

COLLEGE STUDENTS, TATTOOING, AND THE HEALTH BELIEF MODEL: EXTENDING SOCIAL PSYCHOLOGICAL PERSPECTIVES ON YOUTH CULTURE AND DEVIANCE

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This research extends social psychological models which have previously been used to explain tattooing behavior. We apply the Health Belief Model to the decision-making process by which young adults express interest in or obtain a tattoo. We examine the five components of the Health Belief Model with regard to the likelihood of being tattooed, being interested in tattoos, or obtaining a (or another) tattoo. Survey data were gathered from 520 undergraduate students at a large, public university in the southwest. Their responses show the Health Belief Model to be a significant predictor of this behavior among the students in our sample.

INTRODUCTION

Tattooing has been present in every culture, in some form, for thousands of years. The 1991 discovery of the 5,000 year-old Oetzi, the Iceman, with 57 tattoos on his body, is thought

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to be the best-preserved frozen mummy to illustrate the practice of ancient tattooing (Witze 1999). In general, tattooing today can be found "on people of all ages, occupations, and social classes, with almost 50 percent of all tattoos being done on women" (Armstrong, 1991, p. 215), including many mainstream adolescents, college students, and young adults (Drews, Allison, and Probst 2000).

This paper examines the ways in which social, psychological, and physical health risks deter individuals from becoming interested in, or obtaining, tattoos. More specifically, we address not only the social components of the decision making process such as parental expectations and peer pressure, but also the health risks associated with the process. We further examine the awareness, attitudes and retrospective assessments of health-related issues among individuals who are already tattooed.

We begin with a discussion of the social-psychological factors which motivate youth to conforming and/or deviant behavior. Simmel (1950), Lyman and Scott (1970), Irwin (2001), and Velliquette and Murray (2002) argue that individual identities develop amid a complex of social pressures to both conform and act out against prevailing norms. Peer and parental influences compete and often conflict. As youth approach early adulthood, they decide upon the ways they wish to present themselves to others, and count the costs of doing so by gauging the reactions they get. Attendant to this process are psychosocial risks and rewards. For example, the choice between acceptance by peers and rejection by parents and other authority figures factors into the decision-making process for behavior in general. We imagine this to be more consequential when individuals contemplate getting something as permanent as a tattoo.

Next, we apply the basic principles of the Health Belief Model (Becker 1974, 1993; Rosenstock 1966; Rosenstock, Strecher, and Becker 1988) to offer a more complete theoretical explanation of why individuals become interested in and/or obtain tattoos. Although many individuals are acquiring and enjoying them, serious concerns have been raised about the health risks associated with tattooing (Larkin 1993). These risks include, but are not limited to, idiosyncratic variation in (1) the equipment, (2) the artist's education, (3) the physical environment where body art is

performed, and (4) the insufficient regulations and enforcement associated with tattooing (Armstrong and Fell, 2000). The tattoo pigment that is used is not approved by the Food and Drug Administration and the ingredients are non-standardized so any proportion of metallic elements may be present (Duke, Urioste, Dover, and Anderson 1998; Larkin 1993). Reputable tattoo artists have knowledge of sanitation, infection control, sterilization and skin care procedures. Yet, educational requirements for tattoo artists exist in only nine states (AK, AR, HI, KS, MA, NH, OR, RI, and SC); (Armstrong and Fell 2000).

While many people believe that tattooing establishments are inspected, monitored, or regulated, there are no universal procedural health standards for tattooing. Thus, obtaining a safe tattoo means the customer must be knowledgeable about the artist, the technique, the equipment, and wound or skin care. Tattoos can be obtained in a studio or in many makeshift situations such as mobile vans, flea markets, rock concerts, and even fraternity parties. Over the three days of Woodstock '99, more than 500 tattoos (and 700 piercings) were provided (Gunderson and Soriano 1999). While state regulations for tattooing are present in over half of the United States, these laws are not typically enforced (Armstrong and Fell 2000). Some reasons for the lack of enforcement include scant personnel resources of health departments, inadequate funding, or differing departmental priorities.

The potential for infections and the transmission of blood borne diseases such as hepatitis B (HBV) and hepatitis C (HCV) are the major physical concerns present with tattooing. The transmission of HIV through the tattoo process remains questionable (Anderson 1992; Doll 1988; Long and Rickman 1994). During the repetitive puncturing of the tattoo pigment, there is a small to moderate release of serosanguinous fluid. If the artist is in poor health or uses poor technique or unhygienic instruments, contaminants can be transmitted to the customer in as little as 0.00004 ml of blood (British Medical Association 1990; Long and Rickman 1994; Shimokura and Gully 1995). Likewise, customers in poor health can also pass along infections to the artist and other customers if poor artist/studio hygiene exists.

