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Showing Skin: Tattoo Visibility Status, Egalitarianism, and Personality are Predictors of Sexual Openness Among Women

Kaylee Skoda¹ · Flora Oswald² · Kailie Brown¹ · Cassandra Hesse³ · Cory L. Pedersen¹

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Abstract

Research indicates that women with tattoos are evaluated more negatively than women without tattoos on numerous qualities. Further, men perceive better chances for sexual success with tattooed women than those without visible tattoos. Despite these findings, less is known about whether women with visible tattoos *are* more open to casual sexual encounters than their non-tattooed counterparts, and if so, what variables may predict such openness. The purpose of the present study was to explore whether, and to what extent, stereotyped perceptions of tattooed women as sexually open are accurate, and to explore the possible role of egalitarianism in sexual openness. Measures of personality and sensation-seeking were also examined. A sample of 814 women, both tattooed and non-tattooed, were recruited through a Western Canadian university research pool and various social media outlets to complete an online questionnaire assessing these attributes. Women with tattoos reported greater willingness to engage in uncommitted sexual relations, as well as higher endorsement of egalitarianism and sensation-seeking, relative to non-tattooed women. Among tattooed women alone, several personality and tattooing variables predicted sexual openness. Findings suggesting body tattooing as an indicator of sexual openness are critically discussed in relation to contemporary stereotypes surrounding femininity and sexuality.

Keywords Tattoos · Egalitarianism · Personality · Sexual permissiveness · Sexual openness

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Introduction

In recent decades, tattoos have become an increasingly popular artistic platform for expressing one's identity. Being "inked" has become an embodied approach to protesting mainstream society—whether intentional or not—with prominence across North America, Europe, and Japan (Guéguen 2012; Swami and Furnham 2007). In North America, an estimated 20–30% of individuals over 18 years of age report having at least one tattoo and between 10 and 20% have two or more (Blanton 2014; Ipsos Reid 2012; Laumann and Derick 2016; Shannon-Massal 2016). Popular motivations for getting tattooed include attempts to express oneself, to appear unique, to create beauty and art, or to celebrate an idea or person one appreciates (Atkinson and Young 2001; Hill et al. 2016; Wohlrab et al. 2007a, b).

Despite the current widespread popularity of tattoos, it is not uncommon in Western cultures for tattooed individuals to be recipients of a swathe of negative implicit and explicit perceptions (e.g., Dickson et al. 2014; Larsen et al. 2014; Seiter and Hatch 2005; Zestcott et al. 2018). Historical associations of tattoos with sailors and other working-class members (Sanders 1988), as well as deviant groups such as motorcycle bikers, gang members, and prisoners (Kosut 2006; Wohlrab et al. 2007a, b) have positioned the tattoo as a provocative cultural marking. The punk and gay movements of the 1980's further pitted the tattoo against mainstream society, using body modification as a mark of protest against middle-class, conservative norms (Pitts 2003; Wohlra et al. 2007a, b).

Though tattoos are now increasingly prevalent and no longer confined to the bodies of distinct cultural groups or social classes, mainstream reactions to tattoos appear to have retained a sense of their historical roots; tattoos are typically associated with stereotypically negative behaviors such as aggression, violence, and crime (Broussard and Harton 2018; Durkin and Houghton 2000; Laumann and Derick 2016; Zeiler and Kasten 2016) as well as with a perception of decreased credibility (Seiter and Hatch 2005), decreased attractiveness, and increased promiscuity (Swami and Furnham 2007).

Certainly, the prevalence of tattoo popularity over the last several decades has revealed a dramatic shift in tattoo stigma, particularly in recent years, however this has been primarily toward tattooed males (Hawkes et al. 2004). Greater social acceptance and popularity have now been granted to many men with visible tattoos—a revolution not yet experienced by visibly tattooed women (see Baumann et al. 2016; Westerfield et al. 2012). Indeed, cultural historians posit that tattooed women generally have long been judged more negatively than either men or their non-tattooed, female counterparts (DeMello 2000; Gray 1994). Arguably, many of the negative connotations associated with tattooed women date back to the late nineteenth century, when women who pursued careers as burlesque dancers or circus attractions would tattoo themselves, dress scantily, and act unconventionally relative to their expected gender role, rendering them rebels—and pariahs—of their time (Braunberger 2000; Gray 1994). While a small collection of tattoo-sporting Victorian women were certainly positively embraced—acknowledged

as courageous and noble and perceived as attractive and appealing—such was a privilege enjoyed primarily among the upper classes (Armstrong 1991; Miffin 1997).

Though women sport about half of all tattoos worn today (King and Vidourek 2013; Laumann and Derick 2016; Stieger et al. 2010), contemporary cultural perceptions of tattooed women in the twenty-first century remain largely negative. For instance, Degelman and Price (2002) found that a coloured photograph of a young woman with a black tattoo on her left upper arm was rated lower on measures of athleticism, attractiveness, motivation, honesty, generosity, religiosity, intelligence, and artistic ability than the same photographed woman with no tattoo. Comparably, Seiter and Hatch (2005) reported that a female model with a tattoo was rated as less competent and sociable than the same target without a tattoo. Though perceptions may be evolving—more recently, Broussard and Harton (2018) found that women with tattoos were rated as stronger and more independent than women without tattoos—these same tattooed women were nonetheless rated broadly as having more negative characteristics overall.

