

ORIGINAL ARTICLE

Self-Tattooing from a Forensic Medicine Perspective: Its Relationship with Self-Harm, Psychopathy, and Criminal Patterns

Adli Tıp Perspektifinden Öz-Dövme Davranışı: Kendine Zarar Verme, Psikopati ve Suç Örüntüsü ile İlişkisi

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ABSTRACT

Aim: This study aims to examine self-inflicted tattooing behaviors performed by individuals using primitive tools such as sewing needles and to evaluate the sociodemographic, psychological, and criminal characteristics associated with this group.

Methods: The study was conducted in 2020 with 200 tattooed individuals whose criminal responsibility was under forensic evaluation. Participants who exhibited self-inflicted tattooing behavior (n = 66) and those who did not (n = 134) were assessed through semi-structured interviews and psychometric tests. The applied scales included the Barratt Impulsiveness Scale-11, Levenson Self-Report Psychopathy Scale (LRSP), Body Image Scale, Rosenberg Self-Esteem Scale, and Hamilton Anxiety Scale (HAM-A).

Results: Participants in the self-inflicted tattoo group were more likely to have lower educational attainment, irregular or no work history, institutional upbringing, and earlier exposure to crime. Psychometric evaluations revealed significantly higher levels of impulsivity, psychopathic tendencies, anxiety, negative body image, and lower self-esteem in this group. All individuals with self-inflicted tattoos reported at least one form of self-harming behavior.

Conclusions: Self-inflicted tattooing is not merely an aesthetic choice but may reflect deeper psychosocial problems and criminal risk factors. These tattoos can provide valuable clues regarding an individual's psychological profile and life history during forensic assessments. Thus, systematic inclusion of self-inflicted tattoo evaluation in medico-legal examinations is recommended.

Keywords: Impulsive behavior, self-concept, self-injurious behavior, tattooing

ÖZ

Amaç: Bu çalışma, bireylerin kendi vücutlarına dikiş iğnesi gibi ilkel araçlarla yaptıkları öz-dövmeleri inceleyerek, bu grubun sosyodemografik, psikolojik ve kriminal özelliklerini değerlendirmeyi amaçlamaktadır.

Gereç ve Yöntemler: Çalışma, 2020 yılında cezai sorumluluğu değerlendirilen 200 dövmeli birey ile gerçekleştirilmiştir. Öz-dövme davranışı sergileyen (n=66) ve sergilemeyen (n=134) bireyler yarı yapılandırılmış görüşmeler ve psikometrik testlerle değerlendirilmiştir. Ölçekler arasında Barratt Dürtüsellik Ölçeği-11, Levenson Öz Bildirim Psikopati Ölçeği, Beden Algısı Ölçeği, Rosenberg Benlik Saygısı Ölçeği ve Hamilton Anksiyete Değerlendirme Ölçeği yer almaktadır.

Bulgular: Öz-dövmelerin tamamı dikiş iğnesi ile yapılmış olup, genellikle el sırtı ve ön kol iç yüzü gibi dominant olmayan vücut bölgelerine yerleştirilmiştir. Öz-dövme grubunda eğitim düzeyi düşüklüğü, düzensiz veya hiç çalışma öyküsü, aile dışı kurumsal bakımda büyüme ve daha erken yaşta suçla tanışma gibi risk faktörleri daha sık görülmüştür. Psikolojik değerlendirmelerde ise öz-dövmesi olan bireylerin, diğer gruba kıyasla anlamlı düzeyde daha yüksek dürtüsellik, psikopatik eğilim, anksiyete, olumsuz beden algısı ve düşük benlik saygısı gösterdiği belirlenmiştir. Ayrıca bu bireylerin tamamının en az bir tür kendine zarar verici davranış geçmişi bulunduğu görülmüştür.

Sonuçlar: Öz-dövme davranışı yalnızca estetik bir tercih değil, psikososyal sorunların ve kriminal riskin dışavurumu olarak değerlendirilmelidir. Öz-dövmeler, adli tıpta bireyin yaşam öyküsü, ruhsal durumu ve davranış örüntüleri hakkında önemli ipuçları sunabilecek niteliktedir. Bu bağlamda, öz-dövmelerin adli değerlendirme süreçlerine sistematik şekilde dâhil edilmesi önerilmektedir.

