The “Smoking Keeps you Slim” Lay Belief: Effects on Smokers’ Intentions and Behaviors

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Cite as:
saif Mohamad, Gomez Pierrick (2019), The “Smoking Keeps you Slim” Lay Belief: Effects on Smokers’ Intentions and Behaviors. *Proceedings of the European Marketing Academy*, 48th, (7904)

Paper presented at the 48th Annual EMAC Conference, Hamburg, May 24-27, 2019.

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ABSTRACT

This research examines the effects of the *smoking keeps you slim* lay belief on smokers' health-related intentions and behaviors and suggests recommendations to improve anti-smoking marketing. Building on past research indicating that fear of gaining weight is a barrier to quitting smoking and that lay beliefs are strong determinants of health behaviors , we theorized that smokers may have developed the lay belief that smoking helps stay slim (i.e., the *smoking keeps you slim* belief).The results of this research show that the *smoking keeps you slim* lay belief decreases smokers' intention and motivation to quit smoking (experiments 1-3-4) and increases smokers' actual smoking behavior (experiment 2). Moreover, we further demonstrate that a decreased perception in smoking risk severity mediates the relationship between the *smoking keeps you slim* lay belief and smokers' intention and motivation to quit smoking (experiment 3), and that self-esteem moderates this mediation (experiment 4). This dissertation contributes theoretically by extending the literature on anti-smoking marketing, and on consumer lay theories and health-related behavior. Managerially, this research suggests that public policymakers should legislate to restrict linking smoking to slimness in tobacco advertising and cigarette design, and to educate and inform consumers about the negative consequences of the *smoking keeps you slim* lay belief in order to counteract it.

Keywords

Lay theories, Smoking keeps you slim, Intentions to quit smoking

Track

Consumer Behavior

INTRODUCTION

Over the last fifty years, the serious threats posed by smoking have steadily increased in the United States, due to smoking-related diseases such as lung cancer, chronic obstructive pulmonary disease, ischemic heart disease, and strokes (Warren et al., 2014). Previous research in smoking prevention has documented the numerous reasons why people persist in smoking, of which the most common are dependence on the pleasurable effect of nicotine, the somatic sensations of stress relief and relaxation, and psycho-social factors (Fitz, 2015). In this research, we posit that smoking behavior could also be determined by lay beliefs about the consequences of smoking on body weight. Indeed, past research has shown that the fear of gaining weight is a constant concern associated with quitting smoking (Weekley et al. 1992) which may have encouraged smokers to develop the belief that smoking help to stay slim.

Lay theories about health and illness are widespread among consumers and influence their behavioral responses (Mukhopadhyay, 2011). Lay theories can be defined as being implicit, informal and non-scientific naïve beliefs that people hold and shape their behaviors (Furnham 1988). However, health-related lay beliefs often deviate from actual scientific knowledge leading people to adopt erroneously unhealthy behaviors (Karnani et al., 2017). For instance, people believing that the lack of physical exercise is the primary cause of obesity are more likely to overeat compared to those believing that the primary cause of obesity is poor eating habits (Mc Ferran and Mukhopadyay, 2013) Similarly, holding the lay belief that health and pleasure are negatively correlated leads consumers to choice an unhealthy option over an healthy one when an hedonic goal is made salient (Raghnunatan et al., 2006). In this research, we assume that people hold erroneous beliefs about the effect of smoking cessation on body weight. Although it cannot be disputed that smoking cessation is associated with weight gain, actual weight gain is relatively modest (Tian et al., 2015) and temporary (Reas et al., 2009). Thus, this lay belief could lead smokers to misinterpret the consequences of smoking cessation on body weight, and by doing so, decrease their intention to quit smoking.

BACKGROUND

Tobacco and body weight

A wide amount of research investigated the relation between smoking and body weight. A first body of research has found that smoking increases the metabolic rate (Gross et al., 1989) and suppresses appetite, leading to an inverted relationship between BMI and smoking (Klesges et al., 1989). These scientific findings could lead consumers to think that smoking is always associated to lower BMI. However, this relationship is non-linear and BMI is similar between never-smokers and heavy-smokers (Sneve and Jorde, 2008). A second body of research has investigated the consequences of smoking cessation on body weight. Previous studies agree on the fact that quitters experiment significant weight gain following smoking abstinence (Aubin et al., 2012). However, gain weight considerably varies and in total weight gain after smoking cessation is relatively modest. A meta-analysis including thirty-five cohort studies indicated that, compared to continuing smokers, quitters absolute weight gain was only 2.61 kg (Tian et al. 2015). Concerning factors affecting weight gain, it has been shown that it is higher among consumers highly dependent to nicotine (Komiyama et al., 2013). In the same vein, body weight

increase is relatively small among former light smokers compared to former heavy smokers (Veldheer et al., 2015). In addition, weight gain experimented by quitters tend to stabilize over time (Reas et al., 2009).