Despite these risks and variations in regulation and enforcement, nearly 20% of our college-age respondents

reported that they already had at least one tattoo and nearly one third reported a serious interest in obtaining a tattoo. Below, we outline a theoretical framework which seeks to explain the decision-making process by which a substantial proportion of collegeaged individuals choose to obtain a tattoo despite the attendant risks.

THEORETICAL FRAMEWORK

Classic social psychological perspectives are inadequate in explaining the complexities involved in the decision to obtain a tattoo. Given the social ramifications (both positive and negative) and health risks associated with tattooing, the comprehensive scope of the Health Belief Model (HBM) enables us to develop a more explicitly sociological approach.

The HBM, typically utilized to explain more outwardly risky health behaviors, is also useful in explaining the decision making process behind the tattooing behavior of youth. Specifically, this perspective focuses on tattooing as a potentially risky health behavior and is the main focus of this research. Combining both types of models (deviance/identity and risk) yields a much more thorough analysis of the multifaceted concerns experienced by those seeking to obtain or avoid the first or subsequent tattoos.

BODY TERRITORIES, CULTURE, AND IDENTITY

In his essay, "The Metropolis and Mental Life," Georg Simmel (1950) argues that the stresses of conformity and mistrust in modern life produce a psychological malaise that leads individuals to seek out avenues for individuation and self-fulfillment. Simmel argues that this need is especially prevalent among youth, due to their limited power and control over their own lives. One outlet for this expression is deviance. Although Simmel does not delineate the specific strategies utilized by this group, Lyman and Scott (1970) provide an explanation that proves to be quite useful in this regard.

Lyman and Scott (1970) discuss four sites in which Simmel's "individuation" may actually take place. First, *public territories* are locations that all may frequent within reason.

However, those who wish to act in public places must follow the laws prescribed for such locations. Second, *home territories* are those locations which become more personal. Although these territories may in fact be public, groups or individuals may claim them for their own, imposing specific rules or regulations on those who inhabit the space. Third, *interactional territories* are somewhat less tangible. These territories are defined by the invisible boundaries that define a social situation or experience. Finally, and most importantly for our purposes, are *body territories*.

According to Lyman and Scott, (1970, p. 96) body territories “include the space encompassed by the human body and the anatomical space of the body” with the latter being “the most private and inviolate of territories belonging to an individual.” Although body territories are at times socially regulated (i.e., prohibitions against masturbation, appearance norms at work, and so on) the individual can also claim this site as location of creative self-expression. For example, “the body may be marked or marred by scars, cuts, burns, and tattoos” that become, in effect, “indicators of status or stigma” (Lyman and Scott 1970, p. 97). More specifically, these physical markings are symbolic representations of group membership, values, gender, and so on. In the case of tattoos, the authors note several possible meanings: “Tattoos may memorialize one’s mother or sweetheart as well as indicate one’s seafaring occupation” (Lyman and Scott 1970, p. 97). Although these examples are somewhat dated in light of more recent research, it is clear that the body territory is a useful way to express oneself symbolically, particularly for those groups that have limited access to other territorial forms such as racial and ethnic minorities, women, inmates of various types, and youth.

Irwin (2001) and Velliquette and Murray (2002) extend this work on personal and group identity development to the specific behavior of tattooing arguing that tattoos represent both a moral passage of sorts and also an attempt to individuate oneself from the larger society. As noted above, the body territory is the ideal site for this intensely personal act. Through the public display of self-concept and the positive forces of subculture affirmation or legitimation, tattooing becomes an intricate component of the development of the social self for some individuals.

However, as noted above, we contend that these social psychological approaches, although useful, cannot fully account for the decision to become tattooed. Given the potential health risks associated with tattooing, it seems reasonable to conclude that individuals also consider health consequences prior to obtaining a tattoo. More specifically, the Health Belief Model adds a new dimension to the existing tattoo literature; it moves us toward a more holistic analysis of attitudes concerning physical well-being and health safety.