Anahtar Kelimeler: Benlik saygısı, dövme, dürtüsel davranış, kendine zarar verme davranışı

INTRODUCTION

Tattooing is a permanent form of body modification that has been used for various purposes across many societies throughout history. The term “tattoo,” believed to be derived from the Polynesian word “ta-tatu,” has evolved into a global form of cultural expression today (1,2). In Turkish culture, tattooing was referred to with terms such as “tamga” or “daglama,” and held symbolic meanings among both the nomadic communities of Central Asia and the Janissaries of the Ottoman era (2-4). Historically, tattoos were not merely an aesthetic choice but also served as markers of religious affiliation, symbols of heroism, military allegiance, and even as tools of punishment (4,5).

In contemporary societies, the act of getting a tattoo is often motivated by a variety of reasons, including identity expression, commemoration of emotional experiences, aesthetic concerns, or a sense of social belonging (6-9). Tattoos are not only associated with outward appearance but are also closely linked to an individual’s life experiences, attitudes, and social context. Particularly among younger individuals, tattoos tend to gain meaning within the processes of identity formation and social interaction, and are at times used as tools for protest or as a means of emotional release (4,10,11).

Tattoos provide important insights into an individual’s psychological structure and level of social adaptation. Primitive or amateur tattoos typically differ from professional applications in that they exhibit simpler, more irregular, and spontaneous forms. Often emerging as expressions of uncontrolled emotional discharge or internal tension, these tattoos

have been associated in the literature with psychopathological and behavioral characteristics such as impulsivity, a history of trauma, self-harming behavior, and a tendency toward criminality (6,12-14). Furthermore, their frequent placement on visible areas of the body transforms them from merely personal marks into social expressions that reflect the individual’s internal conflicts or social positioning (11). In this respect, self-inflicted and other amateur tattoos offer valuable indicators not only in forensic medical evaluations but also in understanding an individual’s psychosocial background (15).

In the forensic context, tattoos can provide valuable information about an individual’s lifestyle, social background, and potential criminal tendencies. For instance, military-themed commemorative tattoos may indicate prior service in the armed forces, whereas tattoos created using primitive techniques and bearing antisocial or anti-authority content are often associated with prison experiences or a history of criminal behavior. Tattoos that include symbols such as cannabis leaves, hallucinogenic mushrooms, or ecstasy pills may signal substance use. It has also been observed that individuals who use illicit drugs frequently tattoo over areas of venous damage or scarring caused by injections, with tattoo placement intentionally chosen to conceal such marks. This suggests that tattoos may carry functional significance and should therefore be considered from multiple perspectives in forensic medical evaluations (6,16).

The method and circumstances under which a tattoo is applied can offer significant insights into an individual’s

lifestyle, psychosocial characteristics, and potential risk behaviors. The literature frequently emphasizes that tattoos created using amateur techniques and in non-sterile environments are commonly associated with prison conditions, substance dependence, antisocial personality traits, and lower socioeconomic status (6,10,12,17,18). Tattoos produced in isolated settings such as prisons or home environments, often using sharp instruments and improvised ink, tend to carry humorous, sexual, or aggressive content and are more frequently observed in individuals with antisocial tendencies (12,17). One specific subtype of amateur tattoo is self-inflicted tattooing, in which individuals typically use materials such as sewing needles (6,18,19).

The purpose of this study is to focus on self-inflicted tattoos, applied by individuals to their bodies using primitive tools such as sewing needles, and to compare this group with individuals who do not have such tattoos. From a forensic medicine perspective, the study aims to examine the associations between self-inflicted tattooing and sociodemographic, psychological, and criminal characteristics. The research will evaluate the potential links between this self-initiated permanent body modification and the individual's lifestyle, criminal history, psychological tendencies, and level of social integration. Furthermore, the study will investigate whether this specific type of tattoo can be used as an identifying feature during forensic autopsies. The findings are intended to contribute to the understanding of tattoos not only as tools for identification in forensic practice but also as indicators reflecting an individual's psychosocial background.

