

Knauss, F., Martz, D., Parker, A., Curtin, L., & Pai, S. (2005). Women and cigarette smoking: Does amount of weight gain following a failed quit attempt affect social disapproval? **Addictive Behaviors**, 30, 643-651. ISSN: 0306-4603 Version of record published by Elsevier - DOI:10.1016/j.addbeh.2004.08.010

## **Women And Cigarette Smoking: Does Amount Of Weight Gain Following A Failed Quit Attempt Affect Social Disapproval?**

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### **ABSTRACT**

This study examined the perception of social attractiveness and approval of smoking in a vignette of an American college female smoker after a failed quit attempt. It was hypothesized that she would be perceived more favorably when she was smoking to control her weight, compared to a non-weight related excuse during a failed quit attempt. The design was a 2 (gender: male vs. female)×4 (condition: control, 5, 10, 20 lb gain)×3 (participants' smoking status: never, former, or current smoker) factorial design with the Social Attraction Index and Perception of Smoking Index as dependent variables. Contrary to the hypothesis, perceptions of the female were not affected by her disclosed amount of weight gain. However, consistent with the literature on stigmatization of smokers, smoking participants perceived the female target as most socially attractive and nonsmokers perceived her to be the least attractive.

### **ARTICLE**

Cigarette smoking is the leading preventable cause of morbidity and mortality in the United States, resulting in 20% of deaths annually (Centers for Disease Control and Prevention, 1999 and Norman & Tedeschi, 1989). Although smoking has detrimental effects on all smokers, women are susceptible to distinctive smoking-related health

risks. Not only do female smokers face a 24% greater chance of developing lung cancer, they are also vulnerable to an increased likelihood of developing cervical cancer and osteoporosis (Epps & Geller, 2001). Furthermore, among female smokers who use oral contraceptives, the rate of heart attacks is increased 10-fold. Women smokers are also prone to difficulties during pregnancies, such as an increased risk of miscarriage, preterm deliveries, and low birth weight infants.

Despite the negative health consequences associated with cigarette smoking, the overall trend in female smoking is alarming. Although male smoking is declining, research indicates an increase in the incidence of teenage female smoking (Swan, 1997 and United States Department of Health and Human Services, 2001). In addition, adolescent girls are more likely than boys to become regular smokers within the first year of initial experimentation (Ershler, Leventhal, Fleming, & Glynn, 1989). Cigarette smoking's debilitating health consequences combined with its increased incidence among females makes it necessary to investigate the factors influencing this epidemic.

Literature continues to support the theory that weight concerns and dieting, pervasive realities in the lives of American females, put women at an increased risk for smoking initiation and a decreased likelihood for successful cessation (French & Jeffery, 1995 and Mizes et al., 1998). Smokers weigh less than nonsmokers, smoking initiation is connected to weight loss, and smoking cessation is associated with weight gain (Klesges, Meyers, Klesges, & LaVasque, 1989). Furthermore, French and Jeffery (1995) suggest that dieting and weight anxiety are positively linked to smoking in both cross-sectional and prospective studies. Females who have a fear of gaining weight and diet regularly are twice as likely to become smokers. In addition, females, as compared to males, are less likely to accept weight gain during attempts to quit smoking (Pomerleau & Kurth, 1996), which provides insight into women's patterns of cessation reluctance, as well as high rates of relapse (Pomerleau & Kurth, 1996 and Weekley et al., 1992). Therefore, women may initiate cigarette smoking for weight control and fear of weight gain may be a deterrent to smoking cessation.

The tobacco industry has long exploited the idealized image of a thin, independent, attractive female smoker (U.S.D.H.H.S., 2001). These marketing strategies reinforce the belief that smoking controls body weight (Boles & Johnson, 2001). Such advertisements are particularly salient due to popular culture's emphasis on physical appearance among young women. Thus, perceived social pressure for thinness often leads females to use weight loss methods that pose serious health risks (Kilbourne, 1994).

