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Short communication

Social and cognitive factors contributing to the intention to undergo a smoking cessation treatment

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Abstract

Elaborating on a recently developed perspective, it is predicted that interest in the use of smoking cessation treatments (SCTs) is typical of ‘dissonant smokers,’ that is, smokers who dearly want to quit but feel unable to do so. Further, it is assumed that the interest in the use of SCTs is more prevalent among subjects who believe in the efficacy of these treatments. Finally, it is assumed that past behavior has an important influence on the interest in the use of SCTs. The theory was tested using analysis of linear–structural relations (LISREL) on a Dutch national probability sample of 763 adults, all smoking cigarettes and/or cigars. Results show that interest in the use of SCTs was positively influenced by being old, information seeking about smoking cessation in the past, nicotine dependency, having undergone a SCT in the past, experiencing social stimulation for abstinence, seeing many advantages and or many disadvantages with regards to abstinence, and having a positive attitude towards SCTs. © 2003 Elsevier Ltd. All rights reserved.

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1. Theory

People who want to quit have a greater chance of becoming abstinent if they undergo a smoking cessation treatment (SCT), especially if they use nicotine replacement therapy (NRT) (Ashenden, Silagy, Lodge, & Fowler, 1997; Silagy, Mant, Fowler, & Lodge, 1994).

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However, very often, people quit without using any treatment at all. According to Kunze (2000), the willingness to use NRT depends on the cognitive dissonance a subject experiences. In his view, dissonant smokers (i.e., smokers who dearly want to quit but feel unable to do so) are the most likely users of NRT. Of course, this reasoning can be applied for explaining the use of any other SCT as well. Other theories that are relevant for the explanation of the use of SCTs are modern variants of rational choice theory (Ajzen, 1991). According to these theories, well-informed subjects always will intend to perform those behaviors that have the lowest perceived costs and the highest perceived rewards. Newer theories also emphasize the influence of past behavior.

Based on these abovementioned theories, three complementary research hypotheses were formulated. (a) The intention to use an SCT is influenced by cognitive dissonance among smoking subjects. (b) It is also influenced by positive ideas about the effectiveness of such treatments and (c) and by past SCT use. It is assumed that the amount of cognitive dissonance that subjects experience is indicated by gender, age, information seeking behavior, nicotine dependency, perceived pros and cons of abstinence, social stimulation for abstinence, self-efficacy for abstinence, and the readiness to quit.

Gender may be indicative for cognitive dissonance because of two factors. (a) Women experience more social pressure to quit (Royce, Corbett, Sorensen, & Ockene, 1997). (b) Women experience more problems if they do so (Wetter et al., 1999). For two reasons a smoker's *age* may also contribute to the development of dissonance. (a) Addiction appears to cumulate over time (Kviz, Clark, Crittenden, Freels, & Warnecke, 1994), and therefore it is more difficult to quit for older smokers. (b) And, older subjects are more likely to be confronted with health deterioration and accompanying medical advice to quit.

Other factors are also likely to play a role. *Nicotine dependency* may also cause cognitive dissonance. Nicotine-dependent smokers will feel less able to quit. Given the fact that, nowadays, the risks of smoking are widely known by the general public (Macaskill, Pierce, Simpson, & Lyle, 1992), nicotine dependence will produce cognitive dissonance and therefore interest in the use of SCTs. *Information seeking behavior* can be seen as indicative for cognitive dissonance because in recent theories it is assumed that people seek for information if they are looking for a solution for a subjective problem (Dervin, 1989). Information seeking also may produce more dissonance because more often, incompatible information may be met. Cognitive orientations towards abstinence will be indicative for cognitive dissonance also. If smokers are well aware of the *pros of abstinence*, if they are well aware of the cons of abstinence or if they experience *social stimulation to quit*, they will feel dissonance. This dissonance may also become manifest in the *experienced readiness for smoking cessation* because subjects who intend to quit 'someday' will only have a vague picture of what smoking cessation means, whereas subjects who want to quit within a short period will have a more vivid picture of this process with its problems and will probably experience more dissonance. In combination with the anticipation of *cons of smoking* (e.g., fear of withdrawal symptoms) and little *self-efficacy*, this may produce cognitive dissonance. This in turn may stimulate the intended use of SCTs.

Besides foregoing variables, we included socioeconomic status as a possible relevant (confounding) variable, although we had no unambiguous hypothesis regarding its influence.