MATERIALS and METHODS

This article is based on a medical specialty thesis conducted with individuals who were referred in 2020 to a forensic psychiatry board for psychiatric evaluation of their criminal responsibility concerning alleged offenses. The participants were selected among those who were not found to have active psychopathology and who voluntarily agreed to take part in the study. The present article reflects one dimension of this academically multifaceted thesis, focusing on tattoos applied by individuals to their bodies. These behaviors were defined as "self-tattooing" and evaluated from a forensic medicine perspective. In this context, data obtained from a total of 200 tattooed individuals were analyzed, with the presence of self-tattoos serving as one of the main variables of the study.

Participants were asked where and how they had obtained their tattoos. Based on their responses, the study population was divided into two groups: those who had performed self-tattooing and those who had not. The total number of tattoos and the purposes for acquiring them were recorded for each participant. Among individuals reporting having self-inflicted tattoos, their dominant hand was noted, and the anatomical locations of these tattoos were documented.

Interviews lasted approximately 50 minutes on average and included a sociodemographic questionnaire and standardized psychometric scales. Additionally, participants' judicial records—both past and current—were reviewed using national legal databases and physical files. These included criminal records, detention

history, correctional documents, and warrants of arrest, where available.

Forensic and Sociodemographic Interview Form

This form was developed by the researchers specifically for this study. It served as a detailed data collection tool that included questions related to the participants' sociodemographic characteristics, such as age, educational level, marital status, employment history, and family background, as well as information regarding their prior criminal records, history of incarceration, and characteristics of their tattoos. The form was structured in alignment with the objectives of the study.

Barrat Impulsivity Scale-11 (BIS-11)

The Barratt Impulsiveness Scale-11 is a self-report instrument used to assess impulsivity. The scale consists of 30 items and yields four distinct subscale scores. The total score reflects the individual's level of impulsivity, with higher scores indicating greater impulsivity. The original version of the scale was developed by Barratt in 1959 to examine the relationship between anxiety and impulsivity. The Turkish adaptation and the validity and reliability study of the BIS-11 were conducted by Güleç and colleagues (20).

Levenson Self-Report Psychopathy Scale (LSRP)

The scale is a 26-item, four-point Likert-type self-report instrument developed to assess psychopathic tendencies. Participants rate each item on a scale ranging from 1 (strongly disagree) to 4 (strongly agree). The scale allows individuals to subjectively evaluate characteristics associated with psychopathy. The standardization and the

validity and reliability studies of the scale in Turkey were conducted by Engeler and Yargıç (21, 22).

Body Image Scale

The original version of the Body Image Scale was developed by Secord and Jourard in 1953. The Turkish adaptation of the scale was conducted by Hovardaoğlu in 1993. The scale aims to measure individuals' satisfaction with various parts of their body and different bodily functions. It consists of 40 items and does not include a cutoff score. Higher scores indicate greater dissatisfaction with one's body (23).

Rosenberg's Self-Esteem Scale (RSES)

The Rosenberg Self-Esteem Scale (RSES), originally developed by Morris Rosenberg, was adapted into Turkish by Çuhadaroğlu, who also conducted its validity and reliability study. The scale is a self-report inventory consisting of 63 multiple-choice items and includes 12 subcategories. In the present study, the subscales of self-esteem, depressive affect, and psychic isolation were utilized. There is no time limit for administering the scale (24).

Statistical Analyses

The data obtained in this study were analyzed using IBM SPSS Statistics for Windows, version 22.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were presented as mean±standard deviation (SD) and median (minimum–maximum) for continuous variables, and as frequency (n) and percentage (%) for categorical variables.

The normality of distribution for the parameters was assessed using the Kolmogorov–Smirnov and Shapiro–Wilk tests, which indicated that the data did

not follow a normal distribution. Therefore, non-parametric tests were employed for comparisons between groups. The Mann–Whitney U test was used to compare continuous variables between two independent groups, while the Pearson Chi-square test (χ^2) was used to assess associations between categorical variables. In cases where the expected cell frequency was less than 5, Fisher's Exact Test was applied. A p-value of less than 0.05 was considered statistically significant in all analyses.