The smoking keeps you slim lay belief

Lay beliefs are implicit, informal, "non-scientific" naïve beliefs affecting people's behaviors (Furnham 1988). They are implicit beliefs developed within individuals, and affecting their actions and behaviors along with their will and determination (Dweck et al. 1995). Lay beliefs have to be distinguished from scientific theories that are empirically tested (Furnham and Cheng, 2000). Although the effect of smoking cessation on body weight is undisputable, findings from scientific research, mentioned above, indicate that this relation is more nuanced that consumers may think. The smoking keeps you slim lay belief may affect significantly consumers' intentions and behaviors (McFerran, and Mukhopadyay, 2013). For instance, various lay theories have been studied and proven to significantly influence health behaviors as the unhealthy equals tasty intuition (Raghunathan et al. 2006), the lay theories of emotion transience (Labroo and Mukhopadhyay 2009), the lay belief of optimism (Mukhopadhyay 2011), and the lay theory of obesity (McFerran and Mukhpadyay 2013). Our research expands the literature on lay theories by examining the *smoking keeps you slim* lay belief, and studying its effects on smokers' intentions to quit smoking and actual smoking behavior. Based on past research showing that post-cessation weight gain decreases intention to quit smoking or increases the rate of relapse after smoking cessation (Weekley et al., 1992; Harris et al., 2016) and that lay beliefs affect conjointly judgments and behaviors (Furnham and Cheng, 2000), we posit that:

H1: The *smoking keeps you slim* lay belief decreases smokers' intention and motivation to quit smoking.

H2: The *smoking keeps you slim* lay belief increases actual smoking behavior.

Next, we test whether perception of smoking risk severity mediates the effect of the *smoking keeps you slim* lay belief on smokers' intention and motivation to quit smoking. According to Romer and Jamieson (2001), lower perception of smoking risk severity decreases smokers' intention to quit smoking and increases the smoking behavior (Liu and Hsieh 1995). Also, Pechmann et al. (2003) found that increasing perceptions of smoking risk severity through certain anti-smoking themes enhance intentions to quit smoking. Furthermore, according to Aryal and Bhatta (2015), a positive perception related to smoking (the biased perception that smoking could have a benefit which is helping people to be slim) leads smokers to perceive smoking to be less severe. Thus we conceptualized that the perception of smoking risk severity mediates the effect of the *smoking keeps you slim* lay belief on smokers intentions to quit smoking. Thus, we posit that:

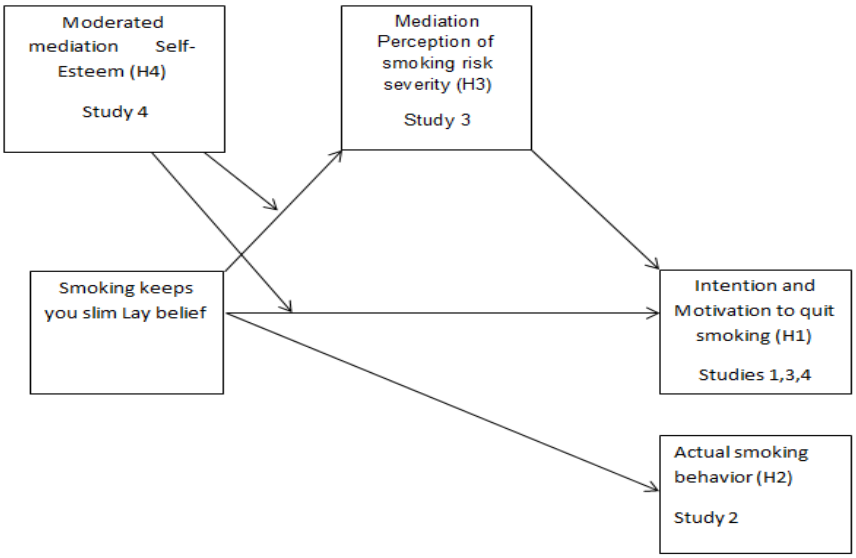
H3: Perception of smoking risk severity mediates the effect of the *smoking keeps you slim* lay belief on smokers' intention and motivation to quit smoking.