HEALTH BELIEF MODEL AND TATTOOING

This research also uses the Health Belief Model (Becker 1974, 1993; Rosenstock 1966; Rosenstock et al. 1988) to examine the extent to which young adults perceive tattooing to be sufficiently hazardous to their health such that they did not have, were not interested in, and would not get a (or another) tattoo. Although tattooing can be explained using the social psychological approaches mentioned above, rational choice or risk assessment perspectives are also useful. The HBM proposes to offer such an explanation utilizing health risk assessment strategies to ascertain those perceived risks that may deter individuals from what might be a socially positive practice.

What is the general relationship between knowledge, attitudes, beliefs, and intended or actual behavior? Ajzen and Fishbein's (1980) Theory of Reasoned Action argues that beliefs inform attitudes which, in turn, create behavioral intentions which predict human behavior. An existing body of research that explicates this process concerns attitudes and behaviors which point individuals toward health-protective (preventive) behaviors and/or away from risky health behaviors. The HBM suggests engaging in, or avoiding, these types of behaviors results from a calculation of risks associated with five factors. They argue that individuals comply with clinicians' recommendations and/or avoid risky behavior according to whether they believe:

1. They are susceptible to a detrimental health outcome.
2. The outcome to which they are susceptible is serious.
3. Complying with clinicians'/experts' recommendations reduces risk.

4. There are no significant barriers to compliance and/or avoiding risky behavior.
5. They possess sufficient self-efficacy with which to set and achieve their own goals.¹

Other researchers have examined the manner in which this theoretical model explains health-seeking and/or risky behavior. Much of this research includes, but is not limited to examining the extent to which subjects take explicit steps to avoid HIV infection and the degree to which subjects avail themselves to preventive measures such as yearly mammography. While HIV infection and breast cancer are potentially more immediately life threatening in comparison with the risks associated with tattooing, we contend that these studies offer us some insight into the processes that individuals undergo when making decisions about whether or not to engage in any risky health behaviors, particularly tattooing.

Fleisher, Senie, Minkoff, and Jaccard (1994) report that inner-city minority women were more likely to demand that their partners use condoms if the woman had previously been treated for an STD. This research suggests that women develop knowledge through their treatment experience, recognize their vulnerability, and are more likely to act on what they have learned in subsequent sexual behavior.

Kraft and Rise (1995) report subjects' attitudes toward AIDS policy are also strongly influenced by education and knowledge. The more educated their respondents were in general, the more they knew about the manner of AIDS transmission. Further, increased education seemed to shape respondents' attitudes toward AIDS policy. The more education one has, the less restrictive one's attitudes seem to be toward social policies directed toward preventing HIV infection (condom distribution, needle exchange, etc.).

¹This 5th component was suggested in Rosenstock et al.'s 1988 reconceptualization of the Health Belief Model. They argue that "... enhancement of self-efficacy will usually be required ... in the acquisition or modification of complex lifestyle practices, including those related to smoking, alcohol consumption and substance abuse, physical activity, and dietary habits" (Rosenstock et al. 1988, p. 182). We agree, and have included this variable in our work since we regard the decision to obtain or avoid tattooing to be a "complex lifestyle practice."

Neff and Crawford (1998) extend the logic of these studies by examining the extent to which males and females perceive alcohol use as a barrier to using good judgment when choosing HIV-preventive behavior. Data suggest males are more susceptible to risky sexual behavior after using alcohol than are (especially minority) females; females seem more likely to avoid alcohol in efforts to prevent compromising their judgment. Goh, Primavera, and Bartalini (1996) report that adolescents were less likely than others to engage in sex with multiple partners if they were knowledgeable about the risks of HIV infection. Further, adolescents who expressed intentions to use condoms also were more likely to actually do so when engaging in sexual activity. Basen-Engquist (1992), Laraque, McClean, Brown-Peterside, Ashton, and Diamond (1997), Lollis, Johnson, and Antoni (1997), McBride, Weatherby, Inciardi, and Gillespie (1999), and Petosa and Jackson (1991) report similar findings.

While the studies mentioned above focus their attention on subjects' avoidance of risky behavior based on their perceptions of risk, a second body of research indicates that the Health Belief Model is equally useful in predicting health-seeking (preventive) behavior. Ashing-Giwa (1999), Hyman, Baker, Ephriam, Moadel, and Philip (1994), and Thomas, Fox, Leake, and Roetzheim (1996), report varying degrees of success when applying components of the Health Belief Model to attitudes about and utilization of routine mammography. These studies have reasonably clear definitions of "disease" when using the Health Belief Model to examine attitudes and behaviors associated with subjects' perception of risk for HIV or breast cancer.