All ethical principles were observed in the conduct of this study, which was carried out under applicable institutional and national ethical standards for research involving human participants. Ethical approval was granted by the Scientific Research and Education Committee of the Council of Forensic Medicine (Decision No: 21589509/2020/86, date: 25th February 2020). Additionally, the study was conducted under the Declaration of Helsinki (1964) and its subsequent revisions.

Participants were informed that the data collected would be used solely for scientific research and thesis purposes, and that participation would not influence their psychiatric assessment or forensic reporting in any way. Written informed consent was obtained from all participants through a signed informed consent form, and participation was entirely voluntary.

RESULTS

This study is based on interview data obtained from a total of 200 individuals, aged between 18 and 68 years, who were referred for forensic examination by judicial authorities due to criminal accusations

and had at least one tattoo on their bodies. Among the participants, 94% (n=188) were male and 6% (n=12) were female. The mean age of the sample group was 30.81 years.

Data obtained during the semi-structured interviews revealed that some individuals had inflicted tattoos upon themselves, outside of professional settings. Accordingly, it was found that 33.0% (n = 66) of the participants had at least one self-inflicted tattoo. All individuals who engaged in this practice reported using sewing needles, and some stated that the procedure had been carried out under prison conditions with shared needles. It was also observed that the majority of these individuals had multiple self-inflicted tattoos. Based on inquiries regarding hand dominance, the tattoos were predominantly located on the non-dominant side of the body and easily accessible areas such as the back of the hand and the inner forearm. These findings suggest that self-inflicted tattooing is shaped by functional and practical considerations in terms of both tool selection and anatomical localization.

In our study, it was determined that self-inflicted tattoos, applied by individuals using primitive tools such as sewing needles, differed significantly from all other types of tattoos. The most common forms observed were dot-like markings and indistinct blotches, while other examples generally consisted of inscriptions or simple geometric shapes. The majority of these tattoos were characterized by irregular outlines, interrupted or incomplete patterns, and a general lack of aesthetic or technical complexity. These findings suggest that self-inflicted tattoos typically reflect a spontaneous, unplanned, and amateur pattern of behavior.

An analysis of the reasons reported by participants with self-inflicted tattoos revealed that the three most frequently cited motives were: the intention to self-harm, a sense of belonging to a peer group, and impulsive, unplanned tattooing behavior without a specific purpose. Since individuals were allowed to indicate more than one motive, the total number of reported reasons exceeds the number of participants (Figure 1).

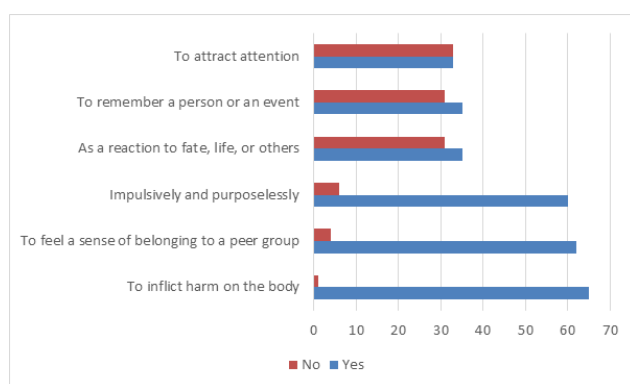


Figure 1. Distribution of tattoo acquisition motives among participants with self-inflicted tattoos

The findings indicate that there are statistically significant relationships between self-inflicted tattooing behavior and variables such as educational level, employment status outside of prison, and childhood living environment ($p < 0.05$).

In particular, lower levels of education were associated with a higher likelihood of engaging in self-inflicted tattooing. As the level of education increased, the prevalence of this behavior markedly declined. This trend was especially notable among individuals with a high school education or higher, for whom self-inflicted tattoos were found to be exceptionally rare ($p = 0.0001$).

A significant association was also observed between self-inflicted tattooing and employment status outside prison.

The behavior was less common among individuals with regular employment, whereas it was more prevalent among those who were unemployed or engaged in irregular work ($p = 0.0054$).

Similarly, a significant relationship was found between self-inflicted tattooing and the childhood living environment ($p = 0.0000$). Among individuals with self-inflicted tattoos, 51.5% ($n = 34$) had been raised in institutional care settings (e.g., orphanages, state care homes), whereas this rate was only 20.9% ($n = 28$) among those without such tattoos.