Finally, we test whether self-esteem moderates the mediation of perception of smoking risk severity on the effect of the *smoking keeps you slim* lay belief on smokers' intention and motivation to quit smoking. To starts with, Kokkevi et al. (2007) stated that low self-esteem increases smoking behavior and weakens attempts to quit smoking. On the other hand, persons

with low self-esteem are more influenced by negative social influence (Bandura 1977), thus, low-esteem individuals are more likely to adopt naïve beliefs in comparison with people with high self-esteem (Currie et al., 2004). Thus, we expect that smokers with low self-esteem (Vs high) have fewer intentions to quit smoking in order to avoid the risk of gaining weight (McGee and Williams, 2000), and we conceptualize that self-esteem moderates the mediation of the perception of smoking risk severity on the relation between the *smoking keeps you slim* lay belief and smokers' intentions to quit smoking. As a result, we hypothesize that:

H4: When self-esteem is low, perception of smoking risk severity mediates the relation between the *smoking keeps you slim* lay belief and smoker's intention and motivation to quit smoking..

Figure 1. Overview of studies



METHODOLOGY AND RESULTS

This research includes 4 experiments and 2 pretest experiments. All experiments consists in manipulating the *smoking keeps you slim* belief and investigating its consequences on smoking cessation intention among smokers. Participants were randomly assigned to one of the two experimental conditions (prime vs. neutral) and believed they were taking part in two ostensibly unrelated studies. In the first part of the studies, participants were exposed to text passages (McFerran and Mukhopadyay 2013) or movie trailers (Forgas and East 2008) to manipulate the *smoking keeps you slim* belief. We pretested each of the stimuli used in this research. In the second part of the studies, participants were asked to evaluate intentions to quit smoking (Studies 1, 3 and 4) or placed in situation involving actual smoking behavior (Study 2).

Study 1 tests the direct effect of the *smoking keeps you slim* lay belief on smokers' intention and motivation to quit smoking. This experiment tests H1 and shows the *smoking keeps you slim* lay belief decreases smokers' intention and motivation to quit smoking. Study 1 was conducted online using a French consumer panel. Participants received shopping points from the

market research institute as an incentive for completing the questionnaire. Participants (N=106) were all smokers, a small majority was male (51.9%), and the mean age was 45.08 years (SD= 13.69). The results of an ANOVA test indicate that the effects of the *smoking keeps you slim* lay belief are significant on intention to quit smoking (F (1, 105) =4.29; p=<.05) and motivation to quit smoking (F (1, 105) =4.28; p <.05). Participants in the prime group indicated lower intention to quit smoking (vs. neutral) (M_{prime} = 3.52; $M_{neutral}$ =4.02) and also indicated lower motivation to quit smoking (vs neutral) (M_{prime} = 3.29; $M_{neutral}$ =3.89). Study 1 provides support for our hypothesis that priming the *smoking keeps you slim* lay belief among decreases smokers' intention to quit.

Study 2 examines the effect of the *smoking keeps you slim* lay belief on smokers' actual smoking behavior. This experiment tests and confirms H2, which states that the *smoking keeps you slim* lay belief increases actual smoking behavior. Study 2 extends the findings of Study 1 to actual behavior. Seventy-two business students of a Middle East university participated in this study, in exchange for course credits. Participants were all smokers, randomly assigned to each condition, with a small majority of males (52.8%), and the mean age was 20.12 years (SD= 1.02). Participants were all Kuwaiti students. As a cover story, participants were told that they would be participating in a donut tasting session, followed by being offered the choice to smoke a cigarette. A binary logistic regression test showed that 64% of the primed group participants smoked, whereas only 36% of the neutral group did. The test is statistically significant (chi-square = 5.63, p < .05, df = 1), and Nagelkerke R2 =1. This study extends our findings to actual smoking choice.

