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Social cognitive aspects of the participation in workplace health promotion as revealed by the theory of planned behavior

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ABSTRACT

Health-promoting efforts strongly depend on individual cognitions such as attitudes as well as social cognitive aspects of the work environment such as leadership and support. Using the theory of planned behavior (TPB) as a theoretical frame, participation behavior of employees in courses offered by the workplace health promotion (WHP) program of the German Armed Forces was investigated. Social cognitive aspects of the work environment, such as leadership behaviors by setting an example or optimizing organization of work, were included in the TPB components of subjective norm and perceived behavioral control, which allowed for an investigation of the specific effects of leadership on WHP participation. A survey study with $N = 1385$ members of the German Armed Forces was conducted in 2015 in Germany. Results showed that perceived behavioral control and attitudes towards WHP were the strongest predictors for WHP participation. While subjective norm was positively related to attitudes, it had a slightly negative effect on intention to participate in WHP activities. These findings suggest that the most effective way for leadership to increase WHP participation is to enhance perceived behavioral control. Quite contrary, creating a positive subjective norm regarding WHP participation may even result in psychological reactance.

1. Introduction

The workplace is not only able to affect the well-being of employees, but it also offers an ideal setting to support the promotion of health (Chu et al., 2000). According to the WHO (2016), "health promotion is the process of enabling people to increase control over, and to improve their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions." This definition stresses that besides individual responsibility, the workplace is responsible for the health of employees (Noblet and LaMontagne, 2006). Organizations likewise have an interest in health promotion to maintain a healthy and motivated workforce. For instance, health promotion programs in the military are not only essential for the health care management, but also for combat readiness (Whiteman et al., 2001).

Although there is sufficient research on the effectiveness of workplace health promotion (WHP) programs (Rongen et al., 2013; Hutchinson and Wilson, 2011; Cancelliere et al., 2011; Conn et al., 2009), research on the social cognitions that determine participation in courses offered by WHP programs is still sparse – especially for particular study populations such as military personnel. For this reason, we investigated cognitions and participation behavior of employees in courses offered by the WHP program of the German Armed Forces.

1.1. Cognitive determinants of health behavior

Social cognition models predict that health related behavior is based on a set of individual health cognitions. One prominent model is the theory of planned behavior (TPB; Ajzen, 1991; Fishbein and Ajzen, 2010) that has been widely used to understand health behaviors (Conner and Sparks, 2005). In detail, the TPB (Fig. 1) proposes that behavior, for instance the participation in a WHP program, is primarily influenced by behavioral intention. Behavioral intention represents the motivation to direct one's effort towards the target behavior. Behavioral intention itself is determined by three social-cognitive variables: attitude, subjective norm and perceived behavioral control (Ajzen, 1991; Fishbein and Ajzen, 2010). Attitudes arise of employees' beliefs about the expected consequences (positive or negative) their behavior might elicit and can be viewed as an overall evaluation of the behavior as negative or positive. As such, attitudes reside within the individual and have been primarily in the focus of individually-oriented WHP

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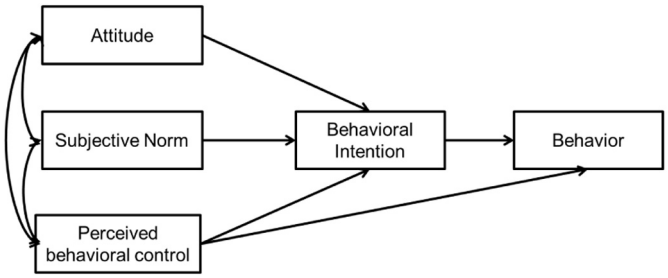

Fig. 1. Theory of planned behavior (Ajzen, 1991; Fishbein and Ajzen, 2010).

programs (Noblet and Rodwell, 2010). Subjective norms are the "perceived social pressure to engage or not engage in the behavior" (Fishbein and Ajzen, 2010, p. 20). For instance, they can stem from beliefs whether leaders value and promote health-related activities of their employees (Franke et al., 2014), for instance by setting an example or by encouraging health-related activities. Perceived behavioral control is based on beliefs about the subjective probability that a person is able to execute a specific behavior and considers internal (e.g., skills) and external factors (e.g., social support or work schedule) that foster or hamper the performance of a specific behavior. As such, perceived behavioral control is conceptually related to the concept of self-efficacy (Bandura, 1977) and expectancy of success (Weiner, 1985). The TPB proposes that parallel to its indirect effect via intention, perceived behavioral control influences behavior directly. The direct effect is especially important in situations in which the execution of the behavior is not fully in control of the person (e.g., if resources or opportunities are required). Hence, perceived behavioral control is likely to be a result of the interplay of individual characteristics and organizational characteristics, the latter being a result of leadership activities.

