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Research Article

## Differences in Alcohol Consumption and Self-Esteem between Tattooed and Non-Tattooed People

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### Abstract

**Background.** The primary aim of this research was to examine differences in alcohol consumption and self-esteem between tattooed and non-tattooed people. The secondary objective of this study was to examine the correlation between the number of tattoos and the alcohol consumption as well as the self-esteem. **Methods.** Two standardized tests were used: the “Alcohol Use Disorders Identification Test” (AUDIT) for investigation of alcohol drinking behaviour and the “Multidimensional Self-Esteem Scale”. In addition, the number, size and body parts of tattoos were asked with a non-standardized questionnaire. **Results.** A total of 228 German persons (127 tattooed and 101 non-tattooed) participated in an online survey, aged between 17 and 65 years ( $M = 26.41$ ,  $SD = 9.03$ ). The results indicate that there were no significant group differences concerning the alcohol consumption, as well as there was no correlation between tattoos and the self-esteem. Equally, there was no correlation between the number of tattoos and the alcohol consumption. A positive correlation between the number of tattoos and the self-esteem was found. **Conclusion.** Tattooed people do not seem to consume more alcohol or have lower self-esteem than non-tattooed people. This study shows that the number of tattoos is associated with the self-esteem. No differences between tattooed people and non-tattooed people could be found in this study. An explanation is that regarding the explosion of costs for professional made tattoos, the area of customers changed from outsiders of the society to people with average and high earnings.

**Keywords:** tattoos, alcohol consumption, self-esteem

### Abbreviation

AUDIT: Alcohol Use Disorders Identification Test

### 1. Introduction

For thousands of years, natives around the world have worn tattoos in a wide variety of cultures. It is amazing that these ancient rituals have been revived in a modern world. Nowadays, tattoos are becoming more and more popular among the population, today it is a veritable fashion trend [1, 2]. Few people choose a tattoo by pure chance, most of them think for weeks, months or even

years about the motive that they wear in their skin. The question of whether tattoos can say something about a person's personality is therefore absolutely justified. On the other hand, there are many stereotypes and prejudices against carriers of such distinctive signs, because individuals with body-modifications often stand out of the masses.

In the past, tattoos served as status symbols, tribal affiliation, religious beliefs and sanctions [3, 2, 4]. In ancient Greece or by the Romans, tattoos were used to mark slaves, criminals or prostitutes. At the time of the Holocaust, prisoners were tattooed under duress with a registration number on their arms as a stigma for their placement e.g. in Auschwitz, the concentration camp of the Nazis [2, 3, 6].

Today, the most important motive to wear piercings and tattoos as body jewellery is to underline the individuality and to look more attractive; but several other reasons for tattoos exist, e.g.: fashion, individuality, personal narrative, physical stamina (e.g. enduring pain), group affiliation or engagement, resistance (e.g. protest, rebellion), sexual motivation, addiction, spiritual and cultural tradition [7, 8].

Even nowadays tattoos are still a cause of controversy. Comparing to the former ideals only a few centuries ago, many people in our days continue to have prejudices and associate tattoos with crackpots, drug addicts or criminals. Forbes [9] observed a strong association with risk taking behaviours, in particular frequent marijuana and alcohol use and lower social compliance. In contrast, in a study by Brooks, Woods, Knight, and Shrier [10], more than half of the wearers of body jewellery had a lower than average risk for drug and alcohol use. Either, in another

study by Braithwaite, Robillard, Woodring, Stephens, and Arriola [11], it was shown that tattooed people were more likely to use alcohol, marijuana, antidepressants and sedatives; there was a high correlation between piercings and frequent alcohol consumption. Burger & Finkel [12] found out in their study that the correlation between body modification and risk taking behaviour is independent of self-esteem. Many people make body changes because they suffer from low self-esteem, disappointment and bashfulness [13, 14, 15]. According to Armstrong, body changes provide an opportunity to increase self-esteem and to gain acceptance with others by allowing body jewellery to identify with a group. In 2015 a study [16] found that women with four or more tattoos have higher self-esteem than those women with less than four, or none tattoos. Wohlrab, Fink, Kappeler & Brewer [17] found that tattooed women were judged as less healthy and attractive than non-tattooed women.

