OPEN ACCESS

European Journal of Behavioral Sciences
ISSN 2538-807X

Personality, Sexuality, and Beauty Standards: A Cross-Cultural Exploration of Canadian and German Women's Cosmetic Surgery Behaviours and Attitudes

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ARTICLE INFO

Keywords:
psychosocial factors,
cosmetic surgery,
personality,
cultural,
Canada,
Germany,
acceptance,
interest,
motivation,
sexuality

ABSTRACT

This study investigated the impact of various psychosocial factors on behaviours and attitudes towards cosmetic surgery among Canadian (*n=97*) and German (*n=115*) women, considering cultural differences and beauty standards. The primary objective was to provide valuable insights for physicians and psychologists when selecting suitable candidates for elective procedures, as current pre-surgical assessments often fail to integrate the psychological perspective. A correlation analysis was undergone and revealed that neuroticism moderately influenced interest and motivation for cosmetic surgery in both populations. Additionally, the Canadian group exhibited a moderate negative correlation between motivation for cosmetic surgery and early sexual experiences, effectively destigmatizing cosmetic surgery as a social indicator of early sexual behaviours. However, this correlation was not observed in the German cohort. Notably, Canadians reported a higher overall motivation for undergoing cosmetic surgery compared to Germans, as confirmed by a t-test. Surgeons should inquire about sexuality and personality in pre-surgical consultations to determine candidates who may benefit from the procedure and minimize harm. Future research should develop a standardized test for replication and include diverse demographics.

1. Introduction

Recent research has revealed a sustained increase in the interest and demand for cosmetic surgery among women in both Canada and Germany (Shaw et al., 2013; Koops, Wiessner & Briken, 2022), as such procedures become increasingly normalized in media (Polonijo & Carpiano, 2008; Tate, 2007) and influence beauty standards (Walker, Krumhuber, Dayan & Furnham, 2021; Holliday & Elfving-Hwang, 2012). Multiple studies have identified personality traits (Danesh & Foroozandeh, 2018) as a significant factor in predicting individuals' inclination towards cosmetic procedures. Additionally, a relationship has been found between women's sexual experiences and their decision for undergoing cosmetic surgery

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Cite this article as:
Davies, M. E. (2023). Personality, Sexuality, and Beauty Standards: A Cross-Cultural Exploration of Canadian and German Women's Cosmetic Surgery Behaviours and Attitudes. *European Journal of Behavioral Sciences, 6*(3): 57-68. https://doi.org/10.33422/ejbs.v6i3.1085

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(Koops et al., 2022; Bradshaw, Leyva, Nicolas & Hill, 2019; Brinton, Brown, Colton, Burich & Lubin, 2000).

To gain a deeper understanding of these dynamics, the present study aims to explore two key research questions. Firstly, it seeks to investigate the influence of sexual experiences, behaviours, and perceptions on women's interest in, acceptance of, and motivation for undergoing cosmetic surgery. By examining these factors, the study aims to shed light on the intricate relationship between sexuality and cosmetic surgery decision-making. A feminist lens is adopted to help advocate for the destigmatization of cosmetic surgery being associated with the promiscuity, sexualization, and objectification of women and their bodies.

Secondly, this study aims to examine how personality traits and cultural backgrounds impact the decision-making process surrounding cosmetic surgery. By examining the interplay between personality and cultural factors, the study seeks to uncover the underlying motivations and influences that drive individuals from different backgrounds to pursue cosmetic enhancements. The decision to investigate European and North American populations allows for insights into how the overarching division between western and eastern cultures is insufficient, and instead differentiation between cultures belonging to these subgroups must be taken into account in cultural psychological research.

Through an in-depth exploration of these research questions, this study aims to contribute to the existing body of knowledge on the psychosocial factors influencing attitudes towards cosmetic surgery. The findings hold the potential to provide valuable insights for healthcare professionals, enabling them to better understand patient motivations and make informed decisions regarding elective cosmetic procedures. The cultural comparison also aims to highlight whether a universal or country-specific assessment would be most appropriate for elective surgical candidacy evaluations.