2. Methods

2.1. Sampling

Data were collected by means of a telephone survey that was carried out during September and October 1999. Random digit dialing yielded 13,512 contacts. Of these contacts, 1970 indicated that one or more members of their household present at the time of the interview were smokers. These 1970 contacts in turn yielded 1200 smokers who completed the whole questionnaire, meaning a response rate of 60.9%. Because the amount of tobacco consumption was seen as an important factor for the explanation of the intention to undergo SCTs and no precise measurement of the consumption of pipe tobacco was available, subjects that

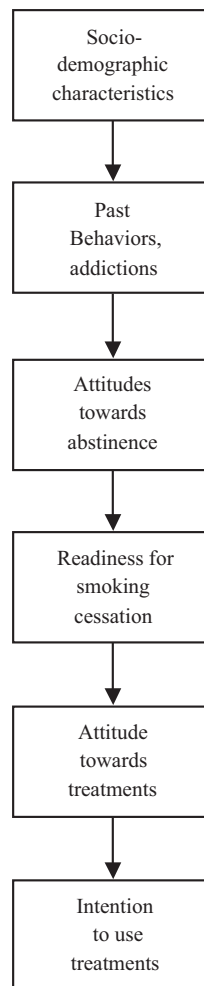


Fig. 1. Assumed causal order of concepts related to the intention to use SCTs.

indicated to smoke pipe were excluded. Because the intention to undergo SCTs is only relevant for subjects who contemplate to quit, precontemplators were also excluded. These restrictions meant that data of 763 subjects were analyzed.

2.2. Measurement

Variables that were analyzed in order to test our hypotheses were divided into six categories: sociodemographic characteristics (age, gender, and socioeconomic status); past behaviors and addictions (past treatments, information seeking, and nicotine dependency); cognitions about abstinence (experienced social stimulation for abstinence, pros of abstinence, cons of abstinence, and self-efficacy for abstinence); stage of change; attitude towards SCTs; and the intention to use an SCT. Nicotine dependence was measured using a scale based on the Fagerström Test for Nicotine Dependence (Etter, Vu Duc, & Perneger, 1999). Other concepts measured using summative scales were: pros of abstinence (four items); cons of abstinence (four items), social stimulation for abstinence (five items); self-efficacy for abstinence (six items); attitude towards SCTs (three items). SES was also measured using a scale that summed up standardized measures of education, occupational level, and income. Readiness for smoking cessation was measured using the so-called stages of change model (Dijkstra, De Vries, & Bakker, 1996). The other concepts were measured using a single item. More information about measurement (and about reliability of the constructs) can be obtained by contacting the authors of this article.

2.3. Analysis

Hypotheses were tested using analysis of linear–structural relations (LISREL). A saturated model was specified. The assumed causal order followed the categorization outlined in Section 2.2. Variables in a given category of variables are assumed to be influenced by variables belonging to preceding categories and to have an influence on variables belonging to following categories. The model is graphically represented in Fig. 1.

3. Results

Results are presented in Table 1 (zero-order correlations) and Table 2 (estimated effects). As can be seen in Table 2, no support is found for the hypothesis that gender affects the intention to use SCTs. So, our reasoning derived from dissonance theory is not supported in this case.

The significant positive total effect of age on the intention to use SCTs (Table 2) means that older smokers are more inclined to undergo an SCT. This hints at the appropriateness of using dissonance theory to relate age with intended SCT use. The data further indicate that socioeconomic status has no effect on the intention to use SCTs. The hypothesis that past SCT use has a positive effect on intended future SCT use is supported by the data. The data also provide support for the idea that dissonance theory is useful for linking the intention to

Table 1
Zero-order correlations between the intention to undergo a smoking cessation treatment and related variables

	Age	Gender	SES	Nicotine dependency	Past SCT use	Information seeking	Social stimulation	Pros of abstinence	Cons of abstinence	Self-efficacy	Readiness for cessation	Attitudes towards SCTs	Intention to use SCTs
Age	1.00												
Gender	-.05	1.00											
SES	-.07*	-.10***	1.00										
Nicotine dependency	.14****	-.11***	-.12***	1.00									
Past SCT use	.18****	.04	.05	.28****	1.00								
Info seeking	.05	.14****	-.09**	.13****	.24****	1.00							
Social stimulation	-.03	.03	.02	.05	.14****	.23****	1.00						
Pros of abstinence	-.02	.11***	.01	.07*	.16****	.17****	.20****	1.00					
Cons of abstinence	.13****	.11***	-.16****	.30****	.20****	.16****	.06	.11***	1.00				
Self-efficacy	-.04	-.12****	.18****	-.24****	-.11***	-.07**	.05	.03	-.38****	1.00			
Readiness for cessation	.03	.01	.05	.01	.12***	.13****	.26****	.22****	-.06	.13****	1.00		
Attitudes towards SCTs	-.01	-.07*	-.01	.12***	.15****	.13****	.10***	.11***	.11***	-.02	.06	1.00	
Intention to use SCTs	.09**	-.05	-.04	.26****	.32****	.22****	.21****	.18****	.23****	-.14****	.08**	.59****	1.00

N = 763.