Several meta-analyses provide strong support of the hypothesized effects of the TPB in health-related contexts (e.g., Armitage and Conner, 2001; Hagger et al., 2002; Godin and Kok, 1996). In their meta-analytic review of 185 independent studies, Armitage and Conner (2001) found that 27% of the variance in behavior and 39% of the variance in intention can be explained with TPB. Especially perceived behavioral control was found to have significant explanatory power of behavioral intention and behavior (Armitage and Conner, 2001) while subjective norm has the lowest explanatory power (Armitage and Conner, 2001; Hagger et al., 2002).

1.2. Rationale

While the TPB has been demonstrated to be an effective means of explaining health-related behavior in general, the specific influence of the model components on intention and behavior varies between different fields of application. Because TPB data has not been reported on WHP participation so far, the aim of the present study was to investigate the role of cognitive antecedents for employees' participation in courses offered by the WHP program in the German Armed Forces.

Moreover, as research shows that health-promoting efforts strongly depend on the support of leadership or management (Sparling, 2010; Whiteman et al., 2001), individual cognitions of social norms and organizational conditions that are directly influenced by leadership were included into the TPB model. Although the consideration of these cognitions is necessary to understand WHP participation (Franke et al., 2014), the majority of theories (e.g. Bass, 1990; Franke and Felfe, 2011a; Franke and Felfe, 2011b) and studies on the influence of leadership on employees' health only focused on the behavior of leaders (Barling et al., 2010), while employees' cognitions about leadership have not been considered so far. By including these cognitions into our TPB approach, we address this gap in the empirical literature on WHP participation.

Based on the TPB and the reported meta-analytic findings, we hypothesized that attitudes as individual factor and perceived behavioral control as a factor that results from the interaction of employee and worksite should be especially associated with behavioral intention. Moreover, we expected a lower association of subjective norm with behavioral intention. Behavior, that is, participation in WHP courses, was expected to be associated with behavioral intention and perceived behavioral control.

2. Method

2.1. Participants

1385 members of the German Armed Forces (348 females, 947 males, 90 no response) participated in the study. The response rate was 14.9%. Thirty percent of the participants' were 29 years or younger (N = 421), 302 participants (22%) were between 30 and 39 years old, 298 participants (22%) were between 40 and 49 years old, and 290 participants (21%) reported to be 50 or older. The average duration of service was 16.0 years (SD = 11.8). Two thirds of the participants reported to be military personnel (N = 854) and one third of the participants reported to be civil personnel (N = 457).

2.2. Procedure and measures

The data collection was part of a larger longitudinal research project during the pilot implementation of the WHP program of the German Armed Forces (Sammito et al., 2015). A standardized set of WHP courses was offered in all participating agencies, which were targeted at physical activities, stress prevention, healthy nutrition, reduction of the risk of addiction, and enhancement of sleep quality. Participation in WHP courses was voluntary. Military as well as civilian members were allowed to take part in WHP courses of their choice for 2 h per week during working hours. With durations of course units between 30 and 90 min, an average of two WHP participations per week would have been possible. Over the course of the four-month study period, this would give > 30 opportunities for participation.

The major predictors for health-related behavior as specified in the TPB were assessed with direct measures on rating scales from 1 = *do not agree* to 5 = *fully agree*. Formulation of items was based on the guidelines given by Fishbein & Ajzen (2010, p. 449 ff.). Regarding the subjective norm in the work context, relevant others for injunctive normative beliefs were defined as superiors, relevant others for descriptive normative beliefs were defined as colleagues. Internal consistency of the scales was determined in the reported study sample. Table 1 gives an overview over items and scales for measurement of TPB components as well as their internal consistencies. The sum of the self-reported numbers of participations in all WHP courses served as an indicator for participants' health-related behavior.

Data collection was mainly carried out as online survey, participants not working with network computers on a regular basis (e.g. combat units, kitchen personnel) received hardcopies of the survey.

2.3. Data analysis

Outliers, or violations of the assumptions underlying regression analysis might influence the estimates of regression analysis (Cohen et al., 2003). We computed Cook's D (Cook, 1977) as indicator of a global influence of a specific data point on the results of the analyses and differences in betas ($DFBETAS_{ij}$, Cohen et al., 2003) as local measure of influence. Moreover, the centered leverage value was computed as indicator of extreme values on the independent variables (Cohen et al., 2003). In our data set, no case exceeded the critical values for Cook's D and $DFBETAS_{ij}$, but one case showed very high leverage values on all independent variables and was not further included in the analyses. We also investigated whether the assumptions of linearity, normally distributed residuals, and homoscedasticity were met in the data