2. Literature Review

Personality has been shown to effect behaviour in many different areas of life, such as education (Köslich-Strumann, Strumann & Voltmer, 2023), politics (Weinschenk, Dawes, Klemmensen & Rasmussen, 2023), charitable contributions (McFarland, Ryan & Ellis, 2002), advocacy and protesting (Chang, Weng & Wang, 2021), and parenting (Truhan et al., 2022). Personality has also been demonstrated to influence our attitudes, for example towards aging (Park & Hess, 2020), wealth (Zitelmann, 2021), and autonomous vehicle innovation (Ding & Yang, 2023). In terms of specific personality traits, neuroticism has also been identified as the most consistent determinant of susceptibility to social influence (Oyibo & Vassileva, 2019) and is considered a trait of public health significance that should be monitored by body image scholars (Swami et al., 2013). Therefore, the idea of personality influencing our behaviours and attitudes towards cosmetic surgery is of interest. Specifically, regarding how different personality types differ in their beliefs and behaviours surrounding cosmetic surgery, and how personality types correlate to cosmetic surgery behaviours and attitudes.

Previous studies conducted in Norway have examined extraversion as a predictor of cosmetic surgery, with higher levels of extraversion found to be associated with a greater likelihood of pursuing such procedures (von Soest, Kvalem, Skolleborg, & Roald, 2009). Other studies integrating personality and individual differences, particularly utilizing the Big Five model, have presented preliminary models for predicting individuals' acceptance of cosmetic surgery (Swami, Chamorro-Premuzic, Bridges, & Furnham, 2009). In light of these findings and the successful application of the Big Five Inventory in past research studies, the test instrument used in this study incorporates the BFI-2-XS test, a shortened version of the Big Five Inventory (Soto & John, 2017).

Sexual factors have also been explored in relation to cosmetic surgery. Research suggests that elective cosmetic procedures, especially those focused on the breasts, abdomen, and thighs, can significantly enhance the sex lives of patients and their partners (Stofman, Neavin, Ramineni, & Alford, 2006). Additionally, social motives such as sexual objectification and body shaming have been identified as predictors of women's acceptance of cosmetic surgery (Calogero, Pina, Park, & Rahemtulla, 2010). For instance, an Iranian study found a positive association between considering cosmetic surgery to improve physical attractiveness for the purpose of attracting and retaining a long-term mate among female participants (Atari, Barbaro, Sela, Shackelford, & Chegeni, 2017). However, male participants did not perceive cosmetic surgery as a strategy for mate retention. Other researchers have found body image improved in patients after cosmetic surgery through the evaluation of postural changes (Keels & Sams, 2013). The influence of beauty standards and agism in media and popular culture has led to a fear or dread of impending old age, especially amongst women, (Jones, 2004) which in turn may contribute to the covert deployment of cosmetic surgery desirable. Furthermore, interest in cosmetic surgery has been linked to lower sexual satisfaction, negative body image, safety-seeking behaviours, and avoidance-related anxiety symptoms (Veale et al., 2014). On the other hand, patients undergoing breast augmentation commonly report enhanced sexual functioning driven by their own feelings rather than external influences (Didie & Sarwer, 2003). Genital plastic surgery patients appear to generally report satisfaction and improved sexual experiences, leading to an enhanced quality of life (Goodman, et al., 2016; Goodman, 2011). Given these findings, there appears to be a connection between sexuality and cosmetic surgery behaviours and attitudes, with potential cultural variances due to the influence of media and beauty standards.

These existing studies provide valuable insights into the role of psychosocial factors, including personality traits and sexual considerations, in the context of cosmetic surgery. By further exploring and expanding upon these findings, this study aims to contribute to a deeper understanding of the intricate dynamics surrounding individuals' attitudes towards and experiences with cosmetic procedures. A feminist lens and culturally sensitive perspective is required from the state of research and was therefore integrated into the study design.