Study 3 starts by examining the effect of the *smoking keeps you slim* lay belief on smokers' intention and motivation to quit smoking, and confirms H1. Then it addresses and confirms H3, stating that perception of smoking risk severity mediates the effect of the *smoking keeps you slim* lay belief on smokers' intention and motivation to quit smoking. In exchange for course credits, 102 business students of a Middle East university participated in this study. Participants were smokers, the majority were men (52.9%), and the mean age was 20.24 years (SD= 0.88). Participants were all Kuwaiti students (100%). The results of an ANOVA test showed significant differences between the prime and neutral groups with regard to the direct effects of the *smoking keeps you slim* lay belief on the dependent variables. Specifically, the results indicate that activating the *smoking keeps you slim* lay belief had significant main effects on participants' intention and motivation to quit smoking. Prime group participants indicated significantly less intention to quit smoking (vs Neutral) (M_{prime} = 3.44; $M_{neutral}$ =4.71; F (1, 101) =17.81; p <.01). In addition, prime group participants indicated significantly less motivation to quit smoking (Vs Neutral) (M_{prime} = 4.00; $M_{neutral}$ =5.00; F (1, 101) =10.25; p <.01). Furthermore, we conducted mediation analysis using Hayes' (2013) macro for SPSS to test H3. The results indicate that the *smoking keeps you slim* lay belief was a significant predictor of perception of smoking risk severity, b = -.93, SE = .29, p < .01, and that perception of smoking risk severity was a significant predictor of intention to quit smoking, b = .72, SE = .07, p < .01. The indirect effect of the *smoking keeps you slim* was conclusive, b = -.67, SE = .21, 95% CI = -1.12, -.29. The *smoking keeps you slim* lay belief remains a significant predictor of intention to quit smoking after controlling for the mediator, perception of smoking risk severity, b = -.60, SE = .23, p < .01 (at 1% confidence interval), which is consistent with partial mediation. We conducted another mediation analysis to investigate the hypothesis that perception of smoking risk severity mediates the effect of the *smoking keeps you slim* lay belief on motivation to quit

smoking and found similar results. The *smoking keeps you slim* lay belief was a significant predictor of perception of smoking risk severity, b = -.93, SE = .29, p < .01, and that perception of smoking risk severity was a significant predictor of motivation to quit smoking, b = .93, SE = -.05, p < .01. The indirect coefficient was significant, b = -.87, SE = .27, 95% CI = -1.37, -.33. The *smoking keeps you slim* lay belief was no longer a significant predictor of motivation to quit smoking after controlling for the mediator, perception of smoking risk severity, b = -.13, SE = .14, ns, consistent with full mediation. These findings are in line with H3.

Finally Study 4 tests and confirms H4, stating that self-esteem moderates the mediation of perception of smoking risk severity on the effect of the *smoking keeps you slim* lay belief on smokers' intention and motivation to quit smoking. In exchange for course credits, 70 business students of a Middle East university participated in this study. Participants were smokers, mostly men (55.7%), and the mean age was 20.67 years (SD= 1.16). Participants were all Kuwaiti students. The results of an ANOVA test indicated that the *smoking keeps you slim* lay belief has a main significant effect on intention to quit smoking. Specifically, prime group participants reported lower intention to quit smoking than neutral group participants (M_{prime} = 3.35; $M_{neutral}$ =5.22; F (1, 69) =23.42; p <.01). Prime group participants also reported lower motivation to quit smoking than neutral group participants (M_{prime} = 3.89; $M_{neutral}$ =5.18; F (1, 69) =12.62; p <.01). A moderated mediation analysis on the intention to quit smoking supports the perception of smoking risk severity as an underlying mechanism in the effect of the interaction between the *smoking keeps you slim* lay belief and self-esteem on participants' intention to quit smoking. The results show that the *smoking keeps you slim* lay belief and self-esteem significantly and indirectly affect intention to quit smoking, through the perception of smoking risk severity (indirect effect (a x b) = .96; SE= .49; 95% CI: .05 to 1.97). In particular, when self-esteem was low, perception of smoking risk severity mediates the effect on intention to quit smoking (Indirect effect (a x b) = -1.37; SE= .33; 95% CI: -2.12 to -.78). Conversely, no mediational pattern was found when self-esteem was high (indirect effect (a x b) = -.03; SE= .51; 95% CI: -.93 to 1.08). The analysis was conducted at one standard deviation below (M = 3.13) and above (M = 4.52) the average level (M= 3.82) of self-esteem. These results are in line with H4. Another moderated mediation analysis on motivation to quit smoking was conducted. Similarly, the *smoking keeps you slim* lay belief and self-esteem significantly and indirectly affect motivation to quit smoking, through the perception of smoking risk severity (indirect effect (a x b) = .91; SE= .45; 95% CI: .10 to 1.86). More specifically, perception of smoking risk severity mediates the effect on motivation to quit smoking (Indirect effect (a x b) = -1.30; SE= .30; 95% CI: -1.92 to -.73) for participants with low self-esteem whereas no mediational pattern was found for participants with high self-esteem. The analysis was conducted at one standard deviation below (M = 3.13) and above (M = 4.52) the average level (M= 3.82) of self-esteem. These results are in line with H4.

