

Original Article

Demographic Evaluation of Oro-Dental Self-Injury for Insurance Deception; Evaluation of the Cases Referred to Shiraz Forensic Medicine Center

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KEY WORDS

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ABSTRACT

Statement of the Problem: Nonsuicidal self-inflicted injuries are socially unacceptable and may cause mild to severe damages.

Purpose: This study aimed to evaluate the demographic features of the subjects with orodental self-injuries referred to a forensic medicine center in Shiraz, Iran.

Materials and Method: This cross-sectional study evaluated 51 participants (49 men and 2 women) with orodental injuries referred to forensic medicine administration. Oro-dental self-injury was detected in the subjects, based on the last forensic criterion of self-injuries, considering their history, clinical examinations, and panoramic radiographs.

Results: The findings of this study revealed that dental self-injuries were more prevalent among married men from urban areas with secondary education levels. Most of the cases were due to the monetary compensation received. In the majority of cases, a hard object was used for this self-injury. Moreover, no statistical association was observed between the economic status and orodental self-injury.

Conclusion: This study concluded that dental self-injury could be regarded as an unplanned incident because no significant correlation was observed between the participants, their economic status, and the type of dental trauma. Furthermore, detailed investigations on the latent variables are required.

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Introduction

Self-injury is defined as a behavior causing deliberate destruction or damage to the body tissues, which is not associated with a conscious intent to commit suicide [1-2]. A nonsuicidal self-inflicted injury is socially unacceptable (in comparison with behaviors such as piercing), repetitive, direct (to differentiate it from lesions induced by indirect methods such as the deliberate ingestion of a drug), and induces mild or moderate damages [3].

The most common self-injuries include scratches, bites, cuts, burns, and blunt injuries [4-5] and the most frequently affected anatomical targets are the hands,

head, oral, and perioral tissues, and neck [6-7]. In certain literatures, orodental self-injury is classified as functional or organic [8]. In functional self-injury, the individuals provoke injury deliberately in order to seek attention, whereas in organic self-injury, the individuals inflict injury unconsciously in a compulsive manner with no specific intent [9-10]. Self-injury behaviors are attributable to automatic and social reinforcement that may be positive, for example, to achieve certain objective [11-12].

Biting is the most common mode of self-injury, which affects the lips and hands [5, 13]. The most affected sites include lower lip and tongue, and in certain

cases, soft tissue lesions are accompanied by self-inflicted tooth dislocation or an avulsion. Moreover, oral self-injury is associated with lesions in other anatomic areas of the body in 20% of the cases [14-15]. Fewer studies are available on the demographic aspects of orodental self-injuries with large sample sizes. This study aimed to evaluate the orodental self-injury in the subjects referred to Shiraz forensic medicine center.

Materials and Method

In this cross-sectional study, all orodental self-injuries referred to the Shiraz city forensic medicine center from 2013 to 2015 were evaluated. Among the patients referred to the general administration of forensic medicine for investigation of body damages and determination of the amount of wergild of their teeth, mandibles, maxillofacial bones, the cases revealed self-injuries were included in this study for further investigations. Forensic medicine administration consults with an expert legal dentist to evaluate orodental damages. Legal dentist can detect trauma and differentiate it from the self-inflicted orodental traumas. Finally, it was confirmed by the judicial authority. The patients filled a questionnaire including the demographic data (age, gender, education level, economic status, job status, and so on), reason for referring to forensic medicine administration, and self-statement of orodental injuries. Notably, the psychological factors were not investigated and orodental self-injury was detected in the subjects, based on the last forensic criterion regarding self-injuries, considering their history, clinical examinations, and panoramic radiographs.

Statistical Analyses

Obtained data were analyzed by the statistical package for the social sciences (SPSS), version 19.0, and Minitab® 17.0. Parametric data were compared with the t-test and nonparametric data were evaluated by the chi-square test. The *p* Values < 0.05 were considered as statistically significant.

Results

Collectively, 51 participants of orodental self-mutilation including 49 men (96.07%) and 2 women (3.92%) were included in this study. A majority of the individuals were in the age group of 31–40 years (Figure 1). Table 1 demonstrates the demographic data of individuals with orodental self-injuries. Eleven participants (21.56%) revealed a criminal past history. Hard objects were the most frequent objects used for self-mutilation (50; 98.03%).

The pattern of dental self-injury included subluxation of teeth in 2 individuals (3.92%), dental evulsion in 20 people (39.21%), and subluxation + dental fracture in 29 individuals (56.86%). Eleven individuals (21.56%) had injuries in their teeth, 10 (19.60%) had self-injuries in face and teeth, and 30 (58.8%) revealed injuries in teeth + other parts of their body.