3. Materials & Methods

3.1. Measures

The present study employed a rigorous PRISMA Literature Review methodology, utilizing the comprehensive EBSCO Databanks (EBSCO Information Services, 2023) and EndNote (Clarivate Analytics, 2023) for data collection and analysis. A total of 212 women participated in this research project, completing an online self-report questionnaire that employed 7-point Likert scales to gauge their responses (ranging from *1 = Very Strongly Disagree* to *7 = Very Strongly Agree*). The online questionnaire was accessed by participants through the UniPark (Tivian XI GmbH, 2022) platform and stored in accordance with the German Federal Data Protection Act (Federal Ministry of Justice, 2023).

To analyze the collected data, various statistical techniques were employed within the IBM SPSS Statistics (Version 27) software (IBM Corp., 2020), including Spearman Correlations, Bonferroni Corrections, and t-tests. These analyses aimed to uncover significant associations and differences among the variables of interest. The collected data was assessed using Spearman correlations and unpaired t-tests. The interpretation of correlations in this study followed Cohen's standard (Cohen, 1988), where an r-value of .10 indicated a weak effect, .30 indicated a medium effect, and .50 indicated a strong effect (Cohen, 1992).

To explore potential cultural influences, the participants were divided into distinct cohorts based on their nationality. The Canadian cohort consisted of 97 participants, while the German cohort comprised 115 individuals. By examining these cohorts separately, the study aimed to identify specific cultural factors that contribute to variations in attitudes towards cosmetic surgery between North American and European sample populations. To compare the Canadian and German samples and evaluate each hypothesis, unpaired t-tests were conducted, and the equality of variances was assessed using the Levene Test (O'Neill & Mathews, 2002). Skewness was considered within an acceptable range when its value fell between -2 and +2 (Mardia, 1970). Similarly, kurtosis was considered valid when its value was less than 7 (Mardia, 1970).

The Big Five Inventory–2 Extra-Short Form (BFI-2-XS) test was selected as the measurement tool for assessing the five Big Five personality traits: Extraversion, Openness to Experience, Agreeableness, Negative Emotionality, and Conscientiousness (Costa & McCrae, 1992). The BFI-2-XS was chosen due to its brevity, consisting of only fifteen questions, such as "*I am someone who is compassionate, has a soft heart*" (Rammstedt, Danner, Soto, & John, 2018; Soto & John, 2017). Its extensive validation in both English and German languages (Rammstedt et al., 2018). Prior to its use in this study, appropriate permissions were obtained in accordance with the relevant test copyrights, following the guidelines outlined in Testing Standards 9.22 and 9.23 (Linn, 2011).

The study hypothesized significant correlations between the proposed ten psychosocial factors in Table 1. *Predicative* Factors *to be Examined* and three primary outcomes: (H1) interest in cosmetic surgery, (H2) motivation to undergo cosmetic surgery, and (H3) acceptance of cosmetic surgery. These hypotheses were developed to explore the underlying relationships between psychosocial factors, specifically relating to sexuality and personality, and individuals' attitudes and behaviours related to cosmetic surgery.

Table 1.
Predicative Factors to be Examined

Variable Category	Variable
Personality	Extraversion
	Agreeableness
	Conscientiousness
	Negative Emotionality
	Openness to Experience
Sexuality	Number of Sexual Partners
	Early Sexual Experiences
	Frequency of Sex
	Frequency of Masturbation
	Perceived Attractiveness to Partner

By employing this comprehensive research design and statistical analysis, the study aimed to provide robust evidence on the associations between psychosocial factors and attitudes towards cosmetic surgery. The findings would contribute to the existing body of knowledge in the field and potentially inform healthcare professionals in their decision-making processes related to cosmetic surgical procedures.

3.2. Participants

After receiving approval from the Medical School Hamburg Ethics Committee, it was determined that participation in this study posed no identified risks. To recruit a diverse range of participants, a convenience sampling method was employed, utilizing social media and

university platforms. Prior to their involvement, participants provided informed consent voluntarily, which included a comprehensive explanation of the study, disclosure of pseudonymization and data storage procedures, and adherence to ethical guidelines such as the APA's Ethical Principles of Psychologists and Code of Conduct (American Psychological Association, 2017) and the German Federal Data Protection Act (Federal Ministry of Justice, 2023). No individuals under the legal age or currently admitted to a medical facility were included, and no form of compensation, whether financial or otherwise, was provided.