A third body of research examines the utility of the Health Belief Model to explain decision-making with regard to other types of social behavior. These include alcohol consumption (Minugh, Rice, and Young 1998), adolescent use of smokeless tobacco (Boyle, Claxton, and Forster 1997), general beliefs about public smoking (Ferraro 1990), and fertility control, particularly among adolescents (Condelli 1986; Eisen, Zellman, and McAlister 1992). In each case, subjects' beliefs about their susceptibility to injury, disease, or pregnancy, as well as the absence of barriers to using alcohol, tobacco, and contraceptive technology contributed to the likelihood they would engage in, or resist risky behavior.

Our work builds on these research agendas and applies the basic components of the HBM to tattooing—a behavior that is not so clearly understood as hazardous to one's health. This study uses the HBM to explain the degree to which the decision to get a tattoo is informed by one's knowledge and assessment of health risks. Our questionnaire seeks to ascertain the extent to which respondents have thought about, considered, planned to, or would actively avoid getting a tattoo. Respondents who were already tattooed indicated the extent to which fear of negative health consequences informed their decision to do so.²

For our purposes, "health belief" connotes the extent to which an individual believes a tattoo is hazardous to one's health, and "compliant behavior" is associated with not getting (or being particularly interested in) a tattoo. The basic theoretical model is summarized in Figure 1, below (Rosenstock et al. 1988; Weitz 2004).

Following below we report data and methods which were used in our report that the Health Belief Model adds to our understanding of the process by which individuals become interested in tattoos, consider getting a tattoo, and, in about one-fifth of our cases, obtain a tattoo.

DATA AND METHODOLOGY

The data were gathered from responses to questionnaires administered to undergraduate students in December of 1999. The students from various majors were enrolled in Sociology courses at a large, publicly supported state university situated in a largely rural part of the Southwest (N = 518). Participants were predominately female (70%), and Anglo (80%). Eleven percent were Hispanic; four percent were Black; five percent reported themselves as Other. Eighty-five percent were aged 18–22; 64% were first and second year college students. Sixty-nine percent came from a

²Since the Health Belief Model is based on a process of rational thinking, we find it useful to report the degree to which our respondents who were tattooed were thinking rationally at the time they obtained the procedure. One in ten of the 97 tattooed respondents who answered the question said they were "a little bit drunk" when they got their tattoo; 6 of the 95 tattooed respondents who answered the question said they were "high on drugs" when they got their tattoo. The overwhelming majority report they were neither drunk nor high.

People are most likely to comply when they:	Example: Not get a tattoo	Example: Get a tattoo
Believe they are susceptible:	College student worries that getting a tattoo raises the odds of chronic illness.	College student believes it is possible to obtain a tattoo safely.
Believe risk is serious:	Believes hepatitis and/or other blood-borne diseases are debilitating or fatal.	Believes risk is minimal if care is taken in choosing site.
Believes compliance reduces risk:	Believes that not getting a tattoo makes contracting above diseases unlikely.	Believes care in choosing site obviates risk.
No significant barriers to compliance:	Respondent experiences no social or family pressure to get a tattoo.	Respondent experiences social or family pressure to get a tattoo.
Possess sufficient self-efficacy to act autonomously when faced with social/family pressure:	Respondent chooses to not get a tattoo even when faced with social or family pressure to do so.	Respondent chooses to get a tattoo when faced with social or family pressure to do so.

FIGURE 1 The Health Belief Model applied to decision-making about tattoos.

hometown that was smaller than 200,000 inhabitants. The community and surrounding region are predominantly politically and religiously conservative (Roberts, Koch, and Johnson 2001). After the respondents signed the appropriate consent forms, they were asked a series of questions about their experience with tattoos, attitudes toward tattoos and people who are tattooed, as well as social background questions. The questionnaires were collected immediately; none in attendance refused to participate.

The questionnaire used in this study was based on a review of literature, field study, and the published work (Armstrong 1991; Armstrong and McConnell 1994; Armstrong and PaceMurphy 1997; Armstrong, Pace-Murphy, Sallee, and Watson 2000). These studies examined decision-making and health risk assessment among various groups of people with and without tattooing. From this previous work, questions were modified in order to conceptually relate to the key

variables in the Health Belief Model, and reworded to more specifically address the health-related concerns associated with tattooing. We measured "susceptibility" in terms of respondents' concerns about potential health problems or pain associated with the procedure itself and its aftermath. "Seriousness" was measured with regard for respondents' fears of contracting hepatitis, infections, or other systemic illness. "Compliance" was measured as a function of respondents' concerns for mitigating health risks by choosing the parlor carefully and by becoming fully informed as to the potential risks. "Barriers" was measured so as to account for the influence of peers and family members. This relates to our concern that socio-emotional risks must be weighed in this process as well as potential hazards to physical health. The instrument was pre-tested with a small sample of students ($n = 19$) who were similar to those from whom the data were gathered. The final questionnaire contained 134 questions. Respondents provided answers to multiple choice questions as well as Likert-type scale responses and short-answers to open-ended questions. Demographic information was also provided.

