Journal of
Disease Prevention and Health Promotion

Mini-Review

Empower your wellness: setting SMART goals to live healthy in the digital age

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Received: 15 December 2023; **Accepted:** 26 January 2024; **Published:** 30 January 2024
Citation: Chen, S. (2024). Empower your wellness: setting SMART goals to live healthy in the digital age. J. Dis. Prev. Health Promot. 8, 5–8.
DOI: 10.5283/jdphp.49

Abstract

A growing population worldwide now recognizes wellness as a life priority. Optimal wellness can be achieved through formulating life habits of engaging in health-promoting behaviors but avoiding health-damaging behaviors. This mini-review begins with the notion that changing habit-based behaviors is challenging and requires personalized behavior counseling and environmental or situational manipulations. It outlines the important value of effective behavior management for healthy living. The iterative cycle of behavior management consists of SMART goal setting, behavior monitoring, and goal evaluation. Importantly, this behavior management process can be facilitated by artificial intelligence (AI) technology. The paper showcases the *ProudMe* intervention, which utilizes AI to facilitate the guided management of health-related behaviors among young adolescents. The *ProudMe* intervention also uses other health psychology strategies (e.g., functional social support, motivational interviewing) and additional intervention components across environmental settings to influence child behaviors and reduce obesity and health risks. Interventions like *ProudMe* usually demand careful manipulations to both individual and environmental factors in order to render significant public health impact.

Keywords: Adolescence; Artificial intelligence; Behavioral management; Health psychology; Intervention.

1. Background and rationale

The COVID-19 pandemic plagued the world for over three years causing enormous disruptive impact (e.g., mortalities/ morbidities, sociocultural disruptions) (Worldometer, 2023). In the wake of a major public health crisis like this, more and more people have grown to value the importance of health and wellness (Piatto Clerici et al., 2023). A growing number of the population regarded wellness as a life priority in 2022 compared to 2020 (McKinsey and Company, 2022). Wellness and health share some similarities, but they are not entirely the same (Corbin et al., 2009). Being healthy refers to freedom from illness and disease (signs, symptoms, disability), whereas wellness is more complex and usually encompasses factors across dimensions (i.e., physical, social, intellectual, spiritual, emotional, and occupational wellness) (Corbin et al., 2009; Hettler, 1976; Travis, 2010). Given the multi-dimensional nature of wellness, it is fair to say that a healthy person does not always have good wellness, but a person with optimal wellness usually has good health but much more.

Optimal wellness can be achieved through formulating life habits of engaging in *health-promoting* behaviors (e.g., exercise regularly, eat balanced meals in moderation) but avoiding *health-damaging* behaviors (e.g., prolonged uninterrupted sitting, binge drinking, substance use) (Frates, 2021; Ohurungu, 2016). In the younger population, for instance, it is strongly substantiated that meeting the recommended levels of the 24-hour movement behaviors (i.e., physical, sleep, sedentary behavior) is associated with numerous health outcomes, whereas failing to meet these recommendations can be detrimental to health (Feng et al., 2021; Zhang et al., 2023). A plethora of health interventions (e.g., traditional or e-Health

interventions) have attempted to increase children's moderate-to-vigorous physical activity (MVPA) and dietary behaviors (i.e., healthy eating), and to curb sedentary behaviors, but most of these efforts have resulted in limited efficacy or effectiveness at changing health behaviors and improving health outcomes (Champion et al., 2019; Lobczowska et al., 2022). Even effective, few interventions have demonstrated sustained effectiveness upon the intervention stoppage (Champion et al., 2019).

Humans are *habitual creatures* and changing our habit-based behaviors has proven a challenging task, which requires health coaching and environmental/situational manipulations (Gardner et al., 2023). However, if we were unable to change our health-damaging behaviors and substitute them with health-promoting behaviors, we would not able to live healthy and achieve optimal wellness (Mettler et al., 2014). In this regard, it is critically important that we empower our wellness through effective interventions. This is a significant topic of interest to health psychology and public health. Notably, health psychology has greatly informed our understanding about the psychological antecedents and consequences of health, which directly contributes to our knowledge and practice related to health promotion. Furthermore, integrating effective health psychology strategies into comprehensive, ecological interventions would collectively advance public health.

2. Managing behaviors to live healthy

One of the most effective approaches to enabling the initiation, adherence, and maintenance of health-promoting behaviors (e.g., physical activity) is through *goal setting*, *behavior monitoring*, and *goal evaluation* as informed by the self-regulation theory (Epton et al., 2017; Howlett et al., 2019; McLoughlin et al., 2019; Zimmermann, 2002). For positive behavior change, an individual should be encouraged to (1) set *specific, measurable, attainable/achievable, realistic, and timely/time-bound* (SMART) goals (Doran, 1981; Swann et al., 2023) related to their desirable behavior(s), (2) monitor the behavior(s), and (3) evaluate their own progress and accomplishment. The iterative cycle of behavior management urges an individual to be intentional before taking actions, aware of their future, current, and future behaviors in relation to the set goal and outcome, and evaluative of goal attainment for improved accountability.

The iterative cycle of behavior management is not necessarily sequential or one-way directional. Instead, they are intertwined with each other. For example, a set goal could be modified based on cumulative behavior progress and self-evaluation, and the results from self-evaluation (formative or summative) may inform and guide current and future behavior efforts. Very importantly, these behavior management skills are not innate. Most people require focused training and purposeful education to set SMART goals and monitor and evaluate progress. To become a SMART goal-setter, an individual must accrue ample (successful) experiences, so they would improve self-efficacy, grow these skills, and gradually formulate the habit. Moreover, receiving accurate, timely, and encouraging feedback, desirably from an authority figure, could improve these management skills and facilitate desirable behavior change.