No statistically significant differences were found in terms of gender, marital status, or age ($p > 0.05$) (Table 1).

The comparison based on the presence of self-inflicted tattoos revealed statistically significant differences in the number of offenses, age at first offense, and duration of incarceration ($p < 0.05$).

Individuals with self-inflicted tattoos had a significantly higher mean number of offenses (17.5 ± 13.4) compared to those without such tattoos (6.9 ± 9.8), and this difference was statistically significant ($p = 0.0000$). Similarly, the age at which individuals committed their first offense was significantly lower in the self-inflicted tattoo group (15.0 ± 2.2) compared to the non-tattooed group, which had a mean age of 20.9 ± 7.0 years at first offense ($p = 0.0000$).

A statistically significant difference was also observed in terms of incarceration duration ($p = 0.0000$). While 40.9% of individuals with self-inflicted tattoos had served more than five years in prison, this proportion was only 13.4% among those without such tattoos. Conversely, 54.5% of individuals without self-inflicted tattoos had spent only 0–1

year in prison, whereas this proportion was just 16.7% in the self-inflicted tattoo group (Table 2).

It was found that all individuals with self-inflicted tattoos (100.0%) had a history of self-harming behavior, whereas 67.9% of those without such tattoos reported similar

behavior; this difference was statistically significant ($p < 0.001$). On the other hand, no statistically significant difference was observed between the groups in terms of suicide attempts. While 37.9% of individuals with self-inflicted tattoos reported having attempted suicide, this rate was 27.6%

Table 1. Relationship between the presence of self-inflicted tattoos and sociodemographic characteristics

		Self-Inflicted Tattoo Present (n=66)	Self-Inflicted Tattoo Absent (n=134)	P
Gender	Male	64 (97.0%)	124 (92.5%)	0.3435 ^a
	Female	2 (3.0%)	10 (7.5%)	
Education Level	No Primary school graduate	17 (25.8%)	15 (11.2%)	0.0001 ^b
	Primary school graduate	26 (39.4%)	32 (23.9%)	
	High school and above	3 (4.5%)	34 (25.4%)	
	Middle school graduate	20 (30.3%)	53 (39.6%)	
Employment outside prison	Regular employment	7 (10.6%)	42 (31.3%)	0.0054 ^b
	Irregular employment	20 (30.3%)	34 (25.4%)	
	No employment history	39 (59.1%)	58 (43.3%)	
Marital Status	Married	11 (16.7%)	27 (20.1%)	0.6901 ^b
	Not married	55 (83.3%)	107 (79.9%)	
Childhood Living Environment	Raised in a family environment	32 (48.5%)	106 (79.1%)	0.0000 ^b
	Raised in institutional care settings	34 (51.5%)	28 (20.9%)	
Age (mean ± SD)		31.5 ± 7.1	30.5 ± 7.8	0.2191 ^c

^aFisher's Exact Test was applied. ^bPearson Chi-Square Test (χ^2) was applied. ^cMann-Whitney U Test was applied. A significance level of $p < 0.05$ was considered statistically significant.

Table 2. Comparison of offense and incarceration variables according to the presence of self-inflicted tattoos

		Self-Inflicted Tattoo Present (n=66)	Self-Inflicted Tattoo Absent (n=134)	P
Number of Offenses (mean±SD)		17.5±13.4	6.9±9.8	0.0000 ^a
Age at First Offense (mean±SD)		15.0±2.2	20.9±7.0	0.0000 ^a
Prison Sentence Duration	Less than 1 year	11 (16.7%)	73 (54.5%)	0.0000 ^b
	1 to less than 5 years	28 (42.4%)	43 (32.1%)	
	5 years or more	27 (40.9%)	18 (13.4%)	

^aMann-Whitney U Test was applied. ^bPearson Chi-Square Test (χ^2) was applied. A significance level of $p < 0.05$ was considered statistically significant. SD: Standard deviation

among those without such tattoos; however, the difference did not reach statistical significance ($p=0.189$) (Table 3).