MEASUREMENT

There were three dependent variables. The first dependent variable was whether or not the respondent had tattoos. The question was: "How many tattoos do you have?" Response categories ranged from no tattoos to five or more tattoos. While more than 80% of the respondents (81.3%) did not have a tattoo, more than one in ten (13.1%) had one tattoo, 3.5% had two tattoos, and 2.2% had three or more tattoos.

The second dependent variable was interest in tattoos.³ The question was: "In your opinion, how likely are you to be

³We regard "interest in tattoos" as a useful variable in that the median age at which our tattooed respondents "first considered getting (their) first tattoo" was 16; the median age at which they "made the decision" to get their first tattoo was 18. This suggests the decision to do so was made with some deliberation and was not especially impulsive. This also suggests a substantial "interest" phase which precedes actually getting a tattoo. While the median ages we report here also suggest the time period might also be one during which 16-year-olds are prevented from actually getting a tattoo for lack of parental consent until they reach age 18, deliberation still occurs and we believe may be captured in those who express "interest" in tattooing on our questionnaire.

interested in tattoos?" The response categories were extremely unlikely, unlikely, somewhat likely, very likely, and definitely. A little more than one in five respondents were either extremely unlikely (21.2%) or unlikely (23.3%) to be interested in tattoos. One in three (33.1%) were somewhat likely to be interested in tattoos. More than one in ten (14.4%) were very likely to be interested in tattoos and 8.1% were definitely interested in tattoos.

The third dependent variable was likelihood of getting a tattoo or another tattoo. The question was: "In your opinion, how likely are you to get a (or another) tattoo?" The response categories were extremely unlikely, unlikely, somewhat likely, very likely, and definitely. More than one in three respondents (35.6%) were extremely unlikely to be interested in getting a (or another) tattoo. Slightly more than one in four respondents (27.1%) were unlikely to be interested in getting a (or another) tattoo. Approximately one-quarter of the respondents (24.4%) were somewhat likely to be interested in getting a (or another) tattoo. Almost nine percent (8.8%) of the respondents said that they were very likely to be interested in getting a (or another) tattoo. Four percent of the respondents said that they were definitely interested in getting a (or another) tattoo.

Five scales were developed to correspond to the five components of the Health Belief Model; these became the independent variables in the study.⁴ The first dimension was Susceptibility. This measured whether respondents believed that they were susceptible to disease from tattooing. Six questions comprised the Susceptibility Scale; its reliability coefficient was .720. The second dimension was Seriousness. This measured whether respondents believed that disease from tattooing was a serious threat. Five questions comprised the Seriousness Scale; its reliability coefficient was .729. The third dimension was Compliance. This measured whether respondents believed that not getting a tattoo or getting a tattoo under relatively safe conditions reduced the risk of disease. Eleven questions comprised the Compliance Scale; its reliability coefficient was .739. The fourth dimension was Barriers. This measured whether respondents were, or were

⁴The specific questions used to comprise these scales are reported in the Appendix.

not, subject to social or family pressure to get a tattoo. Eleven questions comprised the Barriers Scale; its reliability coefficient was .622. The fifth dimension was Self-efficacy. This measured the extent to which respondents possessed the autonomous ability to overcome social or family pressure to get a tattoo. Two questions comprised the Self-Efficacy Scale; its reliability coefficient was .611.

RESULTS

Table 1 presents the zero-order correlations of the three dependent variables and the five scales. Number of tattoos, interest in tattoos, and likelihood of getting a (or another) tattoo were all positively correlated. The strongest correlation between the dependent variables was .737 between interest in tattoos and the likelihood of getting a (or another) tattoo. All of the dependent variables were negatively correlated with all of the Health Belief Model scales except for number of tattoos and self-efficacy. The strongest correlations were between Barriers and interest in tattoos $-.550$ and Barriers and likelihood of getting a (or another) tattoo $-.541$. Another relatively strong correlation was between interest in tattoos and the Seriousness Scale $-.427$. All of the Health Belief Model scales were positively correlated except for the insignificant and inconsistent associations with self-efficacy. The strongest correlations were between the Susceptibility Scale and the Seriousness Scale (.660) and the Seriousness Scale and the Barriers Scale (.446). Most of the correlations were statistically significant. This initial analysis suggests that our understanding of tattooing behavior may be enhanced by examining how the components of the Health Belief Model inform respondents' decision-making.

