# Tattoo Practice Among Students in Babylon University

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**ABSTRACT:**

**BACKGROUND:**

Tattoo is the introduction of colored ink into the skin, and considered a form of body art for centuries. Its prevalence is rising among adolescents and young adults, mainly in western societies despite being linked to certain health risks.

**AIM OF THE STUDY:**

To assess the characteristics of tattoo practice among college students, and to highlight its association with certain characteristics of the students.

**METHODS:**

The study is a cross-sectional study conducted on college students in Babylon University from January 2019 through June 2019. Data were collected using an anonymous self-administered questionnaire based on Armstrong Team Tattoo Attitude Survey (ATTAS).

**RESULTS:**

The study included (1932) students with a mean age of (21.05 ± 1.69) years, majority being females (70.3%). Tattoo practice was present in (8.3%) of them, with significantly higher proportion among males (P<0.001). Tattoo was significantly more prevalent among students with tattooed family members and friends (P<0.001), odds ratio=3.09 for family members with tattoos and 5.19 for friends with tattoo.

**CONCLUSION:**

The study demonstrated the significant role of friends and families in the practice of tattoos, with friends having the highest role. Majority of students performed their first tattoo before college.

**KEYWORDS:** tattoo; college; students

## INTRODUCTION:

Tattoo prevalence has been rising significantly in the last 25 years all over the world[1], making it an important sociocultural phenomenon globally[2]. This rise is mainly in western societies, making it a mainstream activity with a growing interest among adolescents and young adults[3, 4].

Tattooing is practiced among various social groups of different ages, occupations and social backgrounds, and from both genders[5]. However, younger age groups, including undergraduate college students, have increased interest and enthusiasm for tattooing[6], and are more likely to be attracted to perform this practice than older groups attributed to the changing lifestyle that involves close contact with many new friends and peers away from home[7, 8].

Health effects and consequences related to tattoo are caused either by tattoo ink pigments and their constituent materials, by local traumatic effect of the tattooing procedure on the skin, or by the contamination of tattooing instruments with certain pathogens[9].

One of the most significant health risks related to tattooing is the exposure to blood-borne viruses[10, 11]. The physical injury applied to skin during tattooing may facilitate transdermal transmission of viruses and bacteria, which occurs due to contamination of tattoo inks and instruments[12], as well as the lack of hygienic practices during the tattooing procedure[13].

Epidemiological studies have provided strong evidence that tattooing is an important risk factor for the transmission of Hepatitis B virus and Hepatitis C virus, and demonstrated an association between the presence of the infection and the number of performed tattoos[14, 15, 16]

Tattoo is also considered a potential mode of transmission for human immunodeficiency virus (HIV)[17].

In addition, several other infectious diseases have also been reported to be transmitted through tattooing, including syphilis, methicillin-resistant *Staphylococcus aureus*, and tetanus[18].

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## SUBJECTS AND METHODS:

This study is a descriptive cross sectional study conducted in University of Babylon / Al-Hilla - Babylon Province, and included undergraduate college students from the various colleges of the university, both in scientific and humanitarian fields of study. Data were collected from January 2019 through June 2019, and included undergraduate students from governmental colleges of Babylon university, including humanitarian and scientific study fields in various stages from stage 1 to stage 5. Students of stage 6 were not included because they attend their study sessions outside the university campus.

Data collection was performed using anonymous self-administered questionnaire that is based on Armstrong Team Tattoo Attitude Survey (ATTAS)[19] and further extended, optimized and translated to Arabic by an expert in order to be suitable for the study purpose and social acceptance.

Permissions were obtained from the Iraqi Board for Medical Specializations and the University of Babylon prior to the collection of data. Data were treated with confidentiality during collection and analysis, and students were asked not to write their names on the questionnaire form.

SPSS Software (version 23 for Linux® Operating System) was used to perform statistical analysis. Qualitative data were presented as frequencies and percentages, while continuous numerical data are presented as mean ± standard deviation. Comparisons of study groups were performed using the chi-square test. Information was presented in appropriate tables and diagrams. P-value of ≤ 0.05 was considered statistically significant.

## RESULTS:

The study included a total of 1932 undergraduate students from 14 different colleges. Age of participating students ranged from 18 to 29 years, with a mean age of 21.05±1.69 years. Female students comprised a majority (70.3%) of the study sample, while males comprised the remaining 29.7%. Forty-three percent of students had fathers with undergraduate degrees, while 66.4% had mothers with undergraduate degree.

Among the total sample of 1932 students, 160 of them stated they were tattooed, forming 8.3% of the study sample. The proportion of tattooed males was significantly higher than the proportion of tattooed females (Chi-square = 73.51, d.f. = 1, P-value < 0.001) (Table 1).