Significant associations were identified between self-inflicted tattooing behavior and various psychological scale scores. Individuals with self-inflicted tattoos had significantly higher total scores on the Barratt Impulsiveness Scale-II compared to those without such behavior ($p<0.001$). Similarly, scores on the Levenson Psychopathy Scale were also significantly elevated in the self-inflicted tattoo group ($p<0.001$). Body Image Scale scores were likewise significantly higher among individuals who engaged in self-inflicted tattooing. Furthermore, within the subscales of the Rosenberg Self-Esteem Inventory, both depressive

affect and psychic isolation scores were significantly higher among individuals with self-inflicted tattoos. Lastly, the total score on the Hamilton Anxiety Scale was also significantly elevated in this group (Table 4).

DISCUSSION

With the influence of technological advancements, the production of user-friendly tattoo machines and increased accessibility to such equipment have contributed to the widespread adoption of tattooing across various segments of society. As a result, tattooing has evolved from being a practice associated with certain subcultures into a commonly

Table 3. Distribution of self-harming behaviors and suicide attempts according to the presence of self-inflicted tattoos

		Self-Inflicted Tattoo Present (n=66)	Self-Inflicted Tattoo Absent (n=134)	P
Self-Harming Behavior	Present	66 (100.0%)	91 (67.9%)	0.000 ^a
	Absent	0 (0.0%)	43 (32.1%)	
Suicide Attempt	Present	25 (37.9%)	37 (27.6%)	0.189 ^b
	Absent	41 (62.1%)	97 (72.4%)	

^aFisher's Exact Test was applied. ^bPearson Chi-Square Test (χ^2) was applied. A significance level of $p < 0.05$ was considered statistically significant.

Table 4. Comparison of Barratt, Levenson, body image, Rosenberg, and Hamilton anxiety scale scores according to the presence of self-inflicted tattoos

	Self-Inflicted Tattoo Present Mean±SD (Median)	Self-Inflicted Tattoo Absent Mean±SD (Median)	P
Barratt Impulsiveness Scale-II	98.29±7.44 (99.5)	79.12±13.32 (79.5)	0.000
Levenson Self-Report Psychopathy Scale	85.27±8.71 (86.5)	63.22±16.15 (65)	0.000
Body Image Scale	112.82±8.26 (111)	80.83±15.21 (81)	0.000
Rosenberg Self-Esteem Scale	5.38±0.84 (6)	3.22±2.08 (4)	0.000
Depressive Affect (Rosenberg)	5.2±1.13 (6)	3.49±2.09 (4)	0.000
Psychic Isolation (Rosenberg)	1.83±0.38 (2)	1.14±0.88 (1)	0.000
Hamilton Anxiety Scale	19.56±4.73 (19)	12.57±6.84 (13)	0.000

Mann-Whitney U Test was applied. A significance level of $p < 0.05$ was considered statistically significant.

preferred form of body modification among individuals from diverse socioeconomic and sociocultural backgrounds (9). Nevertheless, recent studies indicate that suicide attempts are more prevalent among tattooed individuals, and significant associations have been found between tattoo presence and psychiatric diagnoses such as antisocial personality disorder. Furthermore, societal prejudices against individuals with tattoos continue to persist (25-28). The persistently high prevalence of tattooing within prison populations underscores the need for continued medico-legal and psychosocial exploration of the subject (28). In this context, the present study not only addresses the presence of tattoos but also focuses specifically on self-inflicted tattoos as a central area of interest.

Previous studies have shown that incarcerated individuals often acquire tattoos not through professional tattoo artists but by using improvised means or with the help of fellow inmates (17,29,30). The literature documents that prisoners create tattoos using materials such as melted plastic, grease, toothpaste, and pencil lead (18). Self-inflicted tattoos have been described in the literature as a form of auto-aggressive behavior, interpreted as an externalization of sadness, boredom, and inwardly directed anger that accompany the incarceration process in criminal individuals (17,31). In the current study, it was determined that 33% (n=66) of participants had applied at least one tattoo to themselves. Moreover, it was found that all of these individuals used sewing needles exclusively, and that the majority had multiple self-inflicted tattoos.