Table1. Summary of Study findings

Hypothesis examined	Sample	Participants	Priming technique	Moderation/ Mediation	Dependent variables	Results
Study 1 Text Passages Main Effect France H1	n = 106, 51.9% male 48.1 % female, Mage = 45.08, SD =13.69	French consumers	Scientific text passages (Activation of *Smoking keeps you slim* lay belief by prime text passage vs. neutral text passage)	Not tested	Intention to quit smoking Motivation to quit smoking	*Smoking keeps you slim* lay belief decreases intention and motivation to quit smoking
Study 2 Text Passages Actual smoking behavior H2	n = 72, 52.8% male 47.2 % female, Mage = 20.12, SD =1.02	Kuwaiti business school students	Same as study 1	Not tested	Actual smoking behavior	*Smoking keeps you slim* lay belief increases actual smoking behavior
Study 3 Video trailers Main Effect Test of mediation H3	n = 102, 52.9% male 47.1 % female, Mage = 20.24, SD =0.88	Kuwaiti business School students	Video trailers (Activation of *Smoking keeps you slim* lay belief by prime video trailer vs. neutral video trailer)	Mediation of perception of smoking risk severity	Intention to quit smoking Motivation to quit smoking	Perception of smoking risk severity mediates effects of *smoking keeps you slim* lay belief on intention and motivation to quit smoking
Study 4 Text Passages Main Effect Test of moderated mediation H4	n = 70, 55.7% male 44.3 % female, Mage = 20.67, SD =1.16	Kuwaiti business school students	Same as study 1 and 2	Moderated mediation of self-esteem	Intention to quit smoking Motivation to quit smoking	Self-esteem moderates mediation of perception of smoking risk severity on effects of *smoking keeps you slim* lay belief on intention and motivation to quit smoking

GENERAL DISCUSSION

This research comprises four studies. Study 1 examines the main effect of the *smoking keeps you slim* lay belief on smokers' intention and motivation to quit smoking and concludes that this lay belief decreases smokers' intention and motivation to quit smoking (H1). Study 2 extends the findings of study 1 by showing that the *smoking keeps you slim* belief also increases smokers' actual smoking behavior (H2). Study 3 shows that perception of smoking risk severity mediates the effect of the *smoking keeps you slim* lay belief on smokers' intention and motivation to quit smoking (H3), whereas Study 4 shows that self-esteem moderates this mediation (H4).

This article contributes to the antismoking marketing literature. Much research has indicated that the fear of gaining weight is an important reason preventing smokers from quitting smoking (Sorensen et al., 1992), or even attempting to quit smoking (Weekley et al., 1992). In this dissertation, we highlight the consequences of the *smoking keeps you slim* lay belief on smokers' intentions and behaviors. The second theoretical contribution of this dissertation is to the lay theories literature. Our research expands the literature on lay theories (Mukhopadhyay and Johar, 2005) by examining the belief that smoking help to stay slim, and studying its effects on consumers' health-related intentions and behaviors. Similarly to erroneous beliefs about obesity (Karnani et al., 2017), this dissertation shows that the *smoking keeps you slim* lay belief may encourage consumers to adopt behaviors that are detrimental to their health. especially among smokers with low self-esteem.

In the other hand this research demonstrates that this lay belief lowers motivation and intention to quit smoking by making salient a major barrier to smoking cessation and, by doing so, may contribute to stagnation of smoking rates in certain parts of the world or among certain types of smokers (Pisinger et al., 2018; Hollander, 2018; INPES – "Les profils des fumeurs en France", 2018). We suggest that public policymakers could implement new laws to regulate tobacco company marketing and develop new public awareness campaigns concerning the risks of the smoking keeps you thin lay belief to counteract its negative effects. We suggest that public policymakers could introduce new regulations or laws that forbid tobacco companies from linking smoking to slimness and leanness in their marketing communication. We also propose that anti-smoking campaigns should focus on educating and informing consumers about the fact that the effects of smoking cessation on body weight is often misinterpreted by consumers. Thus, anti-tobacco agencies have an important role to play in reducing the effect of the *smoking keeps you slim* lay belief.

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