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## **Gender differences in body experience - a comparison of people with and without tattoos**

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## **Abstract**

Tattooing is a body modification practice that an increasing number of people, regardless of age, education or gender, are opting for. Previous quantitative research on the population of people with tattoos has mainly focused on differences in various personal characteristics, but has not focused on the bodily experience of people with tattoos. The aim of the present study was to examine differences in body image, body schema and body sense in people with and without tattoos. Two hundred and eleven people participated in the study, 108 of whom had at least one tattoo. Respondents completed a set of questionnaires: The Battery of Tests of The Body Self Representations and a demographic questionnaire. Our study showed that there were no significant differences in terms of mental body representations in people with and without tattoos. The main differences in terms of mental body representations were between men and women without tattoos. The present study suggests the need for a deeper understanding of the importance of tattoo for bodily experience.

*Keywords:* mental body representations, tattoos, body image, gender

## **Introduction**

Tattooing is one of the most popular forms of body modification, chosen by people of different ages, material status, education and gender [1]. In the past, tattooing was associated with certain social groups - sailors, convicts. Today, tattooing is widespread among all people. Although adolescents and young adults have the highest rates of indulging in this practice [2], people in other developmental periods are also opting for tattoos. Importantly, despite the high popularity of tattooing, there is still a larger proportion of the population who do not opt for this form of body modification. This leads one to wonder about the motivation for making a significant intervention in one's own body and about the psychological significance of tattoos.

Past psychological research on people with tattoos has mainly focused on finding links between tattoo possession and psychopathology [3][4][5][6]. However, it is worth noting that these studies were mainly conducted on a population of prisoners and psychiatric patients, making it inappropriate to generalise these findings to the entire population of tattooed individuals. Contemporary reports focus on the positive aspects of tattooing, such as its importance for identity formation [7][8]. Some works have compared individuals with and without tattoos, showing differences in some personality traits [9][10] and self-esteem [11][12]. However, little is still known about differences in experienced corporeality. Jabłońska and Mirucka [13] found that for women with tattoos, at least three specific ways of experiencing the body can be distinguished: a disturbed bodily self, an unstable bodily self and an integrated bodily self, which may be indicative of variation in the experience of other psychological characteristics as well because the body and psychic are interrelated [14].

The decision to change one's body, which is a key aspect of psychological functioning [14], may indicate a differentiated experience of one's corporeality. This study attempts to answer the question: do people with tattoos differ in their experience of their bodies from people without tattoos?

### **Tattooing**

Swami and Harris [15] consider tattooing to be: "The practice of inserting indelible ink into the dermis layer of the skin to alter the pigment for aesthetic or decorative reasons" (p. 58). The above definition refers to the aesthetic function of tattooing, which is important for representatives of European culture, including the people of Polish origin we studied.

However, it should be noted that the motivation to get a tattoo is not necessarily related to aesthetic and decorative reasons. Respondents also point to issues related to the expression of emotions [16], which seems to be important especially because of the involvement of the body in the processing of emotions [14]. The body is a psychological construct that is not only concerned with issues of appearance and social perception.

Corporeality is also about the inside of the body and the physiological processes that take place within it. In order to understand the total experience of the body, it is necessary to refer to many levels of its functioning.

### **Body & Tattoo**

Tattooing represents a significant intrusion into the corporeal Self and thus into the entire personality system. To date, it has been shown that individuals with tattoos are characterised by a higher need for sensation-seeking and risk-taking behaviour than those without tattoos [11] [17],

which seems consistent with reports of a higher frequency of psychoactive substance use in this group of individuals [10][12][18].

Among self-esteem studies, the relationship of body modification to self-perception is not clear. Some studies indicate that having tattoos is associated with reduced self-esteem [19][20]. Swami [21] showed that subjects' self-esteem increased after getting a tattoo, while Pajorm et al. [22] indicated that self-esteem in those with tattoos was higher only in competence and leadership skills. There are also reports reporting no differences in the self-esteem of people with vs without tattoos [23][24]. The inconsistency of the results makes it difficult to draw general conclusions about the self-esteem of people with tattoos.

