovey, 2007). For example, people may be motivated to minimize information about their personal risk for catching the flu and thus show limited interest in getting a flu shot, but they are willing to acknowledge and act on information about the health risk the flu poses to their young children or elderly parents. People can also be reminded of the indirect consequences of their health behaviors: If they do not take care of themselves, their loved ones may suffer. With this knowledge in mind, policymakers should modify regulations regarding signs to promote hand washing in medical facilities and in eating establishments (i.e., highlighting the impact of the behavior on patients and customers, respectively). Public service announcements might similarly encourage people to quit smoking for their spouses or get flu shots for their parents or children.

Strategies That Aid the Translation of Intentions Into Action

Even when people decide to take action to improve their health, there is, on average, only a 50% chance that their

intention will lead to action (Sheeran, 2002). Why is there a gap? In many cases, people fail to get started—an intention is forgotten, the opportunity to take action passes, or confusion about how to act engenders paralysis. In addition, people's initial efforts can be derailed—they fall prey to temptations, distractions, low willpower, or fatigue (Gollwitzer & Sheeran, 2006).

Bridging the gap between intentions and action

An evidence-based strategy that can help people get started and stay on track as they pursue a health goal is the formation of *if-then plans* (Gollwitzer, 1999; Gollwitzer & Sheeran, 2006, 2008). If-then plans provide a structure in which people (a) identify key opportunities for, or obstacles to, taking action, (b) specify a way to respond to each opportunity and obstacle, and then (c) formalize a link between the opportunity or obstacle and the response:

"If (opportunity/obstacle) arises, then I will (respond in this way)!"

Because if-then plans specify in advance when, where, and how to respond to critical situations, they enable people to seize opportunities that they might otherwise miss and manage obstacles that might otherwise be overwhelming. For instance, patients who wrote down the plan "If it is [time] and I am in [place], then I take my pill dose!" took 79% of their medication on schedule as compared with 55% of patients who did not formulate a plan (Brown, Sheeran, & Reuber, 2009). Similar patterns of results have been observed across a broad array of health behaviors ranging from cancer screening (e.g., Neter, Stein, Barnett-Griness, Rennert, & Hagoel, 2014) to dietary behavior (Adriaanse et al., 2011) and physical activity (Bélanger-Gravel, Godin, & Amireault, 2013). Moreover, if-then plans are especially effective when people find themselves in circumstances that impair their ability to translate healthy intentions into action (e.g., limitations in self-control, Gawrilow, Gollwitzer, & Oettingen, 2011; feelings of arousal, Webb et al., 2012; or forgetfulness, Chasteen, Park, & Schwarz, 2001).

Policy implications. If-then plans are easy to deliver (Oettingen, 2012; see www.woopmylife.org) and can be readily integrated into a number of policy initiatives. For example, key documents such as appointment letters, medication or behavioral prescriptions and instructions, and health education leaflets should be modified to include a structured opportunity for people to develop if-then plans. The benefit of formulating if-then plans and strategies to support their use should also be

integrated into the training provided to healthcare professionals.

Strategies to Disrupt Existing Habits

Even after someone has adopted a new pattern of behavior (e.g., a new diet), older, habitual patterns can linger and remain a challenging adversary. Because habits involve memory systems that are relatively separate from those that represent people's goals and conscious intentions, old habits do not change immediately when people adopt new goals (Walker, Thomas, & Verplanken, 2014). Instead, familiar contexts and routines can bring the old, unwanted behavior to mind, leaving people at risk of lapsing back into unhealthy behavior patterns (Wood & Neal, 2007). What evidence-based strategies mitigate the continued pull of unhealthy habits and provide an opportunity for people to sustain a new pattern of behavior?

One approach involves capitalizing on context changes in people's lives (e.g., moving to a new house, starting a job, having a child). The shifts in context associated with these changes reduce people's exposure to cues that trigger old habits (Wood, Tam, & Witt, 2005). Disruptions in old habits can also arise when people deliberately modify the microenvironments in which they work and live (e.g., changing the visibility or arrangement of food choices; Sobal & Wansink, 2007) or develop personalized if-then plans to counter the unwanted habitual response (Adriaanse et al., 2010).

A second approach involves policies that introduce behavioral friction to existing contexts that make it harder for people to follow their unhealthy habits. For example, with the introduction of smoking bans in UK pubs, people with strong habits to smoke while drinking were no longer able to effortlessly light a cigarette when they felt the urge to smoke (Orbell & Verplanken, 2010). The behavioral friction induced by having to leave the pub to smoke may have disrupted the automated associations between drinking and smoking and, in turn, contributed to reduced smoking rates. Similarly, with bans on the visible display of cigarettes in retail environments, potential purchasers have to remember to deliberately request cigarettes in order to buy them (Wakefield, Germain, & Henriksen, 2008). In both cases, the policy is designed to make people shift from relying on an automated, reflexive response to a more deliberate, effortful decision.