The available evidence further indicates that tattoo number, visibility, and size are factors contributing to perceptions of tattooed women. Swami and Furnham (2007) asked participants to rate 16 female line drawings with varying degrees of tattooing and noted that both men and women rated the more heavily tattooed drawings as less attractive and more sexually open. Additionally, in a mixed-gender sample, Hawkes et al. (2004) determined that the larger and more visible a woman's tattoo, the more negative the overall perception of the wearer. Finally, Guéguen (2013) found in an experimental field study that men perceived better chances of casual sexual success with—and were more likely to approach and express their sexual intent toward—a visibly tattooed female compared to one without a visible tattoo. Notably, the sexual orientation of these men was not reported; the assumption of these men's heterosexuality permeates the claims made by this work.

Taken together, these findings suggest a relationship between tattoos and perceptions of women as sexually open, with heavier and more visible tattooing apparently indicating greater sexual openness. We find it important to briefly articulate here our own positioning in relation to the discourse of sexual openness. As sex-positive researchers, we do not intend to stigmatize or provide commentary on women's sexual behaviors. Rather, we utilize the terminology of sexual openness—herein defined as the tendency to have casual, uncommitted sexual relationships—throughout this work in the reporting of previous research. Neutral articulation is challenged both by historical constraints and biases pertaining to women's sexuality (e.g., gendered constructions of sexual openness as promiscuity), as well as our own sex-positive perspectives. The suggested relationship between tattooing and perceptions of women as sexually open is possibly the result of historical holdover; that is, because of the historical association between deviance and tattoos, contemporary tattoos may continue to be associated with deviance and, particularly for women, sexual deviance—an area where stigma has yet to recede from its historical precedent. Women who are open to casual sex with men continue to be stigmatized and viewed as aberrant in contemporary cultures (e.g., Farvid et al. 2017; Marks et al. 2019; Muggleton et al. 2019). Indeed, ongoing cultural endorsement of the sexual

double standard may explain why contemporary tattooed males have been able to achieve greater social acceptance than their female counterparts (Baumann et al. 2016; Westerfield et al. 2012).

Feminist theorists suggest that women who display large, visible tattoos may be explicitly claiming their bodies as their own, reinforcing their identities as well as exerting power and control (e.g., Atkinson 2002; Hardin 1999); as noted, tattooed women are perceived by mixed-gender samples as stronger and more independent than women without tattoos (Broussard and Harton 2018). The finding that heterosexual men tend to hold negative attitudes toward strong and powerful females, and prefer powerless and submissive women (e.g., Cashdan 1995; Meier and Dionne 2009; Rudman and Glick 2001; Rudman and Kilianski 2000) may account for why men hold negative attitudes toward women with tattoos (Resenhoef et al. 2008; Singer 1993).

Or perhaps, as argued in evolutionary psychology—where (assumedly heterosexual) men typically use physical attributes to evaluate potential short-term or long-term mates—the presence of tattoos serves as a signal for sexual intent and openness. This supposition is evidenced by the popularly reported body modification motivations of beauty and sexual attraction, whereby women (and some men; inclusive gender and sexual orientation data is not available) utilize body modifications to emphasize their body and sexuality (e.g., Armstrong et al. 2006; Wright 1995; see Wohlrab et al. 2007a, b for review). It is possible that this motivation may have bred, or may have resulted from, a cultural association of tattooing with sexualization; evolutionary psychological perspectives argue that by selecting a female mate with a tattoo, a heterosexual man may therefore perceive increased odds of achieving sexual success (Botwin et al. 1997; Guéguen 2013).

While such theories help to provide insight into third party perceptions of tattooed women, as well as to provide potential explanations for the origin of such stereotypes, they provide few answers regarding the individual characteristics of the women who willingly enter a lifelong commitment of being “inked”. Those who voluntarily embrace the possible negative cultural stereotypes that come with wearing tattoos may arguably differ in various personality or ideological attributes than those who remain ink-free.

Studies examining the possible correlations of tattooed individuals relative to their non-tattooed counterparts have revealed more similarity than difference between the tattooed and non-tattooed in aspects of agreeableness, conscientiousness, and openness (e.g., Swami et al. 2012), while findings pertaining to neuroticism remain mixed and have demonstrably small effect sizes (Pozgain et al. 2004; Swami et al. 2012), suggesting few real world implications (Tate and Shelton 2008). Further, various studies have found tattooed individuals to be higher in extraversion and related traits, such as sensation-seeking (Copes and Forsyth 1993; Drews et al. 2000; Roberti et al. 2004; Stirn et al. 2006; Swami 2012; Swami et al. 2012; Wohlrab et al. 2007a, b), while others report no significant differences of such personality traits in between-group analyses (Forbes 2001; Tate and Shelton 2008). Overall, however, much of the available evidence appears to suggest higher extraversion on the part of tattooed individuals—a difference driven by scores on sensation seeking (Swami et al. 2012). Importantly, the individual variables of extraversion,

sensation-seeking, and tattoo wearing have been linked to heightened sexual risk-taking and sexual engagement among women in general (e.g., Hoyle et al. 2000; Markey et al. 2003; Miller et al. 2004), suggesting that these variables are potentially influential in the relationship between tattooed women's behaviours and acceptance of sexual openness.

Although existing research has examined various personality links between women who have tattoos and women who do not, there nonetheless remain gaps in the extant research; one, for instance, is whether any stereotypes of tattooed women are empirically founded. Further, an important attribute that may tie the prevailing findings together is that of gender-role ideology, and particularly, the role of egalitarianism. Tattoos are typically deemed a man's activity (e.g., DeMello 2000); tattooed females represent gender-role violators (Dickson et al. 2014) and indeed, sociological studies have suggested that women may use tattoos to signal their non-traditional femininity and defiance of traditional roles (e.g., Atkinson 2002; Hardin 1999). Thus, the relationship between tattoos and egalitarianism as predictors of sexual openness remain unexplored. Perhaps the underlying link between tattoos and sexual openness is not ink at all, but rather, the result of a more egalitarian belief system.