The highest proportion of tattooed students was found among 1st stage students (10.7%), followed by 4th stage students (10.6%), as detailed in table 2. There was a significant relationship between stage and tattoo status, P-value = 0.029.

Among students of humanitarian study fields (arts, law, physical education, fine arts, basic education, and Quran studies) the proportion of tattooed students was (12.96%), while among students of scientific study fields (information technology, science, engineering, medicine, dentistry, pharmacy, and nursing) the proportion was (5.92%), with statistically significant difference (P<0.001). Table 3.

There was a statistically significant relationship between tattoo practice among students and the practice of tattoo among relatives and family members (Chi-square = 43.26, d.f. = 1, P-value < 0.001). Table 4. The odds ratio for students who have tattooed family members to practice tattooing themselves was 3.09 (95% C.I. 2.18 – 4.39). Among those with tattooed relatives; more than one quarter (26.6%) had an uncle with tattoo, 25.4% had a brother with tattoo, 23.2% had a grandparent with tattoo, and 18.2% had a father with tattoo.

Interestingly, one-fifth (20.7%) of students who have tattooed friends do have tattoos themselves, while only 4.8% of students without tattooed friends have practiced tattoo themselves. The relation showed significant association between tattoo practice among students and having friends with tattoos (Chi-square = 110.20, d.f. = 1, P < 0.001) (Table 5). More than half of tattooed students (55.0%) had tattooed friends as well. Odds ratio for students who have friends with tattoos to practice tattoo themselves was 5.19 (95% C.I. 3.72 – 7.24). Approximately 60% of those students who reported having tattooed friends had more than one friend with tattoo.

The highest proportion of tattooed students (36.3%) had got their first tattoo during college, while 26.9% had got their first tattoo during primary school. More than half of the tattooed students (52%) had acquired their tattoos in tattoo centers, while (15%) had their tattoos done by their friends. The remainder did not specify.

Tattooed students who preferred to have their tattoos in exposed areas of the body formed (39.38%), while those who preferred to have their tattoos in covered areas formed (46.25%).

**Table 1: Tattoo status of participating students by gender.**

| Gender | Tattoo status No. (%) | | Total |
|---|---|---|---|
| | Tattooed | Non-tattooed | |
| Male | 95(16.6) | 479(83.4) | 574(29.7) |
| Female | 65(4.8) | 1293(95.2) | 1358 (70.3) |
| Total | 160(8.3) | 1772(91.7) | 1932 |
| $\chi 2 = 73.51$, d.f. = 1, P =0.0001* | | | |

* Significant at 0.05 level

**Table 2: Tattoo status of participating students by stage.**

| College Stage | Tattoo status No. (%) | | Total |
|---|---|---|---|
| | Tattooed | Non-tattooed | |
| 1 | 53(10.7) | 443(89.3) | 496(25.7) |
| 2 | 46 (7.0) | 612(93.0) | 658(34.1) |
| 3 | 27 (7.2) | 349(92.8) | 376(19.5) |
| 4 | 29(10.6) | 246(89.4) | 275(14.2) |
| 5 | 5 (3.9) | 122(96.1) | 127(6.5) |
| $\chi 2 = 10.8$, d.f. = 4, P =0.029* | | | |

* Significant at 0.05 level

**Table 3: Tattoo status of participating students by study field.**

| Study field | Tattoo status No. (%) | | Total |
|---|---|---|---|
| | Tattooed | Non-tattooed | |
| Scientific | 76(5.9) | 1208(94.1) | 1284 |
| Humanitarian | 84(13.0) | 564(87.0) | 648 |
| Total | 160(8.3) | 1772(91.7) | 1932 |
| $\chi 2 = 28.13$, d.f. = 1, P <0.001* | | | |

* Significant at 0.05 level

**Table 4: Tattoo status of participating students and their family members.**

| Tattoo practice among family members | Tattoo status No. (%) | | Total |
|---|---|---|---|
| | Tattooed | Non-tattooed | |
| Present | 56 (17.6) | 263 (82.4) | 319 (16.5) |
| Absent | 104 (6.4) | 1509 (93.6) | 1613 (83.5) |
| Total | 160 (8.3) | 1772 (91.7) | 1932 |
| $\chi^2 = 43.26$, d.f. = 1, P = 0.0001* | | | |