The anterior teeth were most frequently injured in 37 (72.54%) individuals, posterior teeth in 7 (13.72%) individuals, and both posterior and anterior teeth in 7 (13.72%) cases. Collectively, 168 teeth were involved in this study considering self-mutilation.

Fifty (98.03%) individuals had used hard objects, and in one person (1.96%), a thrown object was used for

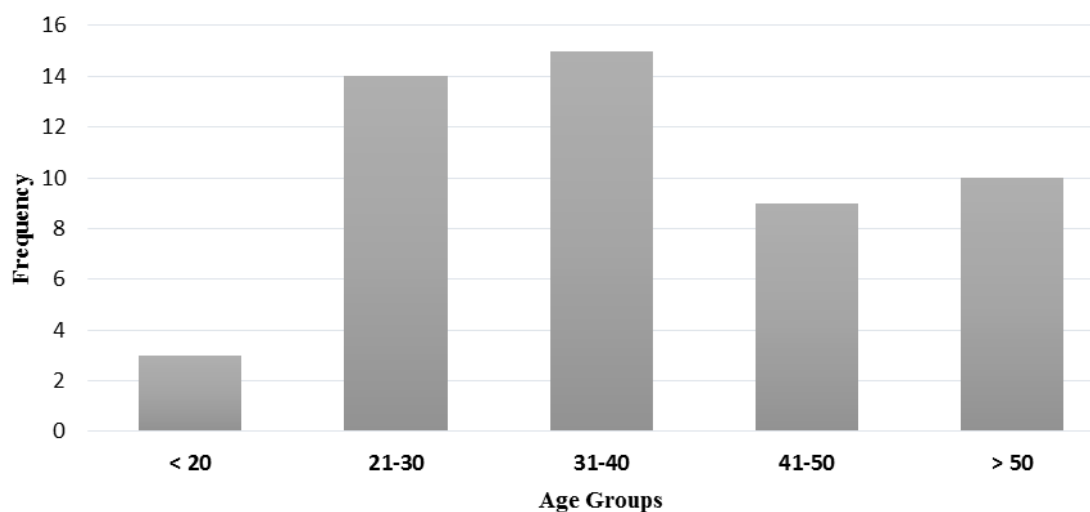


Figure 1: Age group of individuals underwent dental self-mutilation

Table 1: Demographic features of individuals with oro-dental self-injury

	Variable	Frequency(%)
Gender	Male	49(96.07%)
	Female	2(3.92%)
Age group	< 20	3(5.88%)
	21-30	14(27.50%)
	31-40	15(29.41%)
	41-50	9(17.64%)
	> 50	10(19.60%)
Education level	Illiterate	12(23.52%)
	<Diploma	16(31.37%)
	Diploma	17(33.33%)
	Bachelor of Sciences	4(7.84%)
	Master of sciences and more	2(3.92%)
Marital status	Single	19(37.25%)
	Married	29(56.86%)
	Divorced	3(5.88%)
Involved ana-tomic area	Teeth	11(21.56%)
	Teeth and other facial parts	10(19.60%)
	Teeth and other parts of the body	30(58.8%)
Living place	City	34(66.66%)
	Village	17(33.33%)
Criminal history	Yes	12(23.52%)
	No	39(76.47%)
Dental injury	Laxation	2(3.92%)
	Evulsion	20(39.21%)
	Fracture and laxation	29(56.86%)
Used objectives	Hard objects	50(98.03%)
	Thrown objects	1(1.96%)
Aim of compli-ance	Insurance	41(80.39%)
	Battle and criminal discount	6(11.76%)
	Battle and reciprocal compli-ance	4(7.84%)
Involved teeth	Anterior teeth	37(72.54%)
	Posterior Teeth	7(13.72%)
	Both	7(13.72%)

self-mutilation. Motivation of self-injuries in individuals included insurance payments in 41 (80.39%) individuals, battle, and criminal discount in 6 (11.76%) participants, and battle and reciprocal compliance in 4

(7.84%) cases. Statistical analyses revealed that location, and criminal history had no significant effects on the types of dental injuries ($p > 0.05$). No statistically significant difference was observed in the economic status including age, gender, education level, marital status, and motivation for self-injury (Figure 2).

Discussion

Fewer studies are available on criminal self-mutilation, whereas self-injury includes a broader spectrum including laceration, scratches, bone fracture, and burns. Self-injury is more frequent in the younger individuals, in people with lower economic status, and in individuals with psychological health problems [2, 16-18].