Table 2 regresses number of tattoos, interest in tattoos, and interest in getting a tattoo on the Health Belief Model scales of Susceptibility, Seriousness, Compliance, Barriers, and Self-Efficacy. The usual control variables of gender, race and class (as measured by parental education) were not used because they were not significantly related to any of the measures of tattoos. Age was significantly related to tattoos. Older students were more likely to have tattoos but less interested in getting a (or another) tattoo.

TABLE 1 Zero-order Correction Coefficients between Variables Used in Analysis

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Number of tattoos	—	.425**	.255**	-.178**	-.310**	-.153**	-.301**	.097*
(2) Be interested in tattoos		—	.737**	-.319**	-.427**	-.187**	-.550**	-.063
(3) Get a (or another) tattoo			—	-.354**	-.382**	-.212**	-.541**	-.111*
(4) Susceptibility scale				—	.660**	.285**	.357**	-.015
(5) Seriousness scale					—	-.398**	.446**	-.068
(6) Compliance scale						—	.248**	.054
(7) Barriers scale							—	-.078
(8) Self-efficacy scale								—
Mean	0.280	2.650	2.190	19.335	11.757	47.471	36.587	8.254
Standard deviation	0.710	1.190	1.130	3.873	3.106	5.077	5.402	1.616
Number of cases	520	520	520	520	519	518	518	519

*P < .05 (two-tailed test); **P < .01 (two-tailed test).

TABLE 2 OLS Coefficients from the Regression of Number of Tattoos on Health Belief Model Scales of Susceptibility, Seriousness, Compliance, Barriers, and Self-Efficacy

Independent variables	Unstandardized coefficients	Betas
Susceptibility scale	0.001 (.010)	0.058
Seriousness scale***	-0.006 (.014)	-0.243
Compliance scale	-0.000 (.006)	-0.027
Barriers scale***	-0.003 (.006)	-0.203
Self-efficacy scale	0.003 (.018)	-0.066
Intercept***	1.631 (.348)	
Adjusted R ² ***	.128	
Number of cases	516	

Note: Standard errors are in parentheses.

***P < .001.

The two statistically significant relationships are between Seriousness and number of tattoos (Beta = -.243) and Barriers and number of tattoos (Beta = -.203). The more the respondent believed that disease from a tattoo was a serious threat, the less likely that he or she was tattooed. The less pressure that the respondent was subject to from family and friends to get a tattoo, the less likely that he or she was

TABLE 3 OLS Coefficients from the Regression of Interest in Tattoos on Health Belief Model Scales of Susceptibility, Seriousness, Compliance, Barriers, and Self-Efficacy

Independent variables	Unstandardized coefficients	Betas
Susceptibility scale	-0.000 (.015)	-0.011
Seriousness scale***	-0.009 (.020)	-0.240
Compliance scale	0.000 (0.009)	0.033
Barriers scale***	-0.101 (0.09)	-0.456
Self-efficacy scale**	-0.009 (.026)	-0.121
Intercept***	7.869 (.506)	
Adjusted R ² ***	.354	
Number of cases	516	

Note: Standard errors are in parentheses.

**P < .01.

***P < .001.

TABLE 4 OLS Coefficients from the Regression of Getting a (or Another) Tattoo on Health Belief Model Scales of Susceptibility, Seriousness, Compliance, Barriers, and Self-Efficacy

Independent variables	Unstandardized coefficients	Betas
Susceptibility scale**	-0.004 (.014)	-0.124
Seriousness scale*	-0.004 (.019)	-0.104
Compliance scale	0.000 (0.009)	0.010
Barriers scale***	-0.010 (0.008)	-0.461
Self-efficacy scale***	-0.111 (.025)	-0.159
Intercept***	7.897 (.482)	
Adjusted R ² ***	.348	
Number of cases	516	

Note: Standard errors are in parentheses.

*P < .05.

**P < .01.

***P < .001.

tattooed. The five Health Belief Model scales explain 12.8% of the variation in number of tattoos.