Focus of the Present Study

The purpose of the present study was to explore whether, and to what extent, stereotyped perceptions of tattooed women as sexually open (i.e., tending to have casual, uncommitted sexual relationships) are accurate, and the influence of egalitarianism on tattooed women's sexual openness. Apart from Swami (2012), who found that adults of both genders with tattoos reported greater willingness to engage in sexual relations without commitment, little research has explored whether stereotypes surrounding tattooed women's sexuality are accurate; that is, whether women with tattoos truly *are* more sexually open than their non-tattooed counterparts, as suggested by prevalent stereotypes. Further, to our knowledge, no research has explored the relative contributions of gender-role ideology and tattooing to sexual openness. Lastly, the present study also explores, for the first time, the relationship between women's tattoo number, general tattoo visibility, and sexual openness.

Given previous equivocal research, additional measures were included to provide a robust understanding of the various attributes that may also be associated with sexual openness and a woman's decision to have their skin tattooed, including extraversion, neuroticism, and sensation-seeking (see Burger and Finkel 2002; Copes and Forsyth 1993; Dickson et al. 2014; Drews et al. 2000; Roberti et al. 2004; Stirn et al. 2006; Swami 2012; Swami et al. 2012; Wohlrab et al. 2007a, b). A measure of religiosity was included as a control variable, as previous research has demonstrated negative correlations between religiosity and sexual openness (Rowatt and Schmitt 2003; Schmitt and Fuller 2015).

The current study consolidates the findings of previous research on tattoo-wearing and various facets of female sexuality by evaluating these in conjunction with egalitarianism for the first time. Further, to our knowledge, no previous

research has examined whether women with tattoos are as sexually open as both men and women anticipate; as such, the present study was considered exploratory in nature, and guided by several research questions. First, we explored whether women with tattoos reported greater sexual openness than their non-tattooed counterparts. Next, we questioned how the variables of sexual openness and personality (e.g., extraversion, neuroticism, sensation-seeking) differentiate tattooed from non-tattooed women—and among these variables, which best account for the variability of sexual openness among women. Finally, we examined whether tattoo variables, such as tattoo number and placement status, predict additional variance in female sexual openness among tattooed women only.

Methodology

Participants

The sample was comprised of 814 female participants ranging in age from 16 to 66 years ($M_{age} = 25.36$; $SD_{age} = 8.30$). Participants were recruited from the psychology research participant pool at a sizeable Western Canadian university and via snowball sampling through several online forums including Twitter, Facebook, and several online research participant recruitment sites.

The number of tattoos reported by tattooed participants ($n = 391$; 48% of the current sample) ranged from 1 to as many as 16 ($mode = 1$; $M = 3.24$; $SD = 2.77$). Among tattooed women, 32% indicated having one tattoo and 68% indicated having more than one. Regarding tattoo placement, participants were asked to indicate the location of their tattoos (i.e., visible or nonvisible placement) and the number of tattoos for each. In our sample, 88% of tattooed participants reported having at least one tattoo positioned in a location observable to others (i.e., “visible” tattoos) such as on the neck, hands, forearms, or calves ($mode = 1$; $M = 2.36$; $SD = 2.14$), while 54% of participants reported having at least one tattoo positioned in locations not generally observable to others (i.e., “nonvisible”) including the genitals, breasts, ribs, spine, and lower back ($mode = 0$; $M = 0.88$; $SD = 1.10$). Additionally, 42% of participants reported having both visible and nonvisible tattoo placements, resulting in percentages for visibility and nonvisibility exceeding 100%.

An independent samples t-test revealed that women with tattoos were significantly older ($M_{age} = 27.50$; $SD_{age} = 8.60$) than their non-tattooed counterparts ($M_{age} = 23.39$; $SD_{age} = 7.50$), $t(812) = -7.27$, $p < 0.001$. Further, chi square analyses indicated significant differences in reported ethnicity, $\chi^2(6, N = 814) = 81.22$, $p < 0.001$, sexual orientation, $\chi^2(3, N = 814) = 28.23$, $p < 0.001$, highest level of completed education, $\chi^2(5, N = 814) = 42.77$, $p < 0.001$, and relationship status, $\chi^2(5, N = 814) = 24.09$, $p < 0.001$. Demographic information of participants by tattoo status are found in Table 1.