In several recent cases, the most frequent anatomic targets included the upper and lower limbs (arms, fore-arms, hands, femur, and legs) [19]. In our study, dental and facial self-mutilations were done by hard objects. Incidence of self-mutilation in the normal population has been estimated to be 4% in clinical 21% in psychological cases; this frequency in men is thrice as compared to women [20]. In this study, since the individuals were referred to forensic medicine administration and they were not normal population, it was not possible to estimate the frequency of self-injury. Self-mutilation is more frequent during puberty and in young people [21]. In this study, dental self-mutilation was mostly observed in people aged 31-40 years. In a previous study, it has reported that self-mutilation is more probable in individuals with a previous history of self-mutilation [22]. Our study focused on dental self-mutilation and on the

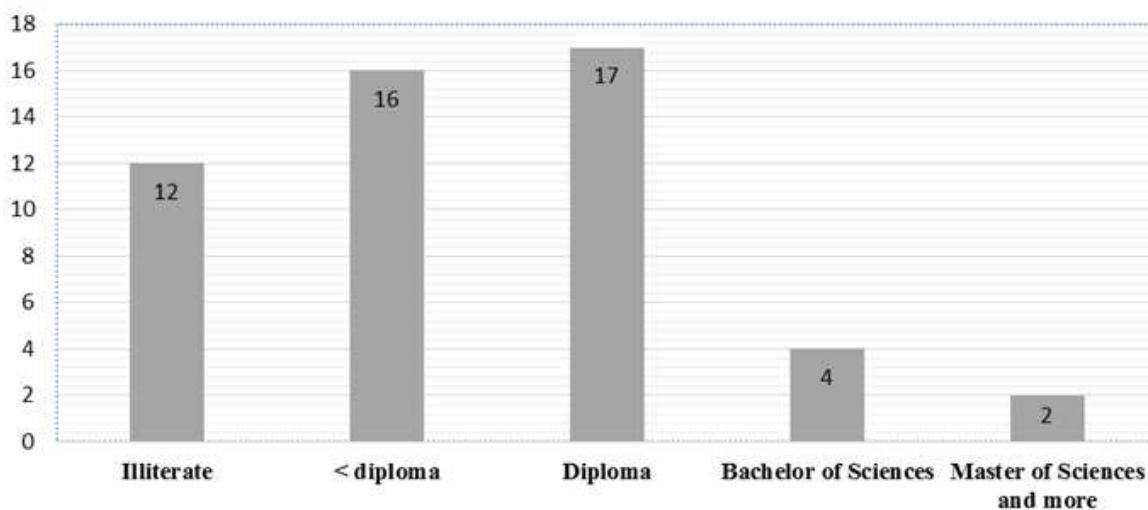


Figure 2: Education levels in individuals underwent dental self-mutilation

self-injuries of maxillofacial parts. In this study, severe cases of self-mutilation such as dental fractures with hard objects were observed. Dental self-mutilations and self-injuries in other parts of the body were also reported. The most frequent used objects were hard objects. A major reason for self-mutilation in this study was to get the insurance money, which may be related to the sociodemographic status of the individuals. Certain studies have reported that psychological signs, such as depression, were more frequent in the self-injury cases referred to forensic medicine administration [17, 23].

In our study, majorities of the individuals were married and presumably, the family requirements and lower economic status of individuals were major factors leading to self-injuries. Surprisingly, none of our participants revealed any psychological signs or disorders, and this finding is different from other studies [24-25].

A limitation of this study included lack of detailed evaluation of the clinical and paraclinical findings of the cases. Further studies with more details and larger sample sizes are needed to confirm the results of our study, and to define the criterion for determination of different aspects of self-mutilation, particularly, dental self-mutilation. Notably, the psychological factors were not investigated in the present investigation and the self-injuries were discriminated in the subjects, based on the history and clinical examinations and forensic criteria regarding self-injuries.

Based on the findings of this study, the majority of individuals had a tendency to self-harm in order to receive insurance benefits. Hence, improvement in the economic status of individuals along with the enhancement of people learning about consequences of self-mutilation can potentially decrease the incidence of self-mutilation.

Conclusion

This study concluded that dental self-injury could be regarded as an unplanned incident because no significant correlation was observed between the participants, their economic status, and the type of dental trauma. Furthermore, detailed investigations on the latent variables are required.

Conflict of Interest

The authors declare that they have no conflict of interest.

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