* $P < .10$.

** $P < .05$.

*** $P < .01$.

**** $P < .001$.

Table 2

LISREL estimates of direct, indirect, and total effects of theoretical relevant variables on the intention to undergo a SCT

	Direct	Indirect	Total
Age	.04	.04*	.08**
Sex	– .04	– .01	– .05
SES	– .01	– .03	– .04
Nicotine dependency	.10***	.07***	.17****
Past SCT use	.15****	.09****	.24****
Info seeking	.06*	.09****	.14****
Social stimulation	.11****	.03	.13****
Pros of abstinence	.06**	.03	.10***
Cons of abstinence	.06**	.04*	.10***
Self-efficacy for abstinence	– .07**	.01	– .06
Readiness for cessation	.00	.01	.00
Attitudes towards SCTs	.52****		.52****
R^2			45.3%

$N = 763$.

* $P < .10$.

** $P < .05$.

*** $P < .01$.

**** $P < .001$.

use SCTs with nicotine dependency, looking for antismoking information, experiencing social stimulation for abstinence, perception of pros of abstinence, and perception of cons of abstinence According to Table 2, all total effects of these variables are positive, just as we expected. However, our hypothesis that predicted that self-efficacy for abstinence has a negative effect on the intention to undergo a treatment receives only limited support. Only the direct effect is significant. Our hypothesis regarding the effects of readiness for smoking cessation received no support at all. Finally, our hypothesis about the positive impact of favorable attitudes towards SCTs on the intention to undergo an SCT received huge support (the total being .52). This means support for the classic idea from rational choice theories that positive attitudes and beliefs concerning a behavior have a positive effect on the intentions to perform that behavior.

4. Discussion

The results indicate that the theoretical premises are generally supported. They suggest that the concept of dissonance very likely is a major explaining factor. Seven variables which supposedly contribute to a higher level of dissonance, for example, age, social stimulation for abstinence, perceived pros and cons of abstinence, nicotine dependency, and self-efficacy with regards to abstinence (negative) all are significant direct and/or indirect predictors of the intention to undergo a SCT. An eighth factor, information seeking on

smoking cessation, which can be seen as a consequence of dissonance but also as an antecedent of dissonance (information can create dissonance), has mainly an indirect effect on the intention to undergo an SCT. This means that it is not unlikely that information seeking in this case can be seen as an antecedent dissonance-arousing factor. Otherwise, the impact would have been more direct.

The results suggest that persons who experience a lot of dissonance with respect to their smoking habits are often inclined to undergo an SCT. Probably, this dissonance stems from being eager to find a solution to one's smoking problem and/or from having less confidence in one's ability to quit without treatments.

The far most important factor directly affecting the intention to undergo an SCT appears to be a positive attitude towards SCTs. According to the theory of reasoned action it is expected that attitudes are a major determinant of planned behavior if the subjective norm is not counteracting it. This appears here to be the case. Therefore, this result supports the theory of planned behavior. Past experiences with SCTs have also a positive impact on the intention to use some treatment in the future. This result fits the newer rational choice theories. Our expectations with regards to gender were not supported. Women are not more inclined to undergo an SCT than men are. So, it is unlikely that women have higher levels of dissonance than men do.

In sum, it seems that mainly three factors are responsible for the intended use of SCTs: (a) a positive attitude toward such treatments, (b) the experience of dissonance with respect to smoking cessation, and (c) past experience with SCTs. The literature on SCTs suggests that the use of treatments enhances the quality of the quitting attempt by increasing the number of abstinent smokers. Therefore, it is important to persuade smokers to try some treatment when quitting. To enhance the willingness to undergo a treatment, it seems important to emphasize the greater chance to quit (more easily) with SCTs and to support this with scientific evidence. A further strategy could be to emphasize the difficulty of quitting without such means to increase the consciousness of the problems with quitting and so to increase their dissonance. Both strategies will probably lead to an increase of smokers who try some sort of treatment.

Some methodological remarks with regards to this study should be made also.

Although the causal model is based on theoretical and logical relations, data are of a cross-sectional nature. So, the causal ordering of the variables rests largely on theoretical and logical assumptions and not on empirical evidence. Only a longitudinal design can offer such definitive proof of the correct ordering.

Another objection to the study could be made with regards to the general character of the criterion variable: It implies the intention to use *any* treatment, while the intention to use a specific treatment, for example, NRT or acupuncture or a group therapy, may have some different determinants or at least some differences in the explaining power of the determinants of the general case. However, it seems reasonable to assume that before a subject comes to the intention to use a specific treatment, that subject will have the inclination to use help without having a clear picture of exactly which kind of help. The question by which factors that intention is generated is a relevant and legitimate research question that is never researched before, even though it is an important one for mobilizing smokers who seek help to make their quit attempts more successful.

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