Table 1 Distribution of demographic characteristics by tattoo status

	Tattooed women <i>n</i> = 391	Nontattooed women <i>n</i> = 423
Age	<i>M</i> = 27.50 (<i>SD</i> = 8.60)	<i>M</i> = 23.39 (<i>SD</i> = 7.50)
Sexual orientation		
Straight	251 (64.2%) _a	329 (77.8%) _b
Gay	18 (4.6%)	12 (2.8%)
Bisexual	119 (30.4%) _a	70 (16.5%) _b
Asexual	3 (0.8%) _a	12 (2.8%) _b
Relationship status		
Single	100 (25.6%) _a	168 (39.7%) _b
Casually dating	60 (15.3%) _a	45 (10.6%) _b
Non-marital committed relationship	157 (40.2%)	159 (37.6%)
Married/common-law union	63 (16.1%) _a	47 (11.1%) _b
Separated/divorced	10 (2.6%)	4 (0.9%)
Widowed	1 (0.3%)	0 (0%)
Ethnicity		
Caucasian	291 (74.4%) _a	208 (49.29%) _b
Indian/South Asian	22 (5.6%) _a	111 (26.2%) _b
Asian/Pacific Islander	32 (8.2%) _a	56 (13.2%) _b
Black	7 (1.8%)	6 (1.4%)
Hispanic	14 (3.6%)	13 (3.1%)
First nations/aboriginal	5 (1.3%)	2 (0.5%)
Other identification	20 (5.1%)	27 (6.4%)
Education		
Some high school	5 (1.3%) _a	20 (4.7%) _b
Completed high school	38 (9.7%) _a	82 (19.4%) _b
Some undergraduate	188 (47.6%)	219 (51.8%)
Completed undergraduate	108 (27.6%) _a	77 (18.2%) _b
Vocational degree/certificate	21 (5.4%) _a	8 (1.9%) _b
Graduate school or above	33 (8.4%) _a	17 (4.0%) _b

Columns with differing subscripts are significantly different, $p < .05$

Materials and Measures

Demographics

Participants were asked to respond to a five-item questionnaire regarding their age, ethnicity, sexual orientation, relationship status, and highest level of completed education.

Centrality of Religiosity Scale (CRS; Huber and Huber 2012)

The CRS is a measure of the importance, or centrality, that religion plays in an individual's life. It contains five questions regarding the general intensities of five core dimensions of religiosity rated on a five-point Likert scale ranging from 1 (*never*) to 5 (*very often*), and includes items such as, "how often do you experience situations in which you have the feeling that God or something divine intervenes in your life?" and "how often do you pray?". Previous research utilizing the CRS has displayed strong internal consistency and reliability (see Everett et al. 2016). In the present study, the CRS had a strong alpha coefficient of $\alpha = .88$.

Body Image Tattoo Indicator

Designed for the purposes of the present study, an anatomically correct body tattoo location image provided participants the opportunity to indicate where and how many tattoos are worn on different parts of the body (if any). Tattoos were independently coded by five research team members as either "visible" (i.e., observable to others though clothed in mid-thigh length shorts and a tank top) or "nonvisible" (i.e., not observable when clothed) in terms of placement status. Kendall's coefficient of concordance was $W = .82$, $\chi^2 = 75.33$, $p < .001$, indicating very high agreement among coders.

Revised Sociosexual Orientation Inventory (SOI-R; Penke and Asendorpf 2008)

The SOI-R is a nine-item measure that assesses sexual openness, also referred to as orientation toward uncommitted sex, across three facets of behaviour, attitude, and desire. The three-item behaviour subscale is measured on a scale ranging from 0 (*no partners*) to 4 (*8 or more partners*) and includes items such as "With how many different partners have you had sexual intercourse on *one and only one* occasion?" The three-item attitude subscale is measured on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*) and includes items such as "I can imagine myself being comfortable enjoying 'casual' sex with different partners". The three-item desire subscale is measured on a scale from 0 (*never*) to 5 (*nearly every day*) and includes items such as "How often do you experience sexual arousal when you are in contact with someone with whom you do *not* have a committed romantic relationship?" A global sociosexual orientation score is then computed, with higher scores reflecting greater willingness to engage in uncommitted sexual relationships. Previous research utilizing this measure has displayed strong validity and reliability (see Randler et al. 2016). In the present study, a strong coefficient alpha of $\alpha = .90$ for the global sociosexual orientation score was established.

Eysenck Personality Questionnaire Brief Version (EPQ-BV; Sato 2005)

The EPQ-BV contains 24 items which measures the two primary personality traits of extraversion and neuroticism postulated by Eysenck and Eysenck (1992) to most robustly explain individual differences in personality. The scale instructs

respondents to indicate the extent to which they agree or disagree with questions pertaining to their level of extraversion (12 items) and neuroticism (12 items) on a 5-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). In terms of reliability, the EPQ-BV consistently produces alpha coefficients between .90 and .92 (Pedersen et al. 2015; Sato 2005). Previous assessments of this measure have found evidence for high internal consistency and test–retest reliability, as well as a relatively robust factor structure (Sato 2005). Cronbach's alphas in the present study were .92 for the extraversion subscale and .89 for the neuroticism subscale.

Need Inventory of Sensation Seeking (NISS; Roth and Hammelstein 2011)

The NISS contains 17 items that evaluate an individual's need for novelty or excitement. Participants evaluate their attitudes and behaviours over a period of 6 months using a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*), with higher scores indicating a greater need for sensation seeking. The NISS consists of two subscales, one which measures respondents' "need for stimulation" (NS; 11 items) and the other which measures "avoidance of rest" (AR; 6 items). Since the NS subscale is recommended as a gauge for global sensation seeking (Champion and Pedersen 2015; Roth et al. 2007), only this subscale was used in the present study, with a computed internal consistency reliability at $\alpha = 0.88$.

Gender Role Belief Scale Shortened Version (GRBS-SV; Brown and Gladstone 2012)

The GRBS-SV contains 10 items that assess participants' beliefs about the role of women in the household and workplace, in addition to perceptions of chivalry and protection. Scores range on 7-point scale from 1 (*strongly agree*) to 7 (*strongly disagree*) to provide a total score, where higher scores indicate more egalitarian gender role beliefs. Items include questions such as, "Women should have as much sexual freedom as men" and "Swearing and obscenity is more repulsive in the speech of a woman than a man". Brown and Gladstone report that the GRBS-SV has strong internal consistency and strong test–retest reliability. In the present study, the GRBS-SV produced a Cronbach's alpha of $\alpha = 0.75$.