In a study by Resenhoeft, Villa, and Wiseman [18] one can read that especially the type of tattoo has negative effects on the judgement of personality by others. Hawkes, Senn, and Thorn [19] presented descriptions of fictitious young women; those with tattoos were rated more negative. In a French study by Guéguen [20], young men ( $M=20.6$  years) and women ( $M=20.2$  years) who left a bar were asked, if they wore tattoos and/or piercings or not and a breath-alcohol-tester measured their alcohol consumption. It was found that participants with body-modifications had higher alcohol consumption than people without any body decoration. Finding these results, Guéguen [20] proposed that tattoos could serve as a signal of alcohol consumption for parents, teachers and physicians. One result of this study was that people with only one tattoo were very similar to people without any tattoos in terms of alcohol drinking. Another result of this French study found out that more drinking alcohol was associated with more tattoos [20]. Swami and Furnham [21] concluded that women with tattoos were considered to be more unattractive, promiscuous, and more alcohol-consuming.

This view that tattooed people drink more alcohol than non-tattooed people is widespread in today's society and has grown into a new stereotype. In addition, there is the prejudice that tattooed people suffer from a low self-esteem and undergo a change in order to polish their personality up, whatever the cost will be. On the other hand, according to Baumeister, Campbell, Krueger, and Vohs [22], low self-esteem is not only negative, but can help to avoid dissocial, aggressive or criminal behaviour.

Based on the findings of the current literature, the study presented here aims to analyse the differences in alcohol consumption and self-esteem between tattooed and non-tattooed people. In addition, correlations between the number of tattoos and the amount of alcohol consumption as well as the self-esteem were examined.

## 2. Methods

### 2.1. Participants

To achieve a large and representative sample, an online questionnaire was used, which included questions about alcohol consumption, the self-esteem, socio-demographic information and questions about tattoos. The survey was distributed in social networks (e.g. *Facebook*) and was spread through a snowball-system. In addition, the online-link was also sent to different tattoo studios by e-mail. The investigations were carried out with two standardized test:

### 2.2. Alcohol Use Disorders Identification Test (AUDIT)

The “*Alcohol Use Disorders Identification Test*” was developed by a six-country WHO collaborative project as a screening tool for dangerous and harmful alcohol consumption. The AUDIT contains ten items that cover the areas: alcohol consumption, drinking habits and alcohol-related problems. The first three questions of the AUDIT provide information about the drinking habits. The data for the questions one to three are related to standard drinks (for examples: beer, wine) [23]. An example of this topic would be, “*How often do you drink alcohol?*”, this question can be answered by using a five-level response scale (“never”, “about 1 time per month”, “2-4 times a month”, “2-3 times a week” or “4 times or more a week”). Questions four to six examine the properties of alcohol dependence. An example of this would be “*How many times did you notice last year that you were drinking more than you wanted?*” The response to this question can be selected from the following options: “*Never*”, “*Rarer than once a month*”, “*Once a month*”, “*Once a week*” or “*Daily or almost daily*”. Questions seven to ten address potential problems associated with drinking alcohol.

Questions seven and eight have the same answer options as questions four to six. Questions nine and ten are answered by using a three-level response scale (“*never*”, “*yes, but not last year*”, or “*yes, last year*”). All questions are given three to five answer options. The total points of the AUDIT can reach between zero and a maximum of 40 points. The WHO recommends a cut-off value of eight points. According to the authors, the AUDIT achieved a reliability of 0.97. In a study by Rumpf, Hapke, Meyer and John [24] the AUDIT achieved a reliability of 0.75 in the general population. Beginning from a value of eight points, the authors [5] indicate problematic alcohol consumption with the risk of alcohol dependence. At this cut-off value the test-specificity to recognize alcohol dependence is 0.78 [23]. The AUDIT is a reliable and valid screening tool for the detection of dangerous and harmful alcohol consumption [25].

### 2.3. Multidimensional Self-Esteem Scale

The “*Multidimensional Self-Esteem Scale*” [26] consists of 32 items. The total value is formed from the general

self-esteem as well as from body-related self-esteem, to which a total of six subscales are assigned. The general self-esteem scale contains the social, emotional and performance-related assessment of one's own individual. This comprises the following subscales: emotional, performance-related and social self-esteem. The social self-assessment is again divided into security in contact and dealing with criticism. The body-related self-esteem scale is composed from the physical attractiveness and the sportiness. The subscales are each composed of five items; only the emotional self-value scale comprises seven items. The first 15 questions, regarding intensity, use a seven-step response scale ("not at all" to "very"). The remaining 17 questions are recorded on a seven-level response scale ("never" to "always"). The reliability of the total scale is 0.92; for the subscales the reliability is between 0.77 and 0.88. The Multidimensional Self-Esteem Scale is a reliable and valid measuring instrument for recording various facets of self-esteem [26].