There are isolated quantitative studies in the literature that relate directly to the body. In one of these, Kertzman et al. [18] examined differences in self-esteem and body image in women with and without tattoos. They showed that women with tattoos had significantly lower self-esteem than women without tattoos, but no such differences in body image were found. Another study found that tattooing was associated with negative attitudes towards one's own body [9]. There are also reports describing the phenomenon of obtaining a sense of uniqueness through tattooing. In a study, people with tattoos scored significantly higher on the need for uniqueness than people without tattoos, it was concluded that tattoos represent a bodily expression of uniqueness [25][26]

The above reports indicate that there are differences in the psychological characteristics of people with and without tattoos, but also that there is a lot of ambiguity particularly with regard to their self-esteem and corporeality.

### **Gender & Body**

The differences associated with how men and women experience the body seem to be undeniable. Not only because of differences in physiology and body structure, but also by the fact that the body is a social construct and is constantly influenced by culture. Most psychological research on gender differences in people with tattoos has been conducted in the field of social psychology.

Studies indicate that people with tattoos are perceived worse than those without, and that women in particular are exposed to a worse perception [28]. For a long time, attitudes towards people with tattoos have been more negative than positive, and research indicates that the situation is not changing significantly.

In a study by Forbes [10], respondents without body modification judged that tattooed people were different from them despite the fact that the study found no such differences. Among researchers, there has been demand for a tool to measure the stigma that affects people with tattoos [27].

Despite the generally poorer social perception of people with body modifications, people with tattoos are most vulnerable to criticism and stigmatisation, women are the most vulnerable [29][30]. Doherty [29] indicates that women with tattoos are judged more negatively because of their failure to meet social expectations. Armstrong et al. [1] concluded that women with tattoos experience more frequent criticism and negative comments from men. Braunberger [2] finds that men have a higher social acceptance of tattoos than women. Research on body perceptions with tattoos was also conducted by Hawkes et al. [31]. The researchers concluded that women with tattoos are perceived worse than those without them, regardless of the size and visibility of the tattoos they had. Swami and Furnham [30] showed that women with tattoos are perceived as less attractive, alcohol abusers and sexually promiscuous.

Kluczyńska [32] points out that this may be due to a different understanding of the roles of women and men and a greater emphasis on the importance of the body in women's lives. Tattoos in women have long been a socially disapproved phenomenon because, according to the beauty canon, they disfigured the body, which was supposed to be flawless and in line with what the culture expected.

The current situation of women's bodies with tattoos seems interesting. It is not clear whether there are differences in the experience of the bodies of men and women with and without tattoos, but it is known that women with tattoos experience their bodies in a specific way.

One study found three styles of experiencing the body among young adult women [13]. These were referred to as the disturbed bodily self, the unstable bodily self and the integrated bodily self. In addition, the authors of the study checked the respondents' self-esteem. The more integrated the subjects' experience of the body, the higher the self-esteem.

A multi-level view of corporeality can bring interesting conclusions about the experience of the body by people with and without tattoos, for which Mirucka's theory of the embodied subject [33] can be used.

### **Mental Representations of the Body**

One theory explaining how the body is experienced is Beata Mirucka's Embodied Subject Model [33]. It indicates that there are three levels of experiencing the body: 1) neuronal maps 2) mental representations of the body 3) bodily identity.

The level of neuronal maps refers to the perception of the body in the dimensions of interoception (perception of sensations from within the body), proprioception (perception of stimuli related to body position and movement) and exteroception (perception of sensations related to being in contact with objects). On the basis of the integration of impressions from these senses, the mind

creates a neuronal map of the body, which makes it possible to experience the bodily self at higher levels.

The dimensions of the mental representations of the body are formed by the image of the body, the so-called perceptual dimension of the self, with a cognitive and emotional component; the body schema, i.e. the perception of the stability of one's own body in space, inter alia during movement; the sense of the body which is the full experience of one's own corporeality together with sensations from within the body. The quality of the different representations is indicative of how a person experiences their own body.