Initially, a total of N=1847 participants completed the online questionnaire. After applying specific exclusion criteria (Canadian or German citizenship, female gender, and age between 21 and 40), the final sample consisted of N=212 CIS-gendered females (*mean age = 24.79 years*), with n=97 being Canadian nationals and n=115 being German nationals. Among the established sample population, 26 women reported having undergone at least one cosmetic surgical procedure. The mean age at the time of their first cosmetic surgery was 21.77 years and an overview of the cosmetic surgeries undergone amongst participants can be seen in *Table 2. Undergone Cosmetic Surgeries within Sample Population*. The sexual orientation of this study's participants can be seen in Table 3. *Sexual Orientation of Sample Population*.

Table 2.
Undergone Cosmetic Surgeries within Sample Population

	Canadian Population (n=16)	**German Population (n=10)**	**Total Population (N=26)**
Breast Enhancement	6	2	8
Rhinoplasty	2	3	5
Liposuction	2	0	2
Filler / Botox Treatment	9	3	12
Labiaplasty	3	1	4
Excess Skin Removal	1	1	2

Table 3.
Sexual Orientation of Sample Population

	Canadian Population (n=97)	**German Population (n=115)**	**Total Population (N=212)**
Heterosexual	87	109	196
Homosexual	0	0	0
Bisexual	8	6	14
Asexual	2	0	2

4. Results

4.1. Internal Consistency

Descriptive statistics can be seen in Table 4, Table 5, Table 6, and Table 7.

Table 4. *Inferential Statistics of Correlation Analyses*

	Canadian Population	**German Population**	***r***
H1: Interest	.208	.177	.076
H2: Motivation	.205	.169	.216
H3: Acceptance	.157	.213	-.195

Note: M = mean, *SD* = standard deviation, *r* = effect size

Table 5.
T-test Properties

	MD	***SED***	***CI***	
			LL	***UL***
H1: Interest	.304	.271	-.231	.839
H2: Motivation	.853	.263	.333	1.377
H3: Acceptance	-.263	.261	-.801	.276

Note: MD = mean difference, *SE* = standard error difference, *CI* = confidence interval, *LL* = lower limit, *UL* = upper limit

Table 6.
T-test Values

	Canadian Population		**German Population**	
	M	***SD***	***M***	***SD***
H1: Interest	3.72	2.050	3.42	1.896
H2: Motivation	3.67	2.019	2.82	1.814
H3: Acceptance	6.44	.629	6.70	.675

Note: M = mean, *SD* = standard deviation

Table 7.
Skewness and Kurtosis of T-tests

	H1: Interest	**H2: Motivation**	**H3: Acceptance**
Skewness	.191	.376	-1.114
H3: Acceptance	-1.162	-1.121	.264

4.2. Inferential Statistics

The t-test and correlation analyses can be seen in Table 8, Table 9, Table 10, Table 11.

Table 8.
Standard Error Mean and Effect Size of T-tests

	t	***df***	***p***	***d***
H1: Interest	1.121	210	.263	.152
H2: Motivation	**3.237**	210	**.001**	.443
H3: Acceptance	-1.007	24	.324	-.399

Note: t = t-value, *df* = degrees of freedom, *r* = effect size, *p* = p-value / significance, *d* = Cohen's d

Table 9.
Correlation Results of the Canadian Cohort

	H1: Interest		**H2: Motivation**		**H3: Acceptance**	
	r	***p***	***r***	***p***	***r***	***p***
Extraversion	-.042	.682	-.076	.462	-.076	.780
Agreeableness	-.003	.977	-.022	.834	-.015	.955
Conscientiousness	.102	.319	.146	.153	.339	.199
Negative Emotionality	**.226**	**.026***	**.237**	**.019***	.417	.108
Openness to Experience	.194	.057	**.274**	**.007****	.286	.282
Number of Sexual Partners	.127	.231	.103	.333	.106	.707
Early Sexual Experiences	**-.274**	**.007****	**-.207**	**.043***	-.378	.149
Frequency of Sex	.057	.617	.054	.635	-.057	.847
Frequency of Masturbation	.004	.972	.130	.245	-.115	.684
Perceived Attractiveness to Partner	-.086	.481	-.075	.541	.558	.119