The behavioral contradictions inherent in cigarette smoking create a paradoxical phenomenon. Among females who smoke to control body weight, their behavior is motivated by a desire to be perceived as attractive and healthy. However, while these women may be perceived as healthy, thin individuals, they place their own health at significant risk. In other words, the long-term risks (morbidity from smoking) are outweighed by short-term gains (perceived as thin and attractive). The social psychology of this phenomenon suggests that a person's publicly proclaimed motivation to smoke, or inability to quit, should influence how others perceive the individual and her smoking behavior. Although a change in perceptions of smoking has accompanied the overall decrease in smoking (Jenks, 1991), there is limited literature examining the perception of females who smoke.

The minimal research investigating perceptions of smokers reveals that smoking behavior influences social judgment. Bleda and Sandman (1997) discovered that smokers were evaluated negatively by nonsmokers. Likewise, Goldstein (1991) found among Canadians that nonsmokers were judged to be cleaner, slightly healthier, and more attractive than smokers; as demonstrated in perceptual ratings across both smokers and nonsmokers. Similarly, English nonsmokers described female smokers as cheap, common, and unladylike (Elkind, 1985). Lee (1989) reported that among Australian smoking and nonsmoking health-care students, a female smoker than a nonsmoking female in a vignette, was rated as more selfish, less healthy, a poorer co-worker, less ladylike, and less assertive. Consistent with tobacco advertising, however, the female smoker was rated as more successful, sophisticated, sociable, and liberated than the female in the nonsmoking condition; 80% of current smokers and almost 95% of nonsmokers acknowledge that smoking is detrimental to one's health (Marke & Troyer, 1979). Ironically, however, some women may continue smoking to remain thin, in order to appear healthy and attractive. Given that the desire to maintain a thin physique fits within our cultural norms, smoking may be perceived as more acceptable for women who are smoking to control their weight.

This study examined if the perception of a female smoker varies with respect to how much weight was gained during an attempt to quit smoking. It was hypothesized that smoking would be perceived as more acceptable for a college female who was smoking to control her weight, particularly if she gained more weight (20 lb) than less (5 lb), compared to a non-weight related excuse upon attempting to quit.

## **1. Method**

### **1.1. Participants**

Participants (i.e.,  $n=105$ ; 57 males and 48 females) were recruited by using the general psychology subject pool at a mid-sized, comprehensive, southeastern university. Average age was 19 years for both males and females ( $S.D.=2.8$ ). The average yearly reported family income for males was \$70,000–\$79,999 and for females between \$60,000 and \$69,999. The majority, 90% (i.e., 87.7% males and 91.7% females), of participants were Caucasian. Other ethnic groups represented were 6.6% African Americans, 1% Hispanic, 1% Asian, and 1.9% other. Smoking status was defined by having participants choosing one category in response to “Have you ever been a cigarette smoker?” of (a) “yes, I am a current smoker”, (b) “yes, I am an ex-smoker”, or (c) “no, I have never smoked”. Of the total participants, the data revealed that 21% were smokers ( $n=22$ ), 9% ex-smokers ( $n=9$ ), and 70% nonsmokers ( $n=74$ ). Further classified by gender, 15.8% of males and 27.1% of females were smokers, 8.8% of males and 8.3% of females were ex-smokers, and 75.4% of males and 64.6% of females were nonsmokers. The body mass index (BMI) mean for males was 24.0 and 22.3 for females. This research was approved by the university's Institutional Review Board on 12-6-01 and 11-13-02 and adhered to ethical guidelines of the American Psychological Association (2002).

### **1.2. Materials**

#### **1.2.1. Demographics and smoking scale**

The Demographic and Smoking Scale, developed by the investigators, assessed gender, ethnicity, economic status, height, weight, and smoking status of all the participants. The information on gender (males vs. females) and smoking status (current smokers vs. ex-smokers vs. nonsmokers as described previously) was used to classify two of the independent variables. The third independent variable was randomized in the procedure.

#### **1.2.2. Social attraction index**

The Social Attraction Index (SAI; Rudman, 1998) is a four-item index that asks participants to rate the target's likability, popularity, and friendliness. Three additional

items were added using the same Likert scale (1="not at all" to 7="a great deal") to assess a participant's desire to meet the target, to socialize with her, and rate overall attractiveness of the target. Cronbach's alpha=0.874 indicates the scale measured a unified construct in this study.