#### 2.4. Tattoos

For information on tattoos, three items were created by the authors. For example, for the question: "*Do you have tattoos?*" the answer options were "Yes" or "No". Another question was, "*How many tattoos do you have?*". Here the participants were asked to provide a specific number of tattoos. Furthermore, the last question asked for the tattooed body site: "*On which body parts do you have tattoos?*". Here, several answer options were given ("hands / arms", "legs / feet", "back", "neck", "face", "chest", "belly", "intimate area", "throat").

#### 2.5. Statistical analyses

The data were analysed for statistical significance using the non-parametric *Mann-Whitney U test* for independent

groups (tattooed and non-tattooed) and the correlation by *Spearman*. A value of  $p \leq 0.05$  was considered to be significant.

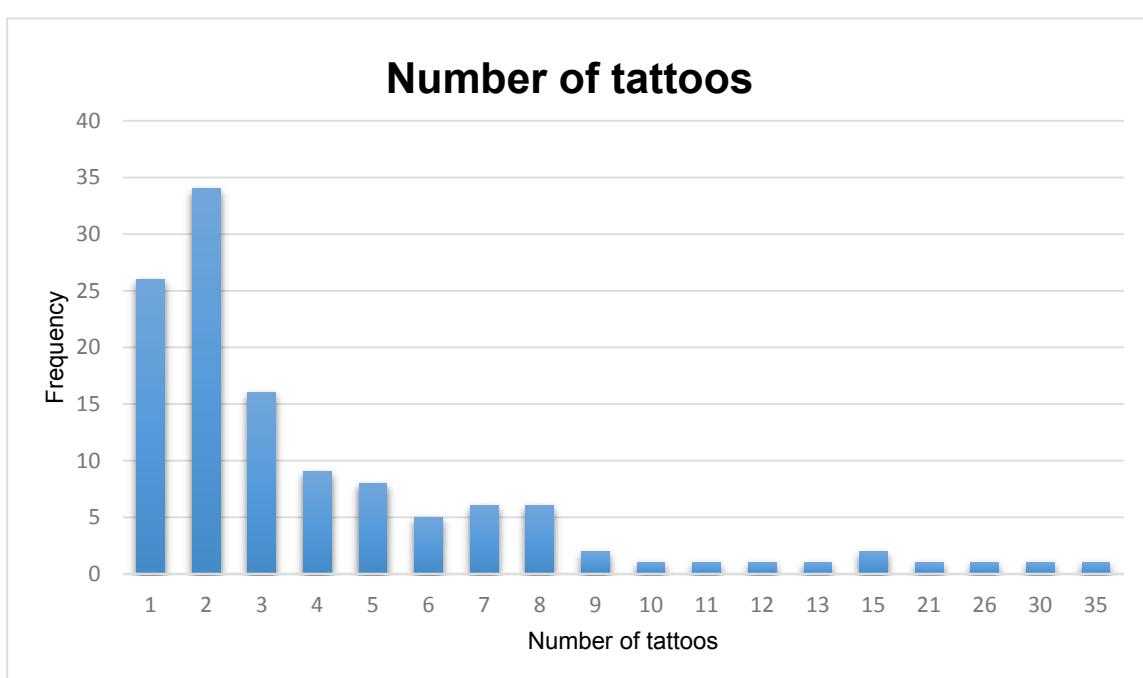
### 3. Results

#### 3.1. Sample

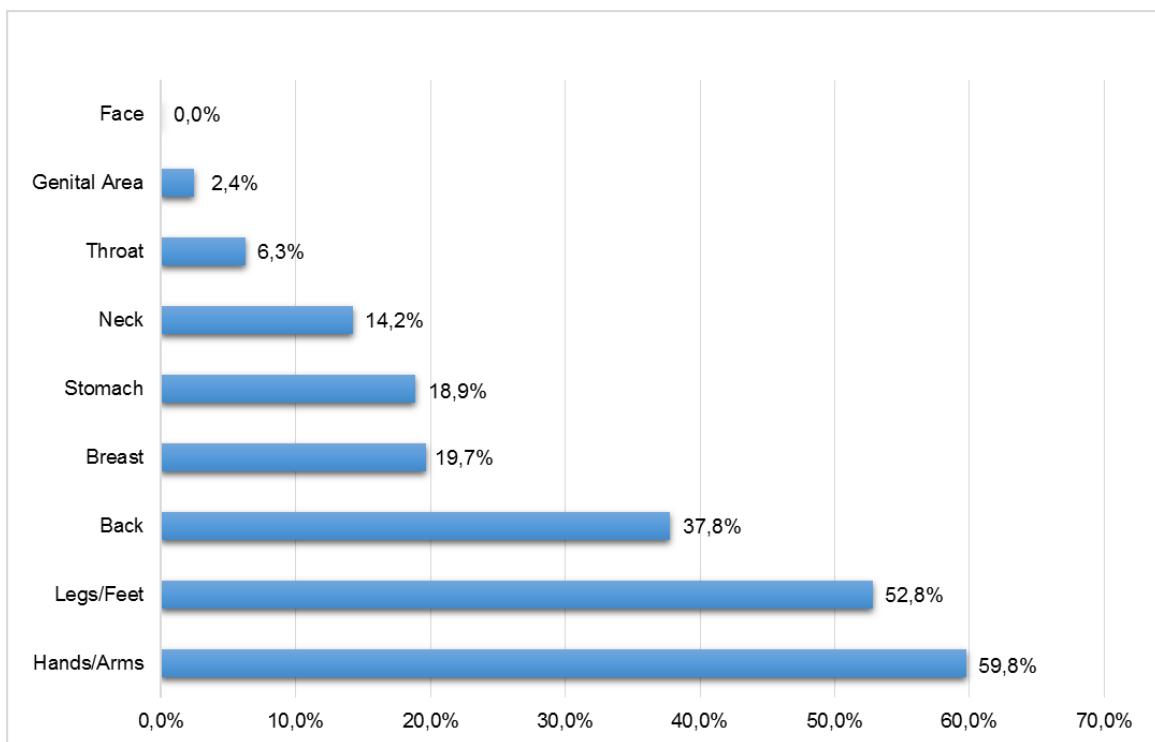
A total of 228 German people participated in this study. The survey aimed at persons of any age with or without tattoos. The research contained 80.7% ( $n=184$ ) female and 19.3% ( $n=44$ ) male participants. The distribution of the gender is unbalanced, but there were no significant gender-related differences in the main independent variables, therefore the data were analysed in total. The age range of this study was between 17 and 65 years ( $M=26.41$ ,  $SD=9.03$ ). The average age of the tattooed persons was 26.39 years ( $SD=8.09$ ) with a minimum age of 18 and a maximum age of 55 years. The group of non-tattooed participants had a general average age of 26.44 years ( $SD=10.14$ ).

