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Nonsuicidal Self-Injury in a Community Sample of Older Children and Adolescents of Mexico City

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Introduction. In Mexico, as in other countries, studies do not distinguish between attempted suicide and suicidal and nonsuicidal self-injury (NSSI). The aim of this study was to investigate self-injury and its prevalence using several definitions, in addition to studying the frequency of the proposed DSM-5 criteria for NSSI in adolescent girls and boys.

Methodology. The study was observational, descriptive, cross-sectional, and comparative using a nonrandomized sample of adolescent girls and boys from official high schools who completed the self-injury questionnaire.

Results. The participants were 533 older children and adolescents with a mean (SD) age of 13.37 (0.95) years, age range 11 to 17 years, and 54% female sex distribution. The prevalence of NSSI defined according to proposed DSM-5 criteria was 5.6% (N=30) and, according to a broad definition using only item 51 ("Do you hurt yourself without intending to end your life?"), 17.1% (N=140). Prevalence defined by the number of events in the last month (1-3 events) was 9.9% (N=53), in the last 6 months (1-3 events), 11.6% (N=62), and in the last year (5 events), 12.6% (N=67). The age at onset was 11.9 (1.39) years (range 6-15 years). Most DSM-5 criteria were more frequent in girls than boys.

Conclusions. Suicidal and nonsuicidal self-injury are frequent in the community. Important points for decision-making in schools and medical practice are discussed.

Keywords: Self-injury, Prevalence, Suicide, DSM-5, Instruments

Actas Esp Psiquiatr 2014;42(4):159-68

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Autolesiones sin intención suicida en una muestra de niños y adolescentes de la ciudad de México

Introducción. En México como en otros países los estudios no distinguen entre los intentos de suicidio (IS) de las autolesiones con (A+) y sin intención de suicidio (A-). El objetivo de este estudio fue investigar las autolesiones y su prevalencia a partir de varias definiciones, además de estudiar la frecuencia de los criterios propuestos del DSM-5 para las autolesiones sin intención suicida en adolescentes de ambos sexos.

Metodología. El estudio fue observacional, descriptivo, transversal, comparativo a partir de una muestra no probabilística de adolescentes de ambos sexos de escuelas secundarias oficiales que contestaron la cédula de autolesiones.

Resultados. Los participantes fueron 533 adolescentes con una edad (M=13.37, DE 0.95) y un rango de 11 a 17 años, 54% del sexo femenino.

La prevalencia de (A-) definida con los criterios de autolesiones propuestos para el DSM-5 fue del 5.6% (N=30), con una definición amplia a partir de sólo el ítem 51(¿Te lastimas sin la intención de quitarte la vida?) fue del 17.1% (N=140), en el último mes (1-3 eventos) fue del 9.9% (N=53), en los últimos 6 meses (1-3 eventos) fue del 11.6% (N=62) y en el último año (5 eventos) fue del 12.6 % (N=67). La edad de inicio fue de 11.9 ±1.39, (rango 6-15 años). La mayoría de los criterios del DSM-5 tuvieron mayor frecuencia en las niñas que los niños.

Conclusiones. Las autolesiones con y sin intención de suicidio son muy frecuentes en la comunidad. Se discuten aspectos importantes para la toma de decisiones en el ámbito escolar y médico.

Palabras clave: Autolesiones, Prevalencia, Suicidio, DSM-5, Instrumentos

INTRODUCTION

Self-injury without suicidal intent (NSSI) is defined as deliberate tissue damage that an individual inflicts on his or her own skin or body without any intention to die.[1]

With time, a percentage of adolescents gradually incorporate ideas that include the intention to die, but many studies in the literature have investigated general self-injury behavior without exploring suicidal intent.

The prevalence of self-injury throughout life is 15% to 17% among adolescents in the community[2] and 40% to 80% among adolescents in the psychiatric clinical population.[3]

Many studies have detected a higher prevalence of self-injury in female patients compared to male patients with a ratio of 4:1.[4,5] These differences lose statistical significance when a strict definition of nonsuicidal self-injury is used.[4,6,7]

Self-injury is important due to its association with psychiatric disorders such as anxiety,[8] depression,[9] borderline personality disorder,[10] substance use and abuse,[11] autism, schizophrenia, attempted suicide and consummated suicide,[12,13] and a history of being a victim of bullying,[14-16] or physical and/or sexual abuse.[17,18]

In Mexico, as in other countries, most studies do not distinguish between suicide and nonsuicidal self-injury.[19,20] The problem is that the Diagnostic and Statistical Manual of Mental Disorders DSM-IV classified self-injury without suicidal intent as only a symptom of borderline personality disorder. The gradual increase in the number of adolescents without this comorbidity, however, sustained the proposal to include self-injury as a disorder in the upcoming edition of the Diagnostic and Statistical Manual of Mental Disorders DSM-5 with a precise definition and criteria of frequency and dysfunction.[21] The idea is to differentiate attempted suicide from nonsuicidal self-injury because they are often confused.[22] Separating these two conditions will favor research and an appropriate therapeutic approach. Moreover, having a precise definition will allow comparison between studies, thus reducing the enormous variability in prevalence rates.