### **1.2.3. Perception and smoking index (PSI)**

This eight-item scale, developed by the investigators, had participants rate their impression of the female target on a Likert scale of 1–7 whereby response options varied for each item in a bipolar fashion (e.g., healthy–nonhealthy). The items included: "Did you perceive this person as healthy?", "What was your impression of her smoking?", "What social class do you think she belongs to?", "What is the highest level of education you think she has achieved?", "How would you rate her as a potential mother?", "How would you rate her quality of partnership in a relationship?", "How would you rate her quality of being a roommate?", and "How would you rate the individual's likelihood of becoming fat?". In the current study, these items yielded a Cronbach's alpha of 0.62, suggesting a loosely unified construct and substantiating a need for separate item analyses.

### **1.3. Procedures**

Participants were run in groups of not, vert, similar<sup>20</sup> and were randomly assigned to condition by counterbalanced sign up times. After reading the appropriate vignette that depicted the female target responding to interview questions from an overhead, participants recorded their demographic information, smoking status, and rated the target using the PSI and SAI.

The study manipulated the experimental condition of weight gain, via the scripted vignette. When the target female was asked about her desire to change anything about herself, she consistently reported that she would like to change her cigarette smoking habit. She then disclosed a previous failed attempt to quit.<sup>1</sup> The independent variable was her explanation for relapse to regular smoking. She either reported that quitting smoking was too hard (control) or that she gained 5, or 10, or 20 lb; creating the four separate conditions. Participant gender and smoking status served as the other two independent variables.

The resulting design was a 2 (gender: male (n=57) vs. female (n=48)) by 4 (condition: control (n=26), 5 (n=25), 10 (n=28), or 20 (n=26) lb gain) by 3 (participants' smoking status: never (n=74), former (n=9), or current smoker (n=22)) factorial design with the SAI and PSI as dependent variables. Separate 2x4x3 analyses of variance (ANOVAs) were run on each dependent variable.

## 2. Results

An analysis of variance (ANOVA) was performed with gender, condition, and smoking status as independent variables separately for the SAI and PSI individual items as dependent variables. Despite the hypothesis, there was no significant effect for condition,  $F(3, 21)=0.6, p>0.05$  or gender on the SAI,  $F(1, 21)=0.65, p>0.05$ . There was, however, a significant effect for smoking status on the SAI,  $F(2, 21)=4.8, p<0.05$ . As Table 1 illustrates, pairwise comparisons indicated a significant difference between smokers and nonsmokers on overall perceptions of the female target. Smokers perceived the female target as most attractive, nonsmokers perceived her to be the least attractive, and ex-smokers perceptions fell in between the smokers and nonsmokers' ratings.

**Table 1.**

**Mean social attraction index rating of the female target by participants' smoking status**

	Mean	Standard deviation
Smokers	34.0 <sub>a</sub>	5.66
Ex-smokers	30.6 <sub>ab</sub>	6.09
Nonsmokers	28.1 <sub>b</sub>	6.42

Means that do not share subscripts differ at  $p<0.05$ .

In addition, there were some significant effects on the PSI individual items, including a main effect of participant smoking status on the “What was your impression of her smoking?” item of the PSI,  $F(2, 21)=31.4, p<0.05$ . Pairwise comparisons indicated that smokers rated the target's smoking as significantly more appealing than both ex-smokers and nonsmokers. Nonsmokers rated her smoking behavior as the least

appealing (see Table 2). Similarly, there was a significant effect on smoking status and the “How would you rate her as a potential mother?” PSI item,  $F(2, 21)=8.3$ ,  $p<0.05$ . Pairwise comparisons indicated that smokers perceived the female target to be a better potential mother as compared to both ex-smokers and nonsmokers (see Table 2). In addition, there was a significant effect for gender on the “potential as a mother” item,  $F(1, 21)=4.7$ ,  $p<0.05$  with females rating her more favorably than males.