#### 3.2. Tattoos

The tattooed participants had an average of 4.46 tattoos ( $SD=5.35$ , min. 1, max. 35 tattoos). Figure 1 shows the frequency distribution of the number of tattoos. The median was 3 and the 75% percentile was 5 tattoos. See Figure 2 for a complete overview of the tattooed areas of the body. The most tattooed woman owned 15 tattoos and the most tattooed man had 35 tattoos. There was no difference between women and men in regard of the number of tattoos, ( $U(101, 21)=1014,500 p > 0.05$ ) [26]. The mean value for the tattooed women ( $M=4.95$ ,  $SD=4.45$ ) are insignificantly higher than those of the tattooed men ( $M=4.36$ ,  $SD=5.54$ ).



**Figure 1:** Distribution of the frequency per number of tattoos (N = 127; 5 tattooed persons had not answered this question).



**Figure 2:** Positions of the tattoos (N = 127). The participants could do several replies. 101 tattooed persons had more than one tattoo.

### 3.3. First hypothesis: Tattooed people drink more people drink more alcohol than non-tattooed people

The result of consuming alcohol by tattooed and non-tattooed people was not statistically significant ( $U [127,101]=5677$ ,  $p>0.05$ ). The results of this hypothesis received a value of  $p=0.135$ . The tattooed participants achieved in the AUDIT an average of  $M=0.47$  ( $SD=0.38$ ); and the non-tattooed participants of  $M=0.57$  ( $SD=0.46$ ). Therefore the hypothesis was not confirmed, i.e. tattooed people do not drink significant more alcohol than non-tattooed people.

### 3.4. Second hypothesis

Tattooed participants have a lower self-esteem compared with non-tattooed people.