The findings of this study show that tattoos

applied by individuals themselves using sewing needles differ significantly from other forms of tattooing. These self-inflicted tattoos typically consist of dot patterns, blurred stains, simple geometric shapes, or text forms. They are characterized by irregular borders, disrupted linear continuity, and designs lacking aesthetic or technical complexity. In the literature, tattoos created without professional equipment—often using improvised tools such as sewing needles, paper clips, or guitar strings, and colored with unsterile substances like soot or pen ink—are defined as amateur tattoos. These tattoos are generally limited to letters, names, or basic symbols. It has also been emphasized that such tattoos frequently exhibit irregular lines, fading, patch-like deformations, and may present with infection or scarring (6). The tattoo types observed in our study align with these descriptions in terms of both technical and aesthetic features. This supports the notion that self-inflicted tattooing may serve not only as a psychosocial indicator but also as a valuable marker of an individual's living conditions and behavioral patterns in forensic medical evaluations.

Various studies in the literature have demonstrated that tattooed individuals exhibit higher levels of impulsivity compared to the general population. Lamberg reported that having tattoos is strongly associated with aggression and impulsivity (32). In another study conducted on the general population in Europe, tattooed and non-tattooed individuals were compared using the Barratt Impulsiveness Scale-II; significant differences were observed, particularly in the motor impulsivity subscale, indicating that tattooed individuals are more prone to act on impulse (33). Birmingham,

meanwhile, linked self-harming behaviors among individuals with visible tattoos to elevated levels of impulsivity and a greater tendency toward risk-taking (34).

In a study conducted by Swami, participants were interviewed both before and after getting a tattoo, and it was reported that their satisfaction with their physical appearance increased following the tattoo procedure (33). However, other studies conducted in different populations have found no significant effect of tattooing on body image (35–37). In the present study, as a novel contribution to the literature, individuals with self-inflicted tattoos (tattoos applied by the individuals themselves) were evaluated as a distinct group, and it was found that they demonstrated significantly lower satisfaction with their bodies on the Body Image Scale compared to those without self-inflicted tattoos. Several factors may underlie this finding: self-inflicted tattooing is often not motivated by aesthetic concerns but rather emerges as an impulsive behavior or a manifestation of psychological distress; it is typically performed using amateur techniques (e.g., sewing needles); the resulting tattoos tend to be scattered and irregular in shape, symmetry, and placement; and many are applied during childhood or adolescence, before the development of sufficient cognitive maturity. In this context, our study highlights a negative association between self-inflicted tattooing and body image, offering an important and original contribution to the literature on this specific type of tattoo.

Some studies have suggested that tattoo studio clients tend to have higher levels of self-efficacy and perceived competence, which may be associated with greater self-

esteem (38). In contrast, a study conducted by Özadmaca et al. using the Rosenberg Self-Esteem Scale found no significant effect of tattoo presence on self-esteem (37). In the current study, however, individuals with self-inflicted tattoos had significantly higher scores on the depressive affect and psychic isolation subscales of the Rosenberg Self-Esteem Inventory, as well as on the total Rosenberg scale, compared to those without self-inflicted tattoos. Additionally, the self-inflicted tattoo group scored significantly higher on the Hamilton Anxiety Scale. These findings suggest that tattooing behavior—particularly in its self-inflicted form—may be linked to an individual's psychological state. The fact that the most frequently reported motive for tattooing in the self-inflicted group was self-harm further supports this association. Therefore, self-inflicted tattoos should be considered concerning psychological symptoms such as self-esteem deficits, social withdrawal tendencies, and anxiety. In this regard, our study offers a novel contribution by examining not only the presence of tattoos but also the method of application as it relates to psychological well-being.

In a study conducted by Carroll et al., tattoo presence among adolescents was significantly associated with violent behaviors, including participation in physical fights, seeking medical treatment for injuries from fights, and carrying weapons. The researchers recommended further investigation into the other dimensions of tattooing that may be associated with violent tendencies (25). Similarly, in a study by Howell et al. involving incarcerated individuals, tattooed participants scored higher on social deviance scales and were

reported to display more pronounced psychopathic traits compared to their non-tattooed counterparts (28). In the present study, among tattooed individuals, those who engaged in self-inflicted tattooing were found to have entered the criminal justice system at a younger age, committed a greater number of offenses, and served longer periods of incarceration. This significant relationship between self-inflicted tattoos and criminal history suggests that such tattoos may serve as potential indicators of criminogenic risk.