**Table 2.**

**Descriptive statistics for the significant PSI items**

	Mean	Standard deviation
<i>“What was your impression of her smoking” PSI item by participants' smoking status</i>		
Smokers	3.73 <sub>a</sub>	0.98
Ex-smokers	2.33 <sub>b</sub>	1.00
Nonsmokers	1.65 <sub>b</sub>	0.93
<i>“How would you rate her as a potential mother” PSI item by participants' smoking status</i>		
Smokers	5.23 <sub>a</sub>	0.92
Ex-smokers	4.11 <sub>b</sub>	0.60
Nonsmokers	4.46 <sub>b</sub>	0.71

Means that do not share subscripts differ at  $p<0.05$ .

**3. Discussion**

The purpose of this study was to examine perceptual ratings of a female who smoked cigarettes as a means to control body weight. The objective was to investigate if the amount of weight gained by the female target following a failed quit attempt (a) affected the perceptual disapproval of smoking, (b) altered her social attractiveness, and/or (c) affected other impressions. It was hypothesized that smoking would be perceived as more acceptable for a college female who was smoking to control her weight, as compared to a non-weight related excuse given as a deterrent to smoking cessation.

Contrary to the hypothesis, our results found that perception of the female target did not vary as a function of the amount of weight gained. However, significant effects were yielded for participant smoking status on both the Social Attraction Index and the Perception of Smoking Index, indicating that participants' smoking status influenced their perceptions and ratings. On the SAI, smokers perceived the target female smoker as the most socially attractive, as compared to nonsmokers who rated the target to be the least attractive. The PSI scale revealed significant effects on the “potential as a mother” and “impression of her smoking” items. In particular, current smokers, as compared with ex-smokers and nonsmokers, rated the female target more favorably on the PSI “potential as a mother” item. Overall, current smokers rated the target's smoking behavior as more appealing than ex-smokers and nonsmokers.

Our study results are similar to previous research attesting to the social stigmatization of smokers; and further illustrating that nonsmokers, as compared to smokers, have greater stigmatization of smokers (Bleda & Sandman, 1997 P.R. Bleda and P.H. Sandman, In smoke's way: Socioemotional reactions to another's smoking, *Journal of Applied Psychology* 62 (1997), pp. 452–458. Bleda & Sandman, 1997, Elkind, 1985 and Goldstein, 1991). Although not surprising, the findings are consistent with several social psychological theories, including a similarity effect (i.e., that we like people similar to us; Byrne, 1997 and Byrne et al., 1986) and cognitive dissonance (i.e., how could a smoker judge another smoker unfavorably; Festinger, 1957). These findings suggest the social norm, at least for college students, is that smoking is an unappealing behavior, especially among nonsmokers. Acknowledging and enhancing this stigmatization of smokers may be important in the development of future public health interventions with college students, especially considering that smokers who have felt stigmatized are more willing to quit than those who have not (Kim & Shanahan, 2003).

This study has several notable limitations. This research, via a scripted vignette, portrayed the image of an American female college student who is unable to quit smoking. Hence, the perceptual ratings were derived from an artificial environment, devoid of the typical complexities of social situations. Research investigating attitudes of female smokers utilizing alternative, more real-world methods would be beneficial. Likewise, the vignette primarily assessed the female target's excuse for a failed quit attempt, which limits the ability to extrapolate on other confounding variables that may alter social perceptions. For instance, we are unable to infer if the target's specific motivation for smoking initiation (i.e., smoking as a weight-control device) and/or current



smoking habits (i.e., # of cigarettes consumed) would influence perceptual ratings. Additionally, the female target's physical attractiveness was not described in the vignette. Perhaps individuals would be more lenient if they knew the female target was overweight prior to her attempt at smoking cessation.