Procedures

Upon receiving approval from the research ethics board of a large Western Canadian university, this study was presented to participants as an assessment of whether certain personality characteristics—in addition to the wearing of tattoos—are predictors of sexual openness. All participants were directed to an anonymous online survey site using the survey software Qualtrics and were presented with site content in the same order. Study information and consent were presented first, followed by demographics, the religiosity questionnaire, the body image tattoo indicator, and the dependent measures of sexual openness, extraversion/neuroticism, sensation-seeking, and egalitarianism. A debriefing page was presented last. University student participants completed the survey in exchange for course credit in specified

psychology classes. Non-university participants were not provided incentive to participate. The entire study took participants approximately 30 min to complete.

Results

This study employed three separate one-way (tattoo versus no tattoo), between-groups ANCOVAs—controlling for religiosity and age—on the dependent variables of sexual openness, sensation-seeking, and egalitarianism. As well, zero-order correlations examined how the variables of tattoo wearing, sexual openness, extraversion, neuroticism, sensation-seeking, and egalitarianism relate. Based on these findings, two separate multiple regression analyses were employed—one for participants without tattoos and one for tattooed women—to examine best predictors of sexual openness.

Analyses of Differences Between Tattooed and Non-tattooed Women

Separate one-way univariate analyses of covariance were conducted to examine differences between tattooed and non-tattooed women on the dependent variables of sexual openness, sensation-seeking, and egalitarianism. After controlling for religiosity and age, a statistically significant effect of group was found for sociosexual orientation, $F(1, 809) = 105.42$, $p < 0.001$, $partial \eta^2 = 0.12$, with tattooed women reporting a more unrestricted (or sexually open) orientation ($M = 23.77$; $SE = 0.38$) than their non-tattooed counterparts ($M = 18.25$; $SE = 0.36$). A statistically significant effect of group was also found for global sensation-seeking, $F(1, 810) = 26.14$, $p < 0.001$, $partial \eta^2 = 0.03$, with tattooed women reporting greater sensation-seeking needs ($M = 38.73$; $SE = 0.42$) than non-tattooed women ($M = 35.66$; $SE = 0.40$). Finally, a significant effect of group was found for egalitarianism, $F(1, 810) = 12.76$, $p < 0.001$, $partial \eta^2 = 0.02$, with tattooed women reporting higher endorsement of egalitarian beliefs ($M = 53.58$; $SE = 0.41$) than women without tattoos ($M = 51.56$; $SE = 0.39$).

Correlations and Multiple Regression Analysis

Results of the correlational analysis presented in Table 2 illustrate that several significant relationships were found. Tattoo number was significantly positively correlated to a sexually open sociosexual orientation, as were both tattoo visibility and nonvisibility placement status. Further, tattoo number, visibility, and nonvisibility were each significantly positively related to sensation-seeking. Further, tattoo number and tattoo visibility were both significantly positively related to egalitarian gender-role beliefs. Sexual openness was associated with greater extraversion, greater sensation-seeking, and a higher endorsement of gender-role egalitarianism—while significantly negatively related to the personality variable of neuroticism. As expected given previous research (e.g., Ahrold and Meston 2010; Murray et al. 2007), a significant negative relationship was found between sexual openness

Table 2 Correlations among dependent, covariate, and predictor variables

Measures	1	2	3	4	5	6	7	8	9	10
1. Sexual openness	–									
2. Age	.28**	–								
3. Religiosity	-.43**	-.01	–							
4. Total number of tattoos	.34**	.26**	-.08*	–						
5. Number of visible tattoos	.39**	.26**	-.15**	.85**	–					
6. Number of nonvisible tattoos	.37**	.28**	-.11**	.67**	.58**	–				
7. EPQ (extraversion)	.16**	.04	.12**	.05	.04	.11**	–			
8. EPQ (neuroticism)	-.08*	-.22**	.03	-.03	.00	-.12**	-.27**	–		
9. Sensation-seeking	.32**	-.10**	-.02	.08*	.12**	.10*	.30**	.07*	–	
10. Egalitarianism	.31**	-.01	-.37**	.07*	.12**	.06	-.10**	.02	-.02	–

** $p \leq .001$; * $p \leq .05$

and religiosity; whereas a significant positive relationship was found between sexual openness and age.

A hierarchical multiple regression analysis that included all participants explored the contribution of personality variables (e.g., extraversion and neuroticism), sensation-seeking, egalitarianism to sexual openness, and total number of tattoos. To control for between-group differences attributable to religiosity and age, these variables were entered into the analysis on the first step. Personality attributes of sensation-seeking, extraversion, neuroticism, and egalitarianism were entered as a block on the second step, given previous research of their association to sociosexual orientation (see Guéguen 2013; Hawkes et al. 2004; Roberts and Ryan 2002). Tattoo number (including zero) was included as a variable on the third step. Table 3 presents the results of these analyses.