Policy implications

Policy initiatives can utilize these two different strategies in a number of ways. First, social marketing campaigns could be structured to capitalize on opportunities afforded by changes in people's work or home environments. For example, communities could provide free

vouchers for public transportation to people who have recently moved. Building codes could also be modified to ensure that healthy behavioral options are salient and, if possible, the default choice (e.g., salience of stairs vs. elevators in building entranceways). Second, the approaches that have been used to disrupt smoking-related behaviors could be disseminated to settings where automated, reflexive responses to cues are known to underlie an unhealthy pattern of behavior. For example, restaurants that offer "value meal" packages should provide a healthy food as the default option (e.g., apple slices instead of French fries).

Strategies to Develop Routines That Create New Habits

The benefits afforded by changes in health practices such as increased physical activity only accrue if the change in behavior is sustained over time; yet people have difficulty maintaining new patterns of behavior (Rothman, Baldwin, & Hertel, 2004). What can be done to increase the likelihood that people's healthy choices develop into new habits? In daily life, people who are able to stick with healthy behaviors often rely on well-practiced habits that reliably meet their health goals (Galla & Duckworth, in press). For example, they might structure their homes with a consistent set of visible cues that promote healthy choices (e.g., accessible fresh vegetables) and remove cues that trigger unhealthy ones (e.g., TVs in bedrooms).

One approach to transforming new behaviors into strong habits involves facilitating the repetition of the desired behavior in a stable context (Danner, Aarts, & de Vries, 2007). For example, when people perform a behavior repeatedly in the same context (e.g., taking a walk after dinner), over time it becomes sufficiently automated to be performed without thinking (Lally, Van Jaarsveld, Potts, & Wardle, 2010). Although the number of repetitions necessary to instill a habit can vary considerably, once it is formed, people can rely on the well-practiced behavior to protect them when they are distracted (Labrecque, Wood, Neal, & Harrington, 2015) or their willpower is low (Neal, Wood, & Drolet, 2013). Another approach to automating new behavior involves piggybacking a new health behavior onto an existing habit. For example, dental flossing habits were established most successfully when people practiced flossing immediately after they brushed their teeth (rather than before; Judah, Gardner, & Aunger, 2013; see also, Labrecque et al., 2015).

Policy implications

Forming new habits through repetition in stable contexts and through piggybacking onto existing habits can inform the design and dissemination of new policies. First,

Table 1. How Evidence-Based Solutions Can Be Used to Address Four Challenges to Successful Health Behavior Change

Challenges to successful health behavior change	Solution	First example policy recommendation	Second example policy recommendation
Insufficient motivation to take action	Highlight implications of performing behavior for others	Policies to promote hand washing in health care facilities and eating establishments should emphasize the implications for patients and customers, respectively.	Policies to promote precautionary behaviors such as wearing seat belts or bike helmets could remind parents of the consequences for their children.
Failure to turn intention into action	Form if-then plans	Policies should ensure that people can formulate if-then plans on documents such as doctor's appointment letters.	Policies should ensure that the provision of medication prescriptions or behavioral instructions include an opportunity to formulate an if-then plan.
Old habits persist and interfere with a new plan of action	Remove or bypass cues that trigger an old habit	Distribute public transportation information and free transit vouchers to people who have recently moved.	Design buildings so that stairways are salient and encountered before elevators.
	Create behavioral friction to impede the habitual response and encourage consideration of alternatives	Ban display of products such as cigarettes in retail stores so that purchasers have to request them.	Restaurants should provide healthy alternatives as the default option in "value meal" packages (e.g., apple slices instead of fries).
New pattern of behavior is not sustained	Form stronger habits through context-stable repetition or piggyback a new desired behavior onto an existing habit or context cue	Elementary school curricula could include the regular performance of context-stable health behaviors (e.g., hand washing after using the restroom).	Product labels as well as pharmacists can instruct patients how to piggyback medication onto existing daily routines.

interventions should be designed to reinforce consistent behavioral practices (e.g., exercising at the same time each day). The structure and routines that characterize school and work environments may make these settings particularly well suited for this intervention approach. For example, school policies, especially in elementary schools, could be structured to reinforce healthy behavior such as consistent hand washing after using the restroom or repeated fruit and vegetable consumption during school lunches (e.g., Lowenstein, Price, & Volpp, 2014). Second, innumerable opportunities exist to connect a new behavior to an existing habit in people's daily lives. For example, campaigns could link replacing smoke alarm batteries to when people change the clock for daylight savings or pair a new health practice (e.g., taking pills) with a daily habit (e.g., eating dinner).

Summary

Given the important personal and societal benefits that come from meeting or exceeding the goals identified in reports such as *Healthy People 2020*, it is imperative that policy initiatives utilize evidence-based strategies to promote healthy behavior. The developments in psychological science that we have reviewed provide an

evidence-based framework to address challenges that have confounded past attempts at behavior change. Because the approaches we have highlighted provide solutions to specific challenges, investigators should take care to use them accordingly. To facilitate their application, Table 1 summarizes the link between each challenge and its given solution and provides example policy recommendations.

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