Although inconsistent with our hypothesis, the fact that college students did not excuse the target's smoking behavior, based on amount of weight gained during an attempt at cessation, is indeed refreshing. Even though body image concerns are a pervasive social norm for females (Striegel-Moore, Silberstein, & Rodin, 1986), this sample of college students, both males and females, did not alter their perceptions of the target female according to her public proclamation that she returned to smoking because of the need to manage her weight. It is possible the sample perceived weight gain as an invalid excuse to resume an unhealthy habit. It is important to note that, due to educational level of a college sample, these findings may not be representative of the population at large. Future research may wish to explore if a similar perception exists in varying sample populations (e.g., a blue-collar sample) where smoking is more prevalent.

Given females increasing incidence of cigarette smoking and the debilitating health consequences, it is necessary to investigate the factors influencing this pattern. Literature continues to support that weight concerns and dieting, a pervasive reality in the lives of American females, puts women at an increased risk for smoking initiation and a decreased likelihood for successful cessation (Klesges et al., 1989). Has the ideal physical appearance taken precedence over health in the lives of women? If so, does the public sympathize with the need to sacrifice well-being for beauty? Overall, this study found that perceptions of female smokers do not vary as a function of either the amount of weight gained or by the gender of the participants; however, they do vary as a function of participant smoking status. In particular, smokers perceive other smokers as more favorable (i.e., attractive) than both ex-smokers and nonsmokers.

### **Acknowledgment**

We would like to thank Alexis Scanlon, Lori Setzer, Lindsey Williams, Rachel Widener, Jennifer Gray, Sandra Hopkins, and Terrell Gould for their assistance in data collection and entry.

## Notes

<sup>1</sup> After discussion about the target female's hometown, her impression of our town, and her major and academic life, the dialogue becomes: Interviewer: Is there anything in your life that you would want to change? Ashley (Target Female): You mean about myself? Interviewer: yes Target: I guess it would have to be my cigarette smoking. Interviewer: Oh, so you're a smoker. How much do you smoke? Target: I usually smoke about a pack a day. Interviewer: Have you ever tried to quit? 5 lb condition Target: Yes, I tried to stop smoking last month, but I thought I was gaining weight, and when I checked I realized I had gained 5 lb, so I started smoking again to keep my weight under control. 10 lb condition Target: Yes, I tried to stop smoking last month, but I thought I was gaining weight, and when I checked I realized I had gained 10 lb, so I started smoking again to keep my weight under control. 20 lb condition Target: Yes, I tried to stop smoking last month, but I thought I was gaining weight, and when I checked I realized I had gained 20 lb, so I started smoking again to keep my weight under control. Control condition Target: Yes, I tried to stop last month, but it was simply too hard to quit, so I started smoking again. Interviewer: So are you still smoking a pack a day? Target: Yeah, I'm afraid so.

## References

American Psychological Association, 2002 American Psychological Association. (2002). Ethical principals of psychologists and code of conduct. Retrieved from worldwide web, <http://www.apa.org/ethics/>.

Bleda & Sandman, 1997 P.R. Bleda and P.H. Sandman, In smoke's way: Socioemotional reactions to another's smoking, *Journal of Applied Psychology* 62 (1997), pp. 452–458.

Boles & Johnson, 2001 S.M. Boles and P.B. Johnson, Gender, weight concerns, and adolescent smoking, *Journal of Addictive Diseases* 20 (2001) (2), pp. 5–14.

Byrne, 1997 D. Byrne, An overview (and underview) of research and theory within the social attraction paradigm, *Journal of Social and Personal Relationships* 14 (1997), pp. 417–431.

Byrne et al., 1986 D. Byrne, G.L. Clore and G. Smeaton, The attraction hypothesis: Do similar attitudes affect anything?, *Journal of Personality and Social Psychology* 51 (1986), pp. 1167–1170.

Centers for Disease Control and Prevention, 1999 Centers for Disease Control and Prevention, Cigarette smoking among adults, *Morbidity and Mortality Weekly Report* 48 (1999) (43), pp. 993–996.

Elkind, 1985 A.K. Elkind, The social definition of women's smoking, *Social Science & Medicine* 20 (1985), pp. 1269–1278. Abstract | PDF (1225 K) |

Epps & Geller, 2001 Epps, R. P., & Geller, M. A. (2001). The American Medical Women's Association (AMWA). Impact of smoking on women. *The Women's Complete Healthbook*. Retrieved from worldwide web 8-11-04, <http://www.amwa-doc.org/>.