In the first step of the analysis, the influence of religiosity and age accounted for 26% of the variance in sexual openness, $F(2, 811)=140.78$, $p<0.001$. On the second step however, the model accounted for 42% of the total variance, $F(6, 811)=97.36$, $p<0.001$. The unique contributions of sensation-seeking, extraversion, and egalitarianism were all statistically significant ($R^2\Delta=0.16$, $p<0.001$), above and beyond that entered in the first step of the model. The variable of neuroticism was not statistically significant ($p=0.97$) and was therefore excluded. The final step of the model accounted for 46% of the variance in sexual openness, $F(7,$

Table 3 Summary of hierarchical regression model for the prediction of sexual openness in women

Predictor variables	β	t	p	95% confidence interval estimates		Partial r
				Lower	Upper	
Step 1						
Age	.28	9.17	.001*	.11	.29	.31
Religiosity	-.42	-13.96	.001*	-.58	-.25	-.44
Step 2						
Age	.31	11.14	.001**	.16	.33	.37
Religiosity	-.38	-12.34	.001**	-.53	-.22	-.4
Sensation-seeking	.31	1.94	.001**	.24	.42	.36
Extraversion	.11	3.83	.001**	.05	.2	.13
Egalitarianism	.2	7.08	.001**	.1	.29	.24
Step 3						
Age	.25	9.17	.001**	.11	.27	.31
Religiosity	-.34	-12.28	.001**	-.54	-.23	-.4
Sensation-seeking	.3	1.58	.001**	.22	.4	.4
Extraversion	.11	3.74	.001**	.05	.19	.13
Egalitarianism	.19	6.91	.001**	.09	.27	.24
Number of tattoos	.2	7.4	..10**	.02	1.67	.25

Standardized coefficients reported. Step 1= $F(2, 811)=140.78$, $p<.001$; Step 2= $F(6, 811)=97.36$, $p<.001$; Step 3= $F(7, 389)=96.82$, $p<.001$

811)=96.82, $p < 0.001$, with tattoo number accounting for an additional 4% of variance explained ($R^2\Delta = 0.04$, $p < 0.001$).

A second hierarchical multiple regression analysis among tattooed women only explored the contribution of tattoo number, placement status (visible and nonvisible), personality variables (e.g., extraversion and neuroticism), sensation-seeking, and egalitarianism on sexual openness. To control for within group differences, religiosity and age were entered into the analysis on the first step. Personality attributes of sensation-seeking, extraversion, neuroticism, and egalitarianism were entered as a block on the second step, and tattoo variables including tattoo number, visibility placement status, and nonvisibility placement status were entered as a block on the third step. Table 4 presents the results of these analyses.

In the first step, the influence of religiosity and age accounted for 10% of the variance in sexual openness, $F(2, 389) = 20.68$, $p < 0.001$. On the second step, the model accounted for 27% of the total variance, $F(6, 389) = 23.76$, $p < 0.001$. The unique contributions of sensation-seeking, extraversion, and egalitarianism were all statistically significant ($R^2\Delta = 0.18$, $p < 0.001$), above and beyond that entered in the first step of the model. The variable of neuroticism was not statistically significant ($p = 0.53$) and was excluded from the model. Finally, the third step accounted for 31% of the variance in sexual openness, $F(9, 389) = 19.34$, $p < 0.001$, with nonvisibility placement status explaining an additional 4% of the variance ($R^2\Delta = 0.04$, $p < 0.001$). Neither tattoo number ($p = 0.45$), nor visible tattoo placement ($p = 0.39$)

Table 4 Summary of hierarchical regression model for the prediction of sexual openness for tattooed women (n = 391)

Predictor variables	β	t	p	95% confidence interval estimates		
				Lower	Upper	Partial r
Step 1						
Age	.22	4.58	.001*	.11	.29	.23
Religiosity	-.24	-4.97	.001*	-.58	-.25	-.25
Step 2						
Age	.27	5.94	.001**	.16	.33	.23
Religiosity	-.22	-4.79	.001**	-.53	-.22	-.24
Sensation-seeking	.33	7.10	.001**	.24	.42	.34
Extraversion	.16	3.40	.001**	.05	.20	.17
Egalitarianism	.18	4.02	.001**	.10	.29	.20
Step 3						
Age	.21	4.55	.001**	.11	.27	.23
Religiosity	-.22	-5.84	.001**	-.54	-.23	-.25
Sensation-seeking	.31	3.79	.001**	.22	.40	.33
Extraversion	.15	3.49	.001**	.05	.19	.16
Egalitarianism	.17	2.60	.001**	.09	.27	.19
Nonvisible tattoos	.13	2.14	.010**	.02	1.67	.13

Standardized coefficients reported. Step 1 = $F(2, 389) = 20.68$, $p < .001$; Step 2 = $F(6, 389) = 23.76$, $p < .001$; Step 3 = $F(9, 389) = 19.34$, $p < .001$

were significant predictors of sexual openness among tattooed women. The final step of the model therefore suggests that placement of tattoos in nonvisible locations on the body is a variable that further predicts differences in sexual openness among women.

Discussion

The primary purpose of this study was to explore whether women with tattoos report greater sexual openness than their non-tattooed counterparts. Further, we questioned how the variables of tattoo wearing, personality (i.e., extraversion and neuroticism), sensation-seeking, and egalitarian gender-role beliefs relate, and which of these best account for variability in sexual openness. Finally, we examined whether tattoo number and placement status predict additional variance in sexual openness among tattooed women. The unique contribution of this study lay in it being the first, to our knowledge, to ask tattooed participants directly about their sexual openness, as opposed to assessing third-party perceptions.