Note: r = correlation coefficient, *p* = p-value / significance, * $p < .05$, ** $p < .01$

Table 10.
Correlation Results of the German Cohort

	H1: Interest		**H2: Motivation**		**H3: Acceptance**	
	r	***p***	***r***	***p***	***r***	***p***
Extraversion	.033	.725	-.040	.674	-.228	.526
Agreeableness	-.082	.385	-.018	.845	-.278	.437
Conscientiousness	-.037	.695	.029	.759	.362	.304
Negative Emotionality	**.217**	**.020***	**.199**	**.033***	-.167	.644
Openness to Experience	.059	.531	-.041	.665	-.067	.854
Number of Sexual Partners	.082	.390	.076	.423	-.108	.766
Early Sexual Experiences	-.086	.371	-.156	.103	-.027	.942
Frequency of Sex	.095	.322	.114	.235	.035	.930
Frequency of Masturbation	.065	.496	-.168	.075	-.278	.437
Perceived Attractiveness to Partner	.021	.861	-.041	.733	-.408	.495

Note: r = correlation coefficient, *p* = p-value / significance, * $p < .05$, ** $p < .01$

Table 11.
Correlation Results of the Total Population

	H1: Interest		**H2: Motivation**		**H3: Acceptance**	
	r	***p***	***r***	***p***	***r***	***p***
Extraversion	-.008	.910	-.072	.298	-.068	.741
Agreeableness	-.043	.537	-.005	.948	-.120	.559
Conscientiousness	.012	.857	.024	.726	.372	.061
Negative Emotionality	**.227**	**.001****	**.252**	**.000****	.089	.667
Openness to Experience	.120	.080	.092	.183	.167	.414
Number of Sexual Partners	.110	.117	.129	.065	.025	.904
Early Sexual Experiences	**-.179**	**.010***	**-.182**	**.009****	-.298	.139
Frequency of Sex	.084	.251	.114	.117	.119	.587
Frequency of Masturbation	.015	.830	-.080	.264	-.058	.784
Perceived Attractiveness to Partner	-.058	.496	-.118	.161	.407	.149

Note: r = correlation coefficient, *p* = p-value / significance, * $p < .05$, ** $p < .01$

5. Discussion of Results

A positive significant correlation was found between a high level of *Negative Emotionality* and interest in undergoing a cosmetic surgery amongst the total population ($r = .227$, $p = .001$), within the Canadian cohort ($r = .226$, $p = .026$) and within German cohort ($r = .217$, $p = .020$). Therefore, it can be inferred that a high score in negative emotionality appears to influence interest in undergoing cosmetic surgery to a small effect overall, as well as within both the North American and European cohort. In addition, there was a positive significant correlation found between a high level of *Negative Emotionality* and the motivation for undergoing a cosmetic surgery amongst the total population ($r = .252$, $p = .000$), within the Canadian cohort ($r = .237$, $p = .019$) and within the German cohort ($r = .199$, $p = .033$). Therefore, it can be interpreted that an association between exhibiting a high level of negative emotionality and the interest and motivation for undergoing cosmetic surgery appears to exist across western cultures to a small effect. This confirms that personality traits, specifically Big Five personality traits, influence the cosmetic surgery behaviours and attitudes of women (von Soest et al., 2009; Swami et al., 2009). However, this study's results introduce differential findings to the research field examining the relationship between personality and cosmetic surgery decision-making. For example, no significant results were found regarding extraversion (von Soest et al., 2009) nor the acceptance of cosmetic surgery (Swami et al., 2009). Overall, the lack of significant results for Big Five personality traits in regard to the motivation, interest, and acceptance of

cosmetic surgery suggests that cosmetic surgery behaviours and attitudes are not mediated by personality types, but instead potentially by other social, environmental, or biological factors. The exception being the significant finding of a small effect size for the influence of high negative emotionality influencing interest and motivation for cosmetic surgery. This could potentially offer more insights into previous research identifying a motivation for cosmetic surgery for self-fulfillment within pessimistic groups (Gilman, 2010), identifying neuroticism as the most consistent determinant of susceptibility to social influence (Oyibo & Vassileva, 2019), and emphasizing neuroticism as trait of public health significance that should be monitored by body image scholars (Swami et al., 2013).