The final level is bodily identity, the quality of which is evidenced by a constellation of the following sensations: a sense of self-existence, a sense of continuity of the self, a sense of inner wholeness, a sense of separateness and awareness of the boundaries of one's body, acceptance of oneself as a being, a sense of agency, a sense of control over one's own body and psychophysical integrity [33]. The bodily identity dimension makes the body part of the Self. The mind, in this case, creates metarepresentations, which are something different from the mental representations of the body from level two. The difference is that, in the case of the bodily identity level, metarepresentations concern: "higher-order bodily experience as it is elaborated through reflexive-affective, primarily value-laden reference to the bodily Self " [33, p. 82].

In the present study, we examine whether people with tattoos differ from people without tattoos in terms of body image, body schema and sense of body, three mental representations of the body from the second level of embodiment.

## **Methods**

### **Procedure**

We first reviewed the research on the body and tattoos. The lack of literature on the corporeality of people with tattoos, led us to ask the question: are there differences in the experience of the body between people with and without tattoos? The study was quantitative in nature. Data for statistical analyses were obtained from questionnaires that were completed online, between February and March 2021. Inclusion criteria for the study were having at least one tattoo or no tattoo at all, exclusion criteria were age below 18 years.

### **Measures**

To answer the research question posed, we used the following methods: Battery of Tests for the Study of Psychological Representations of the Body [33] and a demographic questionnaire with questions about tattoos.

The Battery of Tests for the Study of Mental Representations of the Body consists of three scales to measure: body image, body schema and sense of body. The Body Image scale examines beliefs and emotions directed towards the body. It consists of 6 items (e.g. "I look completely normal"). A high score on this scale indicates a favourable perception of one's body and positive emotions directed towards it. A low score indicates a lack of acceptance of one's body. The Cronbach's Alpha coefficient for the scale used is:  $\alpha = .84$  (tattoo);  $\alpha = .84$  (no tattoo). The Body Schema Scale measures a sense of body stability, including the level of command of one's body. It consists of 6 items (e.g.: 'My movements are graceful and harmonious'). A high score on this scale indicates a high sense of body control and stability, a low score indicates a poor sense of stability, including poor motor coordination. Cronbach's alpha for the scale used:  $\alpha = .73$  (tattoo);  $\alpha = .79$  (no tattoo). The Sense of Body Scale measures the sense of overall body condition, including contact with one's own needs. It consists of 18 items (e.g. 'I feel strong and healthy'). High scores indicate good contact with one's own body, needs and general well-being. Low scores indicate poor wellbeing and contact with one's own needs. Cronbach's alpha coefficient for the scale used:  $\alpha = .88$  (tattoo);  $\alpha = .87$  (no tattoo). Responses were given using a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

The demographic questionnaire included questions about age, gender, place of residence, education, number of tattoos held and areas of the body where the respondents had tattoos.

### **Research sample and procedure**

Two hundred and eleven people from Poland participated in the study (108 with tattoos, 103 without tattoos). The age of the participants ranged from 16 to 56 years ( $M = 25.25$ ;  $SD = 6.40$ ). Among the respondents, 15.6% live in the countryside, 12.8% in a city with up to 25.000 inhabitants, 10.4% in a city with 25.000 to 100.000 inhabitants, 14.7% in a city with 100.000 to 250.000 inhabitants, and 46.4% in cities with more than 250.000 inhabitants. In terms of education, 1.4% have primary education, 3.8% have lower secondary education, 0.9% have vocational education, 50.2% have secondary education and 43.6% have higher education.

We searched for respondents on local community groups on Facebook. We posted information about our research on several of them, and 230 people expressed their willingness to participate. Respondents received a link to a series of questionnaires with information about the anonymity of the study and the possibility to withdraw at any time. Nineteen respondents were excluded from the analyses because they did not complete all the questionnaires.

## Results

### Tattoo prevalence

A total of 108 respondents out of a total sample of 211 (i.e. 51.18%) had at least one tattoo. Among participants who reported having a tattoo, the number of tattoos ranged from 1 to 25 ( $M = 4.45$ ,  $SD = 5.11$ ). Both women ( $n = 66$ ,  $M = 4.12$ ,  $SD = 5.19$ ) and men ( $n = 42$ ,  $M = 4.98$ ,  $SD = 5.01$ ),  $t(106) = 0.85$ ,  $p = 0.40$ ,  $d = 0.17$  had a similar number of tattoos.