The difference between tattooed and non-tattooed people in regard to self-esteem was not statistically significant ( $U [127,101]=6377$ ,  $p=0.88$ ). The tattooed participants achieved in the *Multidimensional Self-Esteem Scale* an average of  $M=0.47$  ( $SD=0.38$ ); and the non-tattooed participants of  $M=0.57$  ( $SD=0.46$ ). No difference between tattooed and non-tattooed people concerning the self-esteem was found in the results of this study.

### 3.5. Third hypothesis

The number of tattoos correlates significantly positive with alcohol consumption and self-esteem.

The result of alcohol consumption and the number of tattoos was not statistically significant ( $r [122]=0.001$ ,  $p=0.496$ ). The association between the number of tattoos and self-esteem was small but significant ( $r [122]=0.166$ ,

$p=0.034^*$ ). This can be regarded as evidence for a connection between the number of tattoos and the self-confidence of a person.

## 4. Discussion

The results show that there are no or little differences between tattooed and non-tattooed people in terms of alcohol consumption and self-esteem, which indicates that today tattoos are no sign for more drinking or a lower self-esteem. Furthermore, the results of this study could not find any correlations between the number of tattoos and the amount of alcohol consumption. The results of this study does not support the field-study carried out by Guéguen [20]. Similiarly, the results of Braithwaite and co-workers [11], as well as of Swami and Furnham [21] could not be supported. Overall, the results of our study contradict the data of older studies on the same topic.

Basically, it can be stated that tattooed people do not have a significantly lower self-esteem than non-tattooed people. One possible explanation might be that one needs a higher level of self-esteem to get tattooed, despite the risk to be stigmatized by the others. But the results of the tattooed group were slightly lower than of the non-tattooed participants. It cannot be completely ruled out, of course that tattooed people have the same level of self-esteem as non-tattooed people just because their tattoo enhances their self-worth. but this theory is far-fetched and there is no data to prove it. There are only some hints in literature that a part of tattooed persons defeat their self-insecurity by purchasing a tattoo and minority-complexes may have vanished through getting a tattoo [7]. To investigate this hypothesis, a study before and

after the first stinging of a tattoo would have to be carried out in orders to show if the self-esteem increases due to the tattoo. In addition, it should also be taken into account that around 10% of the total population are tattooed, and, among young people, the rate is much higher, because tattoos are a fashion-wave. It seems to be unlikely that 10% of people try to enhance their fragile or low self-esteem through tattoos; there are too many completely different motives to decorate the own body.

The only significant result that could be drawn from this study is that the number of tattoos correlated positively with self-esteem. The result of this study supported the research carried out by Koch and co-worker [16]. However, the causality is unknown. On the one hand, it can be possible that the self-confidence increases with to the number of tattoos, because it gives the subject positive feedback from the peer group and makes her or him feel more attractive. On the other hand, it is just as good a statement that people, who already have a healthy self-esteem, adorn themselves with more tattoos, because they do not care about the opinion of the public. Maybe, in both explanations, the tattoos serve as an enhancement of self-confidence. The more tattoos a person owns, the more comfortable he or she feels. But it must be recognized that the correlation coefficient is small.

One main reason to find no significant differences is the fact that tattoos became very expensive not only here in Germany, but in most other countries. Nowadays, tattoo-artists underlie several regulations e.g. in regard to hygiene, copyright or paying taxes. Even a small tattoo often costs more than hundred Euros, larger tattoos more than 1,000- Euros and the currently modern 3D-Tattoos can achieve costs in the level of five-numbered Euros. Adolescence with a small purse doesn't have enough money to pay for this. So, at present, in case of professional tattoos, the area of customers changed from outsiders of the society to people with average and high earnings.

## 5. Conclusions

Many people draw conclusions about the alcohol consumption or the self-esteem of a tattooed person on the basis of prejudices and stigmas. In summary, this study provides evidence that tattooed and non-tattooed people do not differ in regard of alcohol consumption and self-esteem. In view of the number of tattooed people in the world, there are hardly any major differences to be expected. Tattoos have become a fashion wave and the carriers of body modifications are nowadays no more a marginalised group of behaviour, especially since tattoos have become extremely expensive. Most people choose an artful tattoo to underline their individuality, to express their personality and to look more attractive. The connection to criminal behaviour, alcohol and drug addiction or to inferiority complexes and other psychopathological deviations seems therefore unlikely. Therefore, especially older studies are outdated by the modern trend.

## 6. Acknowledgements

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## 7. Conflict of Interest

The authors declare that they have no conflict of interest.

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