A negative significant correlation was found between *Early Sexual Experiences* and interest in undergoing cosmetic surgery amongst the total population (r = -.179, p = .010) and within the Canadian cohort (r = -.279, p = .007), but not within the German cohort (r = -.086, p = .371). There was also a negative significant correlation found between *Early Sexual Experiences* and the motivation for undergoing cosmetic surgery amongst the total population (r = -.182, p = .009) and within the Canadian cohort (r = -.207, p = .043), but not within German cohort (r = -.156, p = .103). Given these findings, past studies that indicated an association between women's sexual experiences and their decision for undergoing cosmetic surgery (Koops et al., 2022; Bradshaw, Leyva, Nicolas & Hill, 2019; Brinton, Brown, Colton, Burich & Lubin, 2000) is confirmed, with new interpretations being introduced. Specifically, that early sexual experiences seem to negatively influence women's attitudes and behaviours regarding cosmetic surgery, especially amongst the Canadian population. From this we can suggest that the potential stigmatization of cosmetic surgery being linked to promiscuity in the sense of early sexualization being dismantled. Given these findings, future research may choose to examine the association between an older age at the time of the first sexual experience and the interest and motivation of undergoing cosmetic surgery amongst a North American sample population. Adopting a feminist lens aimed at challenging stigmatization would be of particular interest from an equality and social justice perspective.

The t-test calculated to compare the Canadian and German cohorts in relation to motivation for undergoing cosmetic surgery (H2) resulted in a significant t-value of 3.237 (t (210) = 3.237, p < 0.01 (2-tailed), d = .443) with an effect size of .216. A skewness value of .376 and a kurtosis value of -1.121 were also calculated and accepted as valid. The Levene Test showed that there was homogeneity of variance (F (1.210) = 2.791, p = .001, n = 212). A comparison of mean values between the Canadian and German cohorts showed that Canadian women (M = 3.67, SD = 2.019, n = 97) reported higher motivation for cosmetic surgery than German women (M = 2.82, SD = 1.814, n = 115). Therefore, we can interpret a difference between Canadian and German nationals regarding their motivation for undergoing cosmetic surgery, and postulate that motivation for undergoing cosmetic surgery varies amongst western cultures. This finding provides new knowledge to researchers and may help in the interpretation of how beauty standards, attitudes, and cosmetic surgery behaviours differ between western (i.e., North American and European) cultures. It also confirms prior research findings that beauty standards and social pressures differ between countries and cultures (Sato, 2021; Honig, 2014; Ybarra, Stanik & Lee, 2012). Additionally, this finding provides justification for country-specific pre-surgical screenings instead of a global or universal measure, as variation among nationalities has been identified.

6. Conclusion

Based on the collected data, it can be inferred that specific psychosocial factors regarding personality and sexuality exert influence on the interest, motivation, and acceptance of cosmetic surgery within western cultures. Notably, both sexuality and personality emerge as significant factors shaping the attitudes and behaviours of Canadian and German women towards cosmetic surgery. These findings suggest that surgeons should consider incorporating inquiries about sexuality and personality traits during pre-surgical consultations. This approach can not only help assess the potential mental health benefits of cosmetic procedures for candidates but also serve as a protective measure by identifying individuals who may not be suitable candidates.

To advance the field, future research should focus on developing a standardized test instrument that allows for relative scoring metrics, facilitating replication tests. Furthermore, future studies should strive to recruit larger and more diverse samples, while maintaining a focus on cultural diversity, sexuality, types of cosmetic procedures, and personal backgrounds. Additionally, considering the inclusion of other gender identities, exploring different predictors, and incorporating longitudinal designs would provide valuable insights. Conducting a replication study specifically targeting women from Eastern cultures would be particularly valuable.

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