* Significant at 0.05 level

**Table 5: Tattoo practice compared to having tattooed friends.**

| Tattoo among friends | Tattoo status No. (%) | | Total |
|---|---|---|---|
| | Tattooed | Non-tattooed | |
| Present | 88 (20.7) | 338 (79.3) | 426 (22.0) |
| Absent | 72 (4.8) | 1434 (95.2) | 1506 (78.0) |
| Total | 160 (8.3) | 1772 (91.7) | 1932 |
| $\chi^2 = 110.20$, d.f. = 1, P = 0.0001* | | | |

* Significant at 0.05 level

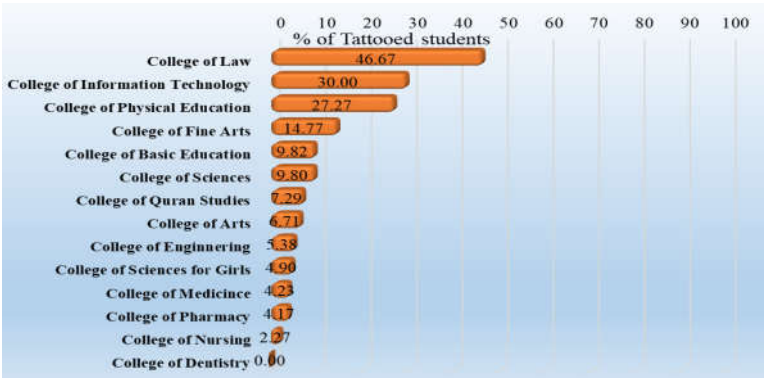


**Figure 1: Proportions of tattooed students by college.**

## DISCUSSION:

Age of participating students ranged from (18-29) years with a mean age of (21) years. First stage students had the highest proportion of tattoo among other stages. This may suggest an increasing trend of practicing tattoos among college students and younger age groups in Iraqi colleges, but further studies are necessary to investigate this suggestion.

Tattoo practice among male students in the present study was found to be significantly more prevalent than that among female students. A similar finding was reported by Sidoti et al. who observed that male students were significantly more likely to practice tattoos than female students in scientific colleges[7]. But contrasting results were given by Quaranta et al. who found that tattoo practice was more prevalent among female students than in male students, but this finding was not statistically significant[6].

This gender-related difference in tattoo practice among students participating in the present study is possibly due to the strong influence of social, cultural, and religious rules of the Iraqi community on the decisions and actions of its members, but may also be due to the denial of the practice by female students.

Three out of the four colleges with the highest proportions of tattooed students were humanistic colleges, namely college of law, college of physical education, and college of fine arts; while all the four colleges with lowest proportions of tattooed students were scientific colleges (medicine, pharmacy, nursing, and dentistry). This may reflect the role of the curriculum of scientific fields of study in understanding the health-related risks of tattoo. In a contrasting manner, Sidoti et al. reported that students with tattoo were significantly higher in scientific colleges compared to humanistic colleges[7]. They did not provide a particular explanation for their finding.

Family practice of tattoo had significant influence on the practice of students participating in the study. Students with tattooed family members were three times more likely to practice tattoo than those with no tattooed family members. This result is supported by the finding described by Firmin et al. who reported that respondents who have family influence favorable for tattoo were more likely to be interested in tattoo themselves[20]. However, almost half of the tattooed students in the present study had negative reactions from their families after performing their tattoos.

Interestingly, the role of friends practice of tattoo was higher than that of family members. Friends practice of tattoo significantly influenced the students practice of tattoo, and students with tattooed friends were 5 times more likely to perform tattoo themselves. More than half of students with tattooed friends had more than one friend with tattoo, reflecting the mutual influences exchanged among friend groups. The study by Roberts et al. stated that the number of tattoos among college students was positively correlated to the number of friends with tattoos, reflecting the influence of friendship networks on students practice of tattoo[8]. In the present study, negative reactions of friends towards tattoo practice were reported by less than one-quarter of tattooed students, which is less than half the negative reactions of the families reported by tattooed students.

About two-thirds (63.47%) of students obtained their first tattoo before college, while the remaining one-third performed their first tattoo during college. Roggenkamp et al. had stated that (80%) of students obtained their first tattoo before the age of 18 years[21], while Quaranta et al. reported that (39.9%) had performed tattoo when they were underage (<18 years)[6]. This difference between the present study and other studies may suggest that the age at performing the first tattoo in Iraqi students is younger than in other countries.

## CONCLUSION:

The study demonstrated the significant role of friends and families in the practice of tattoos, with the highest role being that of friends. The majority of students performed their first tattoo before college. The highest proportion of tattooed students was found among first stage students, and colleges of humanitarian study field had a significantly higher proportion of tattooed students compared to colleges of the scientific field of study.

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