Our tattooed female participants did indeed report being more sexually open and held more sensation-seeking and egalitarian gender-role beliefs than their non-tattooed counterparts. The finding of increased sensation-seeking is in accord with some previously established research (Hawkes et al. 2004; Swami 2012; Swami and Furnham 2007). The finding of increased endorsement of egalitarian belief among tattooed women might also be expected, given that women may use tattoos to signal their power, control, and defiance of traditional gender-roles (e.g., Atkinson 2002; Hardin 1999). Indeed, women with tattoos are rated as stronger and more independent than their non-tattooed counterparts (Broussard and Harton 2018), suggesting that tattoos carry connotations not typically associated with traditional feminine gender-roles prescribing vulnerability and dependence (e.g., Kalin and Tilby 1978). It is also possible that women who do not identify with traditional feminine roles may be more willing to violate the gendered norms surrounding tattooing which situate body ink as a male activity (DeMello 2000). In this context, if tattooed women reject traditional gender roles, it is likely that they also reject traditional conceptualizations of female sexual roles, which include the idea that women should only engage in limited sexuality within the bounds of committed monogamous relationships. Thus, our finding of a relationship between tattoos and greater acceptance of casual sex may simply be the result of an endorsement of more egalitarian gender-role beliefs overall.

Various factors, such as a higher need for sensation-seeking, were also found to be significantly associated with having a tattoo, and indeed were predictive of sexual openness among women in our two separate regression analyses. In our correlation analysis, extraversion and neuroticism were variably correlated to sexual openness; extraversion was positively correlated to sexual openness while neuroticism was negatively correlated. These findings support previous research examining similar correlations between personality attributes and a comparison between tattooed and non-tattooed men and women (Pozgain et al. 2004; Swami et al. 2012). Further, the variables of tattoo placement status (visible and nonvisible), sensation-seeking,

egalitarianism, and extraversion were all significantly associated with sexual openness.

Extraversion and neuroticism were not related to the number or visibility placement of women's tattoos in the present study; though extraversion was positively related to the number of tattoos placed in nonvisible body locations, while neuroticism was negatively related to nonvisible placement. Given that extraversion as a predictor of tattooing has previously been attributed largely to sensation-seeking in mixed-gender samples (Swami et al. 2012)—often conceptualized as a sub-facet of extraversion—the separation of these two variables in the present study, and the resulting lack of influence of extraversion may provide clarification of these relationships. Previous findings pertaining to the associations between neuroticism and tattoo behaviour have been mixed (e.g., Pozgain et al. 2004; Swami et al. 2012), therefore the lack of relationship in the present study is perhaps unsurprising. It is also possible that as tattoos have become increasingly popular culturally, individual personality variables now play a smaller role in tattooing behaviour; such a trend would mirror that of the tattoo's ascension from a marking of rebellion and deviancy to that of commonplace art obtained by members of all social groups.

Our results lend support to the popular stereotype of tattooed women as more sexually open and align with previous findings suggesting increased sexual permissiveness in tattooed individuals (Burger and Finkel 2002; Drews et al. 2000; Swami 2012). The stereotype of tattooed women as open to casual sex may thus reflect a degree of reality, however, this does not permit the discrimination or stigmatization often reported by tattooed women, nor the making of assumptions about their sexual availability. The previously reported motivations for women to get “inked” are multi-faceted—including reasons such as to express oneself or to celebrate a person or ideal—so the results of the present study must be considered with caution, as it surely may not be a tattooed woman's intent to signal sexual openness. Given our findings, we must consider the nature of the stigmatization of tattooed women. It is possible that the contemporary disparity in social acceptance between tattooed women and tattooed men, whereby tattooed men are viewed more positively (Bauermann et al. 2016), is the result of sexual, rather than tattoo, stigma. That is, tattooed women may be evaluated more negatively because they are viewed as promiscuous, rather than because of the presence of their tattoos. Future research should attempt to parse the differential contributions of tattoo-specific stigma and sexuality/promiscuity-related stigma when evaluating the stigma faced by tattooed women.

Both our bivariate and multivariate analyses suggest that sexual openness differs in women with and without tattoos. It should be noted that among tattooed women particularly, increased sexual openness did not vary based on the number of tattoos—or their placement in visible bodily locations—but *was* predicted by nonvisible tattoo placement. This suggests that an increasing number of tattoos is less relevant to sexual openness than where a tattoo is situated on the body; perhaps the result of nonvisible tattoos being placed in locations that are highly sexualized and often only seen when naked (e.g., breasts, genitals, lower back, etc.) relative to those clearly visible (e.g., hands, face). Sexual openness was, however, significantly different between tattooed and non-tattooed women in our regression, suggesting tattoo presence may be key to differences in sociosexual orientation

between our participant groups of tattooed and non-tattooed women. Here, our data aligns with commonly held sexual stereotypes; previous research suggests that an increased number of tattoos on women is associated with assumptions of greater sexual openness (Swami and Furnham 2007). This may reflect an age-related bias—indeed, women with tattoos were found to be significantly older than non-tattooed women in our study and the variable of age was a significant covariate in each of our separate analyses. Given that tattoo number tends to increase with age (Millner and Eichold 2001), it is likely that these women have accumulated tattoos over time (hence the increasing number of tattoos with age). Therefore, judgements of sexual openness may reflect a similar assumption—that sexual partners have accumulated over time—leading to more negative judgements regarding a tattooed woman's presumed sexual history. It is also certainly possible that this process of accumulation is reflected in actual behaviour, perhaps because women with tattoos are solicited for sex more often throughout their years.

