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Short communication

Determinants of physical activity promotion by smoking cessation advisors

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ABSTRACT

Objective: To investigate the cross-sectional association between personal physical activity (PA) level, Theory of Planned Behavior (TPB) constructs toward PA promotion, and PA promotion behavior among smoking cessation advisors.
Method: 149 smoking cessation advisors were invited to complete online questionnaires. Hypotheses were tested using Bayesian path analysis.
Results: Attitudes and perceived behavioral control (PBC) of smoking cessation advisors were related to PA promotion intentions; intentions were in turn related to PA promotion behaviors. Advisors' personal PA level was indirectly associated with PA promotion behaviors through PBC and PA promotion intentions.
Conclusion: The TPB is a relevant theoretical framework with which to explore determinants of PA promotion behavior among smoking cessation advisors. The PA level of health care professionals may be linked to PA promotion behavior through some TPB constructs.
Practice implications: Smoking cessation advisor training should include education on attitude development (e.g., PA benefits on smoking cessation), PBC (e.g., modality of PA prescription) and PA promotion intentions (e.g., goal setting). Smoking cessation advisors should also be encouraged to regularly practice PA in order to improve their PA promotion behaviors.

1. Introduction

While physical activity (PA) is considered effective in reducing tobacco withdrawal and cravings [1,2], evidence is lacking on the relationship between PA promotion and smoking cessation in a clinical setting. To date, only one study has investigated the extent to which smoking cessation advisors promote PA, finding that 56% of advisors engage in PA promotion (29-min mean duration across a 6–7-week intervention period) [3]. Understanding determinants of PA-related counseling behaviors by these advisors could be crucial in optimizing smoker-related care [4]. Indeed, primary care providers mostly referred their smoker patients to smoking cessation advisors [5,6].

The Theory of Planned Behavior (TPB) provides a solid framework with which to understand health care professional behaviors [7]. In a systematic review, Godin et al. [8] confirmed TPB to be useful in understanding health care practitioners' promotion of health behaviors in domains such as pain management, hand hygiene and prescription examinations. While, to date, only two studies have explored the topic, both report the usefulness of TPB in exploring determinants of health care practitioners' PA promotion behaviors [9,10].

Previous investigations also indicate that a health care practitioner's current PA level is a major determinant of PA promotion in a clinical context, with a higher personal PA level associated with more PA promoting practices [11]. However, no research has thoroughly explored the processes by which a health care practitioner's PA level and their PA promotion behaviors can be linked. An interesting perspective to consider is a "spill-over" mechanism between these two behaviors [12]; that is, the PA level of the health care practitioner influencing their PA promoting behavior via TPB variables related to PA promotion.

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This international study investigated the cross-sectional association between smoking cessation advisors' personal PA levels, TPB constructs toward PA promotion, and PA promotion behaviors. As proposed by Ajzen [13], TPB variables were hypothesized to be associated with the frequency and duration of PA promotion by advisors. As individuals may transfer their perceptions and experiences from one behavior to another (if areas share enough similarities) [12], it was also hypothesized that advisor PA levels would be related to PA promotion behaviors (at least partially) via TPB variables related to PA promotion.

2. Methods

2.1. Participants and procedure

This study received local ethical approval. Participant inclusion criteria included: smoking cessation advisor training/degree, regular involvement in smoking cessation activities within the 12 months prior to study initiation, native French speaking. Data were collected using an online questionnaire [14] hosted by the Epsylon laboratory at Paul-Valéry University (France). The study was advertised by eight smoking prevention associations in France and Belgium. The organizations included the online survey link in their newsletter. Directors of tobacco cessation degree trainings were invited to promote the study to their former graduate student.

2.2. Measures

Participants provided their age, body mass index, smoking status, years of experience in smoking cessation, job title and country of practice. PA levels were measured using the Godin questionnaire [15]. Current PA promotion behavior was assessed using a two-item questionnaire measuring frequency and duration of PA promotion on the overall intervention. Based on similar studies [9,10,16–18], a 17-item questionnaire was developed to measure TPB constructs using a seven-point Likert scale (attitudes: 7-item; subjective norms: 6-item; PBC: 2-item; intentions: 2-item; details in Supplementary file).

2.3. Data treatment and analysis

Descriptive statistics and internal reliability were calculated using SPSS, version 21. Path analysis with a Bayesian estimator was then applied in AMOS 21 to examine the hypothesized model [19]. Model fit was evaluated using posterior predictive p-value which reflects the probability that the replicated data may be more extreme than the observed data. In line with recommendations [20], a predictive p-value number closer to .50 reflects good fitting models where the real data are as probable as generated data [20]. In the Bayesian approach, a 95% credibility interval (95% CI) is generated for each estimated parameter and the median is used as the point estimate. If the 95% CI for that estimate did not encompass 0, a true relation between the variables would likely exist.

3. Results

3.1. Overview

Data from 149 smoking cessation advisors were available (Table 1). The average time spent promoting PA as reported by advisors for the overall intervention was 15.56 min (SD: 15.18, range: 1–60 min, Median: 10 min). For statistics regarding frequency of PA promotion, see Table 1. Neither the duration nor the frequency of PA promotion reported by advisors was affected by participant characteristics presented in Table 1.

Table 1
Sample characteristics (n = 149).

	Percentage (n)
Age (years)	
20–25	1% (1)
26–35	21% (31)
36– 45	18% (27)
46– 55	31% (47)
<55	29% (43)
Body mass index	
Underweight	2% (4)
Normal weight	68% (101)
Overweight	25% (37)
Obesity	5% (7)
Smoking history	
Never smoked	74% (111)
Smoker	1% (1)
Former smoker	25% (37)
Experience in smoking cessation (years)	
< 1 ≤	7% (11)
> 1–3 ≤	16% (24)
> 3–5 ≤	14% (20)
> 5	63% (94)
Job title	
Smoking advisors	20% (30)
Medical doctor	34% (51)
Nurse	17% (25)
Other	29% (43)
Country	
France	50% (75)
Belgium	47% (70)
Other	3% (4)
Frequency of PA promotion	
Never	0% (0)
Rarely	5% (8)
Sometimes	8% (12)
Often	34% (52)
Always	53% (80)
Knowledge about WHO's PA recommendations	
Yes	60% (89)
No	40% (60)

3.2. Main analyses

Descriptive statistics and correlation coefficients between variables are presented in Table 2. The predictive p-value of the model tested was acceptable (predictive p-value = .44) [20,18]. The model explained 74% of the variance of intention, 36% of the variance of frequency of PA promotion, and 4% of the variance of duration of PA promotion. As depicted in Fig. 1, attitudes and PBC were significantly related to intention. In turn, intentions were significantly related to frequency of PA promotion and duration of PA promotion. Significant indirect associations were found from attitudes (β = .09, 95% CI [.03, .17]) and PBC (β = .37, 95% CI [.20, .55]) to frequency of PA promotion via intentions. Similarly, significant indirect associations were found from attitudes (β = .06, 95% CI [.01, .14]) and PBC (β = .23, 95% CI [.02, .45]) to duration of PA promotion via intentions.

When considering the relationship between PA level and the TPB model toward PA promotion, PA practice was significantly related to both subjective norms and PBC (Fig. 1). A significant indirect association was found from PA level to intentions (β = .16, 95% CI [.02, .29]) via PBC. Moreover, significant indirect associations were found from PA level to frequency of PA promotion (β = .11, 95% CI [.01, .21]) and duration of PA promotion (β = .04, 95% CI [.01, .09]) via PBC and intentions.