Table 3 regresses interest in tattoos on the Health Belief Model scales of Susceptibility, Seriousness, Compliance, Barriers, and Self-Efficacy. The three statistically significant relationships are between Seriousness and interest in tattoos (Beta = -.240), Barriers and interest in tattoos (Beta = -.456), and Self-Efficacy and interest in tattoos (Beta = -.121). The more the respondent believed that disease from a tattoo was a serious threat, the less likely that he or she was interested in tattoos. The less pressure that the respondent was subject to from family and friends to get a tattoo, the less likely that he or she was interested in tattoos. The higher the respondent's self-efficacy, the less likely that he or she was interested in tattoos. The five Health Belief Model scales explain 35.4 % of the variation in interest in tattoos.

Table 4 regresses likelihood of getting a (or another) tattoo on the Health Belief Model scales of Susceptibility, Seriousness, Compliance, Barriers, and Self-Efficacy. The four statistically significant relationships are between Susceptibility and likelihood of getting a (or another) tattoo (Beta = -.124), Seriousness and likelihood of getting a (or another) tattoo

(Beta = $-.104$), Barriers and likelihood of getting a (or another) tattoo (Beta = $-.461$), and Self-Efficacy and likelihood of getting a (or another) tattoo (Beta = $-.159$). The more the respondent believed that he or she was susceptible to disease from tattooing, the less likely that he or she was to get a (or another) tattoo. Respondents who believed that disease from tattooing was a serious threat were less likely to get tattoos. The more a respondent believed family and friends would react negatively to their doing so, the less likely he or she would get a (or another) tattoo. The higher the self-efficacy of the respondent, the less likely that he or she would get a (or another) tattoo.

Taken together, the five Health Belief Model scales explain 34.8% of the variation in likelihood of getting a (or another) tattoo. Thus, the Health Belief Model is a useful indicator of the process by which individuals weigh the constraints and risks versus the enticements and rewards of becoming tattooed.

DISCUSSION AND CONCLUSIONS

We began this research project seeking to examine the nature of decision-making with regard to tattooing. In addition to more social psychological approaches considering tattooing from both deviance and identity perspectives, a great deal of previous literature indicates that the Health Belief Model explains the extent to which individuals engage in health-protective behavior, comply with medical directives, and avoid behavior which is perceived to be risky to health. We have suggested here that expressing interest in tattoos, being tattooed, and getting a (or another) tattoo is partially dependent upon the social milieu in which the individual exists and also upon the same rationale as is used with other health-seeking behaviors.

We would draw several initial conclusions from our work. First, the five components of the Health Belief Model do, in aggregate, explain a significant degree of the variation we see in decision-making about tattoos (13% to 35% on our dependent variables).

Second, the Barriers component of the HBM seems most robust on all counts. The way we have framed the Barriers scale, it seems the more that respondents' family and peers

denigrated tattoos and tattooing, the less likely our respondents were to be so inclined to get one. Moreover, the converse is also the case. Getting a tattoo, or exploring the possibility of doing so become more likely if the people around us see tattoos in a more favorable light. Our use of the Health Belief Model acknowledges the power of primary social relationships, and this study offers empirical evidence that individuals take family and peer influence seriously when contemplating getting a tattoo.

Third, the addition of Self-Efficacy to the model bolsters this claim. The more our respondents believed themselves to be in control of their own behavior — at least to the extent that they would not consider getting tattooed because of peer influence — the less likely they were to be interested in tattoos, or get a (or another) tattoo. Again, the converse was also the case.

Finally, the Compliance component of the HBM was not a significant predictor of any of our dependent variables. Those who were tattooed, interested in tattoos, or would likely get a (or another) tattoo were equally concerned with the safety issues associated with the process as were those who had no interest or intent whatsoever.

This research adds to the current literature in at least two ways. First, it adds tattooing to the types of behavior at least partially explained by the rational process of decision-making outlined in the Health Belief Model. Second, it adds some empirical verification of the theoretical models developed by Simmel (1950) and Lyman and Scott (1970) and to more recent qualitative research (Irwin 2001; Velliquette and Murray 2002), which suggests that tattooing is a method of self-expression that helps individuals form and negotiate the meaning of their identity within a desired subculture. When our respondents reported family and peer influence which favors tattooing, they were more likely than others to be interested in tattoos.