### Preliminary comparisons between groups

We first examined differences in demographics, between those with and without tattoos. A  $t$ -test for independent groups showed that there was a significant difference in mean age between tattooed subjects ( $M = 24.31$ ,  $SD = 5.40$ ) and participants without tattoos ( $M = 26.22$ ,  $SD = 7.20$ ),  $t(209) = 2.19$ ,  $p = .030$ ,  $d = 0.30$ . There was also a significant difference in terms of education,  $\chi^2(4) = 15.40$ ;  $p = .004$ , participants without tattoos were significantly more likely to have a university education. There were no significant differences in terms of place of residence,  $\chi^2(4) = 8.44$ ;  $p = .077$ .

### Comparisons between groups

To examine differences in mental representations of the body in people with and without tattoos, we conducted an analysis of variance (ANOVA) for the dependent variables: body image; body schema; sense of body; and the independent variables: tattoo status (tattoo vs no tattoo), gender of participants (female vs male) (see Table 1).

The results indicate that the main effect of tattoo status and participant gender was not statistically significant ( $p > .05$ ), while the interaction between tattoo status and gender was significant,  $F(1, 207) = 4.27$ ,  $p = .040$ ,  $\eta^2 = 0.02$ . It appears that there is a significant difference between those without tattoos ( $p = .02$ ), men without tattoos ( $M = 25.14$ ,  $SD = 6.63$ ) received a higher body image score compared to women without tattoos ( $M = 20.83$ ,  $SD = 8.53$ ).

For body schema, a single main effect of participants' gender was shown,  $F(1, 207) = 5.74$ ,  $p = .020$ ,  $\eta^2 = 0.03$ . It was noted that men ( $M = 26.31$ ,  $SD = 6.07$ ) compared to women ( $M = 24.08$ ,  $SD = 6.49$ ) had a significantly higher body schema score ( $p = 0.02$ ).

For body sense, the interaction between tattoo status and participant gender was shown to be significant,  $F(1, 207) = 4.56$ ,  $p = .034$ ,  $\eta^2 = 0.02$ . Men without tattoos ( $M = 26.56$ ,  $SD = 4.51$ ) had significantly higher ( $p = .01$ ) body sense than women without tattoos ( $M = 23.44$ ,  $SD = 5.05$ ).

The number of tattoos did not differentiate the subjects in terms of body image, body schema, or body sense ( $p > .05$ ). The body part most frequently tattooed by women (43.9%) and men (57.1%) is the forearms. The women surveyed did not tattoo their arms and the men did not tattoo their buttocks and thighs (see Table 2).



## Discussion

The results of our study indicate that the main differences in body experience were among women and men without tattoos. In the case of body image, men were characterised by a greater acceptance of their outward appearance, which is not an obstacle for them in social interactions. The present data are in line with a number of previous studies that indicate that men are characterised by a better body image and greater confidence in their physicality compared to women [34][35][36] [37]. The inequalities that emerge in this aspect of experiencing the body are thought to be due to a number of social factors. One of these is the media's creation of unrealistic beauty ideals aimed specifically at women and the concomitant expectation to conform to them. Women's internalisation of these demands and inability to meet them can significantly interfere with the experience of their body image, as reflected in the significant prevalence of anorexia among girls.

The lack of differences in body image between men and women with tattoos seems interesting. One study found that women with tattoos perceive themselves as less attractive [38], which seems to be in line with research on the public perception of people with tattoos, according to which women are perceived worse than men and are subject to more criticism because of their modifications [30]. This is the case regardless of the number and visibility of their tattoos [31]. These differences are also highlighted by another study, in which individuals seemed more satisfied with their bodies after getting a tattoo, while social anxiety related to appearance increased in women 3 weeks after the procedure [21]. The lack of difference may be due to greater social acceptance of body modification practices in women, as may be evidenced by the increasing number of women opting for tattooing [31]. Body modification represents a turning away from cultural norms that require women to follow a specifically defined image. It seems that by choosing to get a tattoo, women are breaking away from these expectations and, in doing so, regaining control over their bodies.