The method of tattoo application and the conditions under which it is performed can offer important insights into a person's lifestyle, psychosocial characteristics, and engagement in risk behaviors. The literature frequently highlights that tattoos applied using amateur techniques in non-sterile environments are commonly associated with prison settings, substance use, antisocial personality traits, and lower socioeconomic status (10,12,17,18). Tattoos produced in isolated environments, such as prisons or private residences, using improvised tools and ink, often depict humorous, sexual, or aggressive content and are more frequently observed among individuals with antisocial tendencies (12,17). One such form is self-inflicted tattooing, typically performed with materials such as sewing needles (6,18,19). In this study, individuals with self-inflicted tattoos had significantly higher mean scores on the Levenson Psychopathy Scale, suggesting a potential association between self-inflicted tattooing and psychopathic traits, which aligns with the antisocial patterns described in the literature.

Carroll et al. identified tattoo presence as a strong indicator of risky behavior

among adolescents, including a significant relationship with suicidal ideation and attempts (25). While our study did not find a statistically significant association between self-inflicted tattoos and suicide attempts, various forms of self-injurious behaviors were observed in all 66 individuals with self-inflicted tattoos. These behaviors included burning the skin with cigarettes, banging against walls, self-cutting with razors, pouring acid on the skin, and self-immolation. A majority of participants described their tattoos not as aesthetic or symbolic expressions, but rather as direct extensions of their self-harming behavior. These findings suggest that, unlike conventional tattoos, self-inflicted tattoos may serve as a means of experiencing or regulating emotional pain.

It was found that a significant portion of self-inflicted tattoos had been applied within prison environments, often using shared sewing needles. This practice increases the risk of infectious disease transmission and constitutes a serious threat to both individual and public health. As a result, infection control protocols specifically addressing tattooing practices in high-risk environments such as prisons should be developed and implemented. Additionally, public health education efforts should be initiated to raise awareness and reduce the health risks associated with these practices.

Self-inflicted tattoos were found to be located predominantly on the non-dominant side of the body. The literature on this topic is limited, and there is a need for more comprehensive research examining the placement, orientation, and design features of self-inflicted tattoos on the body. Specifically, developing a systematic "atlas of self-inflicted tattoos" that maps these

patterns based on reflexive motor behavior could offer valuable insights in both forensic medicine and behavioral analysis. Such an atlas could also serve as a practical tool in forensic autopsies, particularly in cases where scene investigation is limited or identifying information is scarce, to help infer the individual's dominant hand. This study is intended to serve as a preliminary contribution to guide future research in this field.

Limitations

This study was conducted with individuals referred by judicial authorities for forensic evaluation, representing a specific and limited population. Consequently, the sample predominantly consisted of individuals with a criminal background. As such, the findings cannot be assumed to reflect the demographic or psychosocial characteristics of the general population. This limitation should be acknowledged as a significant methodological constraint that affects the generalizability of the results.

CONCLUSION

This study demonstrates that tattoos self-inflicted by individuals are not merely physical marks, but also meaningful indicators of a person's psychological, social, and criminal background.

1. Significant differences were identified in the number of offenses, duration of incarceration, and age at first offense among individuals with self-inflicted tattoos; these individuals tended to become involved in crime at an earlier age and served longer prison sentences.

2. Psychological indicators were more

pronounced among individuals who engaged in self-inflicted tattooing: this group exhibited higher levels of impulsivity (BIS-11), psychopathic tendencies (LSRP), lower self-esteem, increased anxiety, and more negative body image.

3. Self-inflicted tattoos differ from professional tattoos in both technical and aesthetic aspects. They are generally simple, irregular, and located on the non-dominant side of the body, which reflects both ease of application and characteristics of auto-aggressive behavior.

4. All individuals with self-inflicted tattoos (100%) exhibited at least one form of self-injurious behavior (e.g., burning with cigarettes, cutting with razors), and most of these tattoos were not aesthetic but rather served as a means of experiencing and expressing pain.

5. Self-inflicted tattoos may serve not only as identifiers in forensic practice but also as multidimensional indicators of an individual's psychosocial and criminal history. This finding highlights the need for future development of new reference tools, such as a forensic tattoo atlas.

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