Given what we report with regard to health belief attitudes and peer and family influence it seems clear that motivations behind tattooing may be more complex than we once thought. Future research may attempt to ferret out the degree to which each of these components influence individual decisions regarding tattooing. Individuals base a decision to get a tattoo on the norms which emerge from

their association with significant others. Additionally, we learn to care for our health based on what we know from what others around us have done, to greater or lesser degrees of safety and danger. More accurately pinpointing the social location from which our health beliefs emerge adds to the precision with which we continue to analyze changing trends in social behavior. Finally, this study advances the utility of the Health Belief Model. Getting a tattoo is less risky to physical health than is using a dirty needle to inject illegal drugs. It is probably less risky than smoking cigarettes or even neglecting an annual mammogram. But the varied components of the HBM illustrate that deciding to get a tattoo is a complex and deliberative process that accounts for physical as well as socio-emotional risks. Other researchers may wish to explore this approach to other types of issues such as changing jobs or getting a divorce.

We would clearly outline the limitations of this study. Our respondents comprise what is essentially a convenience sample of undergraduate students at one particular university. However, the respondents are of a generation likely to be tattooed and exposed to positive images of tattooing in popular culture. Even so, we make no further generalization of these results to any other group. Clearly, a probability sample would enable us to be more definitive about these findings. Nonetheless, we believe we surveyed a sufficient number of individuals who make independent decisions to learn something of the rationale with which they make them.

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APPENDIX

The Independent Variables (Components of the *Health Belief Model*)

1. **Susceptibility:** This measured whether the respondents believed that they were susceptible to disease from tattooing. (Reliability coefficient of .720.)

In your opinion, how likely are you to get a (or another) tattoo if . . .

It will very likely cause you health problems?

You would encounter some risks?

You would bleed during the procedure?

The tattoo area would be sun sensitive?

You would develop skin irritation at or around the tattoo?

You would develop allergies to the tattoo pigment?

Strongly agree, agree, uncertain, disagree, and strongly disagree.

2. **Seriousness:** This measured whether the respondent believed that disease from tattooing was a serious threat. (Reliability coefficient of .729.)

In your opinion, how likely are you to get a (or another) tattoo if . . .

You could contact hepatitis (infection of the liver) from tattooing?

You would develop an infection?

You would have recurrent enlarged lymph nodes close to the tattoo?

To what extent, in your opinion, would the risk of hepatitis or other infection or disease stop you from getting a (or another) tattoo?

Strongly agree, agree, uncertain, disagree, and strongly disagree.

3. **Compliance:** This measured whether the respondent believed that not getting a tattoo or getting a tattoo under relatively safe conditions reduced the risk of disease. (Reliability coefficient of .739).

In your opinion, how important is it that...

The tattoo studio be clean?

The tattoo artist explain everything to you?

The tattoo studio/artist be recommended?

The tattoo studio have appealing advertising?

Imagine for a moment that you might consider getting a tattoo, how important is it that you:

Shop around for a tattoo artist/studio?

Watch another procedure before yours is done?

Have friends with you when you get tattooed?

Find a tattoo artist that you know?

Know about the health problems and risks?

Take plenty of time for your decision?

Consider the amount of stress in your life?

Very important, important, not sure, unimportant, and very unimportant.

4. **Barriers:** This measured whether the respondent was or was not subject to social or family pressure to get a tattoo. (Reliability coefficient of .622).

Identify all individuals in your immediate family that have a tattoo.

Fathers, mothers, brothers, sisters, aunts and uncles, and grandparents were listed.

Think for a moment of your five closest friends with whom you have social and recreational life.

How many of these friends have tattoos?

In your opinion, how likely are you to get a (or another) tattoo if ...

You have friends with tattoos?

You have family members with tattoos?

You would get negative comments from family?

You would get negative comments from the public?

In your opinion, if you get a (or another) tattoo, it's because you wanted to be part of a group.

To what extent, in your opinion, would your friends stop you from getting a (or another) tattoo?

To what extent, in your opinion, would your parents stop you from getting a (or another) tattoo?

To what extent, in your opinion, would your significant other stop you from getting a (or another) tattoo?

Strongly agree, agree, uncertain, disagree, and strongly disagree.

Imagine for a moment that you might consider getting a tattoo, in your opinion, how important is it that you have positive comments from your friends?

Very important, important, not sure, unimportant, and very unimportant.

5. **Self-Efficacy:** This measured the extent to which respondents possessed the autonomous ability to overcome social or family pressure to get a tattoo (Reliability coefficient of .611).

In your opinion, if you get a (or another) tattoo, it's because you wanted to be part of a group?

In your opinion, if you get a (or another) tattoo, it's because your friends suggested it?

Strongly agree, agree, uncertain, disagree, and strongly disagree.