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Elicitation studies and the theory of planned behavior: a systematic review of exercise beliefs

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Abstract

Background: Elicitation studies are recommended when using the theory of planned behavior (TPB) to establish the cognitive foundation of a population's salient exercise beliefs. The TPB is frequently used to explain exercise intention and behavior, and its predictive utility is well-established. Limited research, however, has examined people's salient behavioral, normative, and control beliefs for exercise—and the relative contribution of these beliefs for explaining attitude, subjective norm, and perceived behavioral control. Thus, to extend the explanatory utility of the TPB, a review of exercise elicitation studies is warranted.

Purpose: To review TPB and exercise studies that conducted an elicitation study.

Methods: A comprehensive literature search yielded 47 TPB studies that had conducted an elicitation study, spanning 22 yr (range: 1975–2002; 59.6% from the 1990s).

Results and conclusions: We found that: (a) the most salient behavioral, normative, and control beliefs were that exercise improves physical/psychological health, family members have the strongest normative influence on exercise, and physical limitations obstruct exercise, respectively; (b) the effect size for behavioral beliefs-attitude, normative beliefs-subjective norm, and control beliefs-perceived behavioral control were large; (c) the beliefs explained between 34% and 56% of the variance in attitude, subjective norm, and perceived behavioral control; and (d) insufficient information was reported for the elicitation studies' methods. The study findings illustrate the importance of conducting elicitation studies as a mechanism for understanding exercise behavior. Future researchers are encouraged to conduct elicitation studies, and to report more detailed information regarding their methods to aid in replication and interpretation.

Keywords: Attitude; Subjective norm; Perceived behavioral control

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An important element for promoting health-related physical activity is applying theoretical models that can explain the multidimensional (e.g., social, cognitive, behavioral) determinants of exercise participation (Biddle & Nigg, 2000; Rimal, 2001). Despite the number of psychological theories available, no consensus exists regarding which is the best model for studying exercise behavior (Maddux & DuCharme, 1997). However, one conceptual framework that has been successfully applied to exercise behavior is the *theory of planned behavior* (TPB; Ajzen, 1988, 1991). The TPB is a belief-based social cognitive theory that was developed as a revision to the theory of reasoned action (Fishbein & Ajzen, 1975). The TPB posits that people's expectations and values about engaging in a behavior form their behavioral, normative, and control beliefs. These beliefs in turn, influence people's attitude, subjective norm, and perceived behavioral control toward their intention, and ultimately, their behavior.

Behavioral beliefs are posited to be the driving force behind people's *attitude.* They are determined by the perceived consequences of engaging in a behavior, and people's evaluation of these consequences (Ajzen & Fishbein, 1980). For example, people may believe that exercising will improve their health; however, they may also feel that it is time consuming and painful. For healthy populations, the most commonly reported behavioral beliefs are that exercise improves health, is fun, time consuming, and tiring (Carron, Hausenblas, & Estabrooks, 2003). *Normative beliefs* provide the framework for *subjective norm*, and they are formulated by whether significant others think a person should or should not engage in a behavior, and by a person's motivation to comply with the wishes of these important others (Ajzen, 1985). People are influenced by significant others to the extent that their opinions are valued. For example, if a woman believes that her spouse wants her to exercise, and she values his opinion, her subjective norm for exercise will be higher. The most frequently reported normative influences for exercise in healthy populations are family members, friends, and coworkers (Pender & Pender, 1986).

Control beliefs provide the structure for *perceived behavioral control.* They are developed from people's evaluation of whether behavior adoption will be difficult or easy and from their perceived power over resources, skills, and opportunities for the behavior (Ajzen, 1991). The fewer resources and opportunities that people believe they have (e.g., 'I have no free time tonight to go to the gym') and the more obstacles they anticipate (e.g., 'The babysitter can't watch the kids any night this week') the lower their perception of control is for adopting the behavior. The most common control beliefs for obstructing exercise in healthy populations are lacking time, energy, and motivation (Norman & Smith, 1005; Terry & O'Leary, 1995).

Prior to the development of the TPB, Ajzen and Fishbein (1980) stated that the theory of reasoned action's predictive utility can be determined only when researchers measure if: (a) behavioral beliefs predict attitude; (b) normative beliefs predict subjective norm; (c) attitude and subjective norm predict intention; and (d) intention predicts behavior. Ajzen and Fishbein, however, also stated that 'from a practical point of view, it is not always necessary to measure all of these variables to answer certain questions' (p. 98). That is, if the goal is to predict behavior, then the direct measure of intention may be sufficient. Likewise, if the objective is to predict intention, then the measures of attitude and subjective norm are deemed appropriate. If the aim, however, is to *understand* intention and behavior, it is also necessary to examine the behavioral and normative beliefs and their association with the direct theory measures.

These same principles can be applied to the TPB. That is, the utility of the TPB for fostering behavior change can be determined when the associations are measured among its constructs.