ELSEVIER

Social Science & Medicine 60 (2005) 859–875

SOCIAL SCIENCE & MEDICINE

Habitual self-control and the management of health behavior among heart patients

Kerstin E.E. Schroder[a,*], Ralf Schwarzer[b]

[a]*Department of Psychology, Utah State University, 2810 Old Main Hill, Logan, Utah 84322 2810, USA*
[b]*Freie Universität Berlin, Germany*

Available online 5 August 2004

Abstract

This study examined the predictive power of habitual self-control on health behaviors among 381 heart surgery patients in Germany. Habitual self-control and other trait predictors (dispositional optimism, generalized self-efficacy beliefs, health locus of control beliefs) were assessed before and six months after surgery. Social-cognitive predictors of health behavior (behavior-specific self-efficacy and outcome beliefs, intentions) were assessed only before surgery. Outcomes were dieting, physical exercise, and smoker status before and after surgery. Compared to other trait variables, habitual self-control emerged as a superior predictor of the behavioral outcomes. Further, habitual self-control explained unique variance in dieting and physical exercise beyond proximal behavior-specific predictors (i.e., self-efficacy beliefs, intentions) that are supposed to display direct effects on behavior. Results of hierarchical linear regressions provided partial support for the assumption that habitual self-control strengthens the intention–behavior congruence. In prospective analyses predicting dieting at the 6-month follow-up an interaction between habitual self-control and dieting intentions emerged indicating that self-control supported dieting among patients with imperfect (moderate) dieting intentions only. In sum, the results suggest that habitual self-control may be a useful construct in research on health behavior management, in particular when long-term maintenance of health behavior is the target.

Keywords: Habitual self-control; Health behavior; Coronary heart disease; Self-regulation; Dieting; Exercise; Germany

Introduction

Coronary heart disease is the primary cause of death in developed countries (AHA, 2002; Sans, Kesteloot, & Kromhout, 1997). According to statistics of the American Heart Association, more than 60 million Americans suffer from one or more forms of cardiovascular disease (CVD), which is responsible for approximately 40% of all deaths. In 1999, CVD claimed nearly 1 million lives in the United States. Similar alarming numbers are reported from Europe (Sans et al., 1997). In 2001, 1.1 million Americans experienced a new or recurrent myocardial infarct, and about 40% of them were likely to die as a consequence of a coronary attack.

Prevalence and impact rates of well-known, controllable risk factors such as smoking, obesity, hypercholesterolemia, and a sedentary lifestyle identify the control of health behavior as the prime target of prevention and intervention programs aiming at a reduction of CVD. About 24% of the US Americans are smokers and have a two to fourfold risk of heart attack and sudden death. Studies indicate that between 28% and 50% of the US population aged 18 and older lead a sedentary lifestyle, doubling the risk of coronary

*Corresponding author.
E-mail address: kerstin.schroder@usu.edu (K.E.E. Schroder).

0277-9536/$ - see front matter
doi:10.1016/j.socscimed.2004.06.028

heart disease (CHD) compared to physically active adults. Estimates from the AHA indicate that about 40 million American adults have an increased blood cholesterol level of 240 mg/dL or higher (AHA, 2002), and about one third of the US population is obese (AHA, 1997); both of these factors increase the risk of high blood pressure and CHD but are controllable by a healthy diet (AHA, 1998). Further, there is evidence that multiple risk factors not only accumulate, but also interact in increasing the risk of CHD (AHA, 2002). In sum, the evidence suggests that the control of smoking, dieting, and physical exercise would lead to a marked reduction in CVD development, cardiac events, and sudden cardiac death, and thus to a considerable prolongation of life (AHA, 1999).

In consequence of cardiovascular diseases, between 500,000 and 600,000 coronary artery bypass surgeries are performed each year in the United States. Patients suffering from severe CHD most likely have a history of unhealthy habits. However, the long-term success of open-heart surgery, the recurrence of vessel occlusion, the likelihood of recurring infarcts, and overall post-surgical gains in cardiac functioning may depend on patients' ability to adopt a healthy lifestyle. As a preventative measure, similar lifestyle changes are requested from patients with severe heart diseases other than CHD, such as heart valve malfunction, because of their increased risk and reduced tolerance for additional constraints on cardiac functioning.

Despite the increased vulnerability of cardiac surgery patients to the harmful effects of health risk behaviors, little research has focused on the predictive and explanatory power of theoretical models of health behavior within this particular risk population. The fact that many cardiac patients—who are usually well informed about the effects of lifestyle on cardiac health—proceed with an unhealthy lifestyle until they have clear evidence that their lives are at risk indicates that many of them experience difficulty in the voluntary control of unhealthy consummatory and sedentary behaviors.

The current study aimed at an investigation of *habitual self-control* in the prediction of health behaviors among cardiac surgery patients. Habitual self-control is defined as a latent trait that is activated when an intention has been formed whose enactment is effortful and involves non-hedonistic behavior. Theoretically, self-control is assumed to support the enactment of an intention, thus enhancing the intention–behavior consistency. The goals of this study were fourfold. First, the predictive power of habitual self-control on health behavior management was tested and compared to similar trait predictors. Second, the contribution of habitual self-control to the prediction of health behavior was tested in the context of proximal behavior-specific predictors as specified by theoretical models of health behavior (e.g., dieting self-efficacy beliefs, dieting intentions). Third, interactions between behavioral intentions and habitual self-control were examined in order to test the hypothesis that habitual self-control strengthens the intention–behavior congruence. Fourth, differential effects of habitual self-control in diverse patient populations were tested.

Intention-based models of health behavior and the control of action

Most models of health behavior focus on the processes in the pre-intentional stage of the action process, in which motivation is aroused and/or an intention is formed. Well-known examples are the health belief model (Becker, 1974; Rosenstock, 1966), the protection motivation theory (Rogers, 1983), the theory of reasoned action (Ajzen & Fishbein, 1980) and the theory of planned behavior (Ajzen, 1991). These models explain behavior as a consequence of cognitive-motivational processes such as perceived threat, cost-benefit analyses, and the formation of a behavioral intention. According to a meta-analysis (Godin & Kok, 1996) that integrated 56 studies on the theory of planned behavior, intentions and perceived control explain, on average, about 34% of the variance in health behaviors. This finding indicates that there is ample room for additional predictors to account for differences in health behavior management (Bagozzi, 1992; Conner & Armitage, 1998; Perugini & Bagozzi, 2001).

One shortcoming of intention-based models of health behavior is that they do not account for discrepancies between intentions and behaviors. Intentions are not always performed, specifically if they involve non-hedonistic behaviors. Theories of action control suggest a distinction between *motivational processes of intention formation* and *volitional processes of action initiation and maintenance* (Bagozzi, 1992; Gollwitzer, 1993; Heckhausen, 1991; Kuhl, 1985). The intention–behavior congruence can be weakened by unforeseen obstacles or costs, emotional resistance, temptation, time delays between decision-making and action initiation, and insufficient elaboration of goal-oriented action plans. Action control processes such as planning, self-control of action, and resistance to temptation can explain why some people are able to realize their goals while others fail. Several recent reviews of health behavior models converge in their conclusion that motivational models need to integrate a volitional stage in order to better explain individual differences in health behavior and health behavior change (Armitage & Conner, 2000; Bagozzi & Edwards, 2000; Conner & Armitage, 1998; Gollwitzer & Brandstaetter, 1997; Sheeran & Abraham, 1996; Sutton, 1998).

In response to these considerations, Schwarzer (1992) developed the health action process approach, which