Ershler et al., 1989 J. Ershler, H. Leventhal, R. Flemming and K. Glynn, The quitting experience for smokers in sixth through twelfth grades, *Addictive Behaviors* 14 (1989), pp. 365–378.

Festinger, 1957 L. Festinger, A theory of cognitive dissonance, Stanford University Press, Stanford (1957).

French & Jeffery, 1995 S.A. French and R.W. Jeffery, Weight concerns and smoking: A literature review, *Annals of Behavioral Medicine* 17 (1995) (3), pp. 234–244.

Goldstein, 1991 J. Goldstein, The stigmatization of smokers: An empirical investigation, *Journal of Drug Education* 21 (1991) (2), pp. 167–182.

Jenks, 1991 R.J. Jenks, Attitudes, perceptions, and risk-taking behaviors of smokers, exsmokers, and nonsmokers, *The Journal of Social Psychology* 132 (1991) (5), pp. 569–575.

Kilbourne, 1994 J. Kilbourne, Still killing us softly: Advertising and the obsession for thinness. In: P. Fallon, M.A. Katzman and S.C. Wooley, Editors, *Feminist perspectives on eating disorders*, The Guilford Press, New York (1994), pp. 395–418.

Kim & Shanahan, 2003 S.H. Kim and J. Shanahan, Stigmatizing smokers: Public sentiment toward cigarette smoking and the relationship to smoking behaviors, *Journal of Health Communication* 8 (2003), pp. 343–367.

Klesges et al., 1989 R.C. Klesges, A.W. Meyers, L.M. Klesges and M.E. LaVasque, Smoking, body weight, and their effects on smoking behavior: A comprehensive review of the literature, *Psychological Bulletin* 106 (1989), pp. 204–230.

Lee, 1989 C. Lee, Stereotypes of smokers among health science students, *Addictive Behaviors* 14 (1989) (3), pp. 327–333.

Marke & Troyer, 1979 E. Marke and R.J. Troyer, Smoke gets in your eyes: Cigarette smoking as deviant behavior, *Social Problems* 26 (1979), pp. 311–324.

Mizes et al., 1998 J.S. Mizes, D.M. Sloan, K. Segraves, B. Spring, R. Pingitore and J. Kristeller, The influence of weight-related variables on smoking cessation, *Behavior Therapy* 29 (1998), pp. 371–385.

Norman & Tedeschi, 1989 N. Norman and J. Tedeschi, Self-presentation, reasoned action, and adolescents' decision to smoke cigarettes, *Journal of Applied Social Psychology* 19 (1989), pp. 543–558.

Pomerleau & Kurth, 1996 C.S. Pomerleau and C.L. Kurth, Willingness of female smokers to tolerate postcessation weight gain, *Journal of Substance Abuse* 8 (1996) (3), pp. 371–378.

Rudman, 1998 L.A. Rudman, Self-promotion as a risk factor for women: The costs and benefits of counterstereotypical impression management, *Journal of Social Psychology* 74 (1998) (3), pp. 629–645.

Striegel-Moore et al., 1986 R.H. Striegel-Moore, L.R. Silberstein and J. Rodin, Toward an understanding of risk factors for bulimia, *American Psychologist* 41 (1986), pp. 246–263.

Swan, 1997 N. Swan, Women's dependence on smoking affected by something in addition to nicotine, *NIDA Notes* 12 (1997) (3).

United States Department of Health and Human Services, 2001 United States Department of Health and Human Services (2001). Women and smoking: A report from the Surgeon General: David Satcher. [on-line]. Available: [http://www.cdc.gov/tobacco/sgr/sgr\\_forwomen/ataglance.html](http://www.cdc.gov/tobacco/sgr/sgr_forwomen/ataglance.html).

Weekley et al., 1992 C.K. Weekley, R.C. Klesges and G. Reylea, Smoking as a weight-control strategy and its relationship to smoking status, *Addictive Behaviors* 17 (1992), pp. 259–271.