Mirroring previous findings (e.g., Copes and Forsyth 1993; Roberti et al. 2004; Stirn et al. 2006; Swami 2012; Wohlrab et al. 2007a, b), tattooed women in our study reported greater sensation-seeking than non-tattooed women. As one reported motivation for getting tattooed is to experience the physical pain and prove one's endurance (Atkinson and Young 2001), it is possible that high sensation-seeking may motivate individuals to get tattoos for the experience alone. Given that sensation-seeking served as a predictor to sexual openness, it is also possible that women high in sensation-seeking utilize tattoos to signal sexual openness with the end goal of engaging in sexual relations. It has been suggested that sensation-seekers use a variety of behavioural tactics to achieve sexual experiences (Gaither and Sellbom 2003); tattoo wearing may serve as a novel and contemporarily available expression of such tactics.

More generally, these results highlight the complexity of the relationship between women's sexuality and body modification. They provide empirical support for the notion of tattooed women as sexually open while simultaneously calling into question the nature of the stigma surrounding tattooed women. Further, as an addition to the extant literature, the results of this study suggest that holding more egalitarian gender-role beliefs, tattoo presence, and tattoo nonvisibility significantly predicted sexual openness, as do attributes of sensation-seeking and extraversion. We therefore suggest that body tattooing may be conceptualized as merely one indicator among many that may suggest acceptance of sexual openness.

Finally, we wish to emphasize that these findings are not intended to stigmatize the sexual practices or choices of women in any way; this research contributes to a more robust and sex positive understanding of female sexuality and the various factors that contribute to individual differences in sexual openness.

Limitations and Directions for Future Research

Though the present study had a large sample size, the results are limited in terms of generalizability due to a high percentage of straight and Caucasian participants, with 71% identifying as straight and 61% identifying as Caucasian. Additionally,

our demographic data indicate that a considerable number of participants (82%) had post-secondary education, further limiting the generalizability of the results. While all participants self-identified as women, we did not ascertain whether participants identified as cisgender women. Relatedly, we did not explore differences related to sexual orientation, or the relationship between queer culture, tattooing, and sexual openness. Further, our sample was notably Western; the stereotypes and constructs explored herein are largely rooted in Western culture, limiting the generalizability of the current findings. A broader cultural participant base, and the exploration of sexual orientation and gender-identity differences, would therefore surely benefit future researchers. Moreover, participants in this study were aware, prior to their participation, that this study examined the relationships of aspects of personality, tattoo presence, and sexual openness in women. This awareness may have impacted our participant pool, as well as participant responses.

For the purposes of the present study, the Body Image Tattoo Indicator was created by the research team. After data collection, it was determined that the nature of this indicator could be improved upon for future use. For example, locations such as the hip and face had been overlooked, and it is unknown how participants determined their own number of tattoos in situations where the tattoo spanned a large area (e.g., a “sleeve” on the Body Image Tattoo Indicator would comprise both the upper and lower arm sections, so participants may have attempted to indicate one tattoo but the indicator would have counted two). However, since our findings suggest that the tattoo visibility did not significantly predict sexual openness, the indicator thus served as a useful tool that will be revised for use in future studies.

Previous research has also examined the type of tattoo being displayed, and its effect on perceivable attractiveness. For instance, Musambira et al. (2016) found that women displaying either no tattoo or a “feminine” tattoo were both rated equally more attractive than women displaying a “masculine” tattoo. Future studies should consider the type of tattoo being displayed. As well, future investigators may wish to include other body modifications, such as piercings, to better determine the variability in self-expression and sexual openness. Previous research has found that tattoos and piercings are both related to sexual experiences, and that this influence is stronger when both tattoos and piercings are present on the same individual (Guéguen 2012).

Given findings reported by Guéguen (2013), where men perceived better chances of casual sexual success with a visibly tattooed female compared to one without a visible tattoo, it may be interesting for future researchers to examine whether tattooed women would be selected as potential long-term romantic partners or short-term casual sex partners. Men may assess tattooed women as receptive targets for casual sex, which, in accordance with the sexual double standard, simultaneously designates these same women as undesirable targets for long-term relationships (Conley et al. 2011, 2012). Though factors involved in long-term mate selection have been extensively studied (Botwin et al. 1997; Eastwick et al. 2011), to our knowledge this data does not take tattoo visibility into consideration, nor whether gender differences exist in how tattoos affect mate selection. This distinction could be explored further by examining men’s sexual and relational intentions with tattooed and non-tattooed women.

It is worth noting that while tattooing accounted for most between-group differences in sexual openness—that is, between women who were or were not tattooed—there does remain unexplained variance. Sensation-seeking and egalitarianism only explained 2% and 3% of the variance in sexual openness, respectively. These findings suggest that variables not measured in the present study also contribute to differences in sexual openness between tattooed and non-tattooed women, providing areas of further investigation for future researchers.

Finally, the correlational nature of this study cannot be over-stated. The behavioural possibility indicated by these findings in no way imply a behavioural requirement for women with tattoos, nor do tattoos signal sexual availability. Replication and further studies will further elucidate the complex nature of these interactions. Despite these limitations however, the results of the present study provide an unprecedented empirical basis for understanding the relationship between tattoos and sexual variables in women and provide fertile ground for future research.

Conclusions

This study was, to our knowledge, the first to empirically examine the legitimacy of stereotypes surrounding the sexuality of tattooed females. In alignment with these stereotypes, women with tattoos were found to be more sexually open than non-tattooed women. Further, tattooed women endorsed more egalitarian gender-role beliefs than their non-tattooed counterparts, as well as higher levels of extraversion and sensation-seeking; these variables were also found to significantly predict sexual openness. Correlations were noted between various constructs—including a higher need for sensation-seeking and holding more egalitarian gender-role beliefs—which were found to be significantly associated with tattoo number and placement. Given our large sample size, the results of the present study help to provide a firm basis for future examinations relating to this topic.

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