In our study, we also showed that men, regardless of tattoo status, have a higher level of body schema than women. This indicates that men may have better motor skills and a greater sense of body control. This result may be due, on the one hand, to the fact that men are more likely to engage in physical activity and exercise than women [39]. On the other hand, the parallel interaction of other mental representations of the body is important. One study found that postural control was associated with body image dissatisfaction only in women [35] suggesting that the level of body image may generate a different way of experiencing body schema in women. Women are more likely to show dissatisfaction with their body image indicating that this aspect may influence the body schema dimension.

Our research indicates that men without tattoos have higher levels of body sense than women without tattoos. Body sense is a holistic experience of one's physical state. The higher score among men, may indicate that the holistic experience of the body is at a higher level in them than in women. Body sense is based, among other things, on interoceptive processes. Some studies indicate that women are characterised by greater attentiveness to internal body states, but have lower accuracy in recognising sensations [40][41]. It is important to note that women are more likely than men to experience unpleasant discomfort emanating from within the body. One prime example is the occurrence of menstruation in women, which causes a range of physical discomforts such as abdominal pain, back pain and headaches, exposing them to a burden of more frequent unpleasant sensations, which may be significantly related to the accuracy of the perception of interoceptive stimuli.

In terms of body sensation, no differences were found between men and women with tattoos. This may be related to the fact that tattooing reinforces their bodily identity [33], the so-called unity of the personal self and the bodily self which makes women experience their bodies at a similar level as men. However, this requires further research exploration due to the lack of reports on the bodily identity of people with tattoos.

### **Strengths and limitations**

The lack of differences in body experience between people with and without tattoos may indicate that people with tattoos start to feel more attractive, confident and empowered, in other words tattoos help them to integrate their body experience.

However, the above results should be treated with caution, mainly due to the small sample of people surveyed. A larger number of respondents would have allowed for more accurate and broader analyses that could have revealed mediating or moderating relationships. Future studies would do well to report on the BMI of the respondents and any neurological or psychological disorders that may cause distortions in the experience of one's body.

### **Practical implications**

These studies point to an important conclusion about the differences in women's and men's experience of the body. They suggest that actions should be taken that could support women in experiencing their own corporeality.

One recommendation from institutions and practitioners working to support women might be to encourage physical activity that positively influences self-perception. Several studies have shown that yoga and exercises that support the mind-body relationship improve movement control and body awareness [42][43], which impacts on overall well-being and can support well-being.

Another important issue is the cultural dimension, in which unrealistic standards of beauty are created. In this context, the most relevant seems to be the contemporary influence of social-media, which is now the main medium of social influence. Research shows that comparing oneself to ideal body images from Instagram increases dissatisfaction with one's appearance and weight [44], with appearance comparisons made on social media resulting in negative mood and worse body image than appearance comparisons made in person or in traditional media [45] This points to the need to highlight and educate about the impact of social media on experiencing one's corporeality.

### **Summary**

Our study shows no significant differences in the body experience of people with and without tattoos, but these data should be approached with caution due to the small size of the subjects studied. We only showed differences among those without tattoos. Women had weaker levels of body image and body-feeling than men, which agrees with previous reports of gender differences in body experience. Still unexplained appear to be the functions that tattoos may play in the experience of the body for men and women, indicating the need for further research in this area.

### **Disclosures**

#### Author's contribution

Conceptualization: Jabłońska K., Kuc M. Methodology: Jabłońska K. Software: Jabłońska K., Rogala M. Formal analysis: Kuc M., Łoś T. Investigation: Rogala M., Lorenc K. Resources: Lorenc K., Bielawska O. Data curation: Kuc M., Rogala M. Writing – rough preparation: Lorenc K., Giżewska K. Writing review and editing: Łoś T., Giżewska K. Visualization: Olga B., Łoś T. Supervision: Giżewska K., Bielawska O. Project administration: Łoś T., Bielawska O.

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