Behavior management is a frequently used behavior change strategy in the clinical setting where a trained professional (e.g., health coach/counselor) works with individual clients to engage in SMART goal setting, monitoring, and evaluation. However, in large-group and public health settings, one-on-one interaction would be too costly. Fortunately, we live in a technologically advanced era where labor-intensive work can be replaced or assisted by technology. Specifically, 2023 has been a monumental year for the tech world as major technology companies (e.g., OpenAI, MicroSoft, Google, Meta, Baidu, etc.) have flocked onto the race of unveiling their products in artificial intelligence (AI). Products such as ChatGPT and Gemini have been instantly applied into various fields, changing the way people think and live at unprecedented paces. These technologies evolve rapidly and are becoming more useful and cost-effective (or free of charge). Of their many applications, AI technologies can be applied to teach untrained individuals to grow their behavior management skills, facilitate health-promoting behaviors, and improve individual and public health. I provide an example below by sharing some aspects of an ongoing project in my lab – The LSU Pedagogical Kinesiology (PK) Lab.

3. The project *ProudMe*

Funded by the Louisiana Board of Regents and the United States National Institutes of Health, the LSU PK Lab is currently testing an ecological, multi-component adolescent obesity prevention intervention project called *Preventing Obesity Using Digital-assisted Movement and Eating* (*ProudMe*). The design of entire *ProudMe* intervention has been guided by the social ecological framework (Alvidrez et al., 2019; Bronfenbrenner, 1979). The goal of the intervention is to offer adolescents the opportunity to make connections between their real-world experiences and virtual experiences. In the real world, they receive *ProudMe* education and experience positive socialization (with parents, teachers, peers or friends). In the virtual world, each person selects a virtual pet, as the virtual representation of the self; sets SMART goals, monitor goal progress, and evaluate goal attainment; and engages in positive socialization (with parents, teachers, peers/friends, and the AI-assisted virtual coach). *ProudMe* further delivers packaged intervention (1) in school cafeterias to improve school-based food environment and policy, and (2) by providing school professionals with organized training (3-hours) followed by motivational interviewing (MI) (Borelli et al., 2015) empowered coaching (monthly). The training and coaching are intended to ensure staff readiness and sustain their motivation throughout the 12-week intervention implementation. We will conduct mixed methods assessments before, during, and after the intervention across levels (e.g., individual, school, setting, policy). The ultimate aim of *ProudMe*

intervention is to reduce adolescents' obesity risk by increasing their MVPA, reducing screen-based sedentary behavior, and improving healthy eating and sleep.

Constrained by limited resources and experiences, developing the virtual reality platform for Project *ProudMe* has been a time-consuming process. To fulfil the project aim, our team has prioritized our effort to build an AI-assisted behavior management platform on the *ProudMe* website (ProudMe, n.d.). The PK Lab has enlisted experts and student researchers from disciplines ranging from kinesiology and behavioral sciences to computer science and graphic design. During the past 12 months, we successfully built a functioning website from scratch and then created an online portal where adolescents could engage in human/computer interaction to manage four health-related behaviors: physical activity (≥60 minutes per day), screen time (≤2 hours per day), fruits/vegetables consumption (≥5 serving of fruits and/or vegetables), and sleep (≥9 hours uninterrupted sleep). Each student first registers a password-protected account. They regularly (e.g., at least on PE days) set SMART goals for each of the four behaviors, monitor and input their behaviors, type their reflective thoughts, and then receive AI-assisted feedback from the ChatGPT. Human/Computer interaction data are automatically saved in the backend database, which records their levels of tech usage and engagement. The *ProudMe* intervention is expected to launch in spring 2024, when we will gather rich data to determine its intervention effectiveness and implementation. A long-term goal for the tech aspect of the project is to build a needs-supportive virtual reality community (guided by the self-determination theory [Deci and Ryan, 1985]) where virtual pets seek and offer functional social support (e.g., emotional, instrumental, tangible, companionship, validation social support) (Duncan et al., 2005) from other virtual pets and their virtual coach. We will build a smartphone application to allow for more convenient human/computer interaction. Similar functional social support will be encouraged in the real world socialization as in the virtual community socialization.

4. Conclusion

Optimal wellness cannot be achieved without chronically and habitually engaging in health-promoting behaviors such as exercising regularly (plus reduced and interrupted sitting), healthy eating, and positive sleep hygiene. Health psychology strategies such as SMART goal setting, monitoring, and evaluation; offering and seeking functional social support; and applying motivational interviewing can facilitate these health-related behaviors and advance individual health. Employing cutting-edge technology (e.g., AI technologies) to distribute these strategies can be a determinant to the cost-effectiveness of these strategies. In our Project *ProudMe*, we have discovered that the carefully prompted ChatGPT is well-positioned to function as trained health coaches, who can accurately (e.g., give correct feedback) and "enthusiastically" (e.g., cheerful tones) interact with an unlimited number of clients simultaneously free of charge. Nonetheless, innovations like this would require collaborative efforts across disciplines and fields. Finally, as cost-effective as these health psychology principles and strategies infused by modern technology are, it is worth noting that significant public health impact would require tailored interventional manipulations to both individual and environmental factors.

Acknowledgment

The author acknowledges the Eunice Kennedy Shriver National Institute of Child Health and Human Development of the United States National Institutes of Health (1R15HD108765-01A1) and the Louisiana Board of Regents Research Competitiveness Program (Fy 2021-2022 Cycle; Proposal ID#: 008A-22) as the funding sponsors of the *ProudMe* intervention project.

Conflict of interest

The author declared no conflict of interest.

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