The purpose of this study was: 1) to study the prevalence of self-injury using various definitions: a) the proposed DSM-5 criteria, b) a broad criterion, and c) prevalence at 1 month, 6 months, and 1 year; and 2) to study the frequency with which the proposed DSM-5 criteria occur in adolescents of either sex in the general population.

METHODOLOGY

Type of study: observational, descriptive, cross-sectional comparative study.

The sample was not randomized and was formed by a community group of older children and adolescent students of both sexes aged 11 to 17 years old from Tlalpan high schools. After the parents heard the purpose of the study, they agreed to allow their children to participate and the adolescents also consented.

ETHICS

This project was approved by the research ethics committee of the pertinent hospital. Before completing the questionnaire, adolescents were informed about the procedure for obtaining care in the hospital and gave their consent.

INSTRUMENTS

Self-injury Questionnaire

The self-injury questionnaire consisted of 63 items with a yes-no response, 4 multiple-choice questions, and 2 open response items. It explores the prevalence of suicidal and nonsuicidal self-injury at 1, 6, and 12 months and throughout life. It examines the method, topography, addictive component, and self-injury triggering and attenuating mechanisms, and age at onset of the behavior. It also explores the behavioral components (DSM-5 criteria) of self-injury, such as: (B1) psychological precipitants, (B2) concerns, (B3) emergencies, (B4) contingent responses, (C) functional deterioration, and explanatory variables. The instrument was designed on the basis of the proposed DSM-5 criteria[23] for nonsuicidal self-injury. Responses can also be organized into a diagnostic algorithm consistent with the above proposal, allowing exploration of suicidal intent in the present and past.

Statistical Analysis

Several definitions were used to investigate the prevalence of self-injury without suicidal intent.

1. Prevalence of nonsuicidal self-injury (NSSI) according to the DSM-5 algorithm[21]

   - Five or more days of self-inflicted injury in the past year
   - Absence of suicidal intent

   Association of deliberate self-injury with at least two of the following:

   B1. Negative thoughts or feelings before self-injury

   B2. A period of concern prior to the act

B3. Frequent self-injury impulses

B4. Contingent responses. Relief of negative feelings/ cognitive status or interpersonal difficulties, or induction of a positive emotional state.

Satisfaction of criterion C or D as well

C. Functional deterioration in an interpersonal, academic, or other area.

D. The behavior does not occur exclusively in psychotic, delusional, or intoxicated states.

2. Prevalence within a given period: one month (1-3 events), item 42: "In the past month, have you deliberately hurt yourself between 1 and 3 times?", 6 months (1-3 events) item 43: "In the last 6 months, have you deliberately hurt yourself between 1 and 3 times?" and one year (5 events) item 44: "In the last year, have you hurt deliberately yourself 5 times or more?"

3. Prevalence of nonsuicidal self-injury (NSSI) according to a broad definition using only item 51 ("Do you hurt yourself without intending to kill yourself?").

Sex differences were analyzed using the chi-square test with the sex variable and all the DSM-5 variables.

RESULTS

Participants were 533 older children and adolescents, 54% female, with an average age of 13.37 (0.95) years, and an age range of 11 to 17 years.

The prevalence of nonsuicidal self-injury was 5.6% (N=30) using the proposed DSM-5 criteria, and 17.1% using a broad criterion of item 51 alone ("Do you hurt yourself without intending to kill yourself?"). The prevalence was 9.9% (N=53) in the last month (1-3 events) using item 42, 11.6% (N=62) in the last 6 months (1-3 events) using item 43, and 12.6% (N=67) in the last year (5 events) using item 44. The age at the onset of the self-injury habit for the total sample was 11.9 (1.39) years, with a reported age range of 6 to 15 years. Sex differences are shown in Table 1.

Table 1 Sex differences in the prevalence of self-injury without suicidal intent

Definition of Prevalence	Boys	Girls	Total	p
DSM-5 N(%)	6(3.6)	14(7.5)	20(5.7)	0.11
Item 51 N(%)	25(9.9)	66(23.6)	91(17.1)	0.001
1 month (1-3 events) N(%)	17(6.7)	36(12.9)	53(9.9)	0.018
6 months (1-3 events) N(%)	18(7.1)	44 (15.7)	62(11.6)	0.002
1 year (5 events) N(%)	19(7.5)	48(17.1)	67(12.6)	0.001
Age at onset, Mean (SD)	11.9(0.29)	11.9 (0.14)	11.9(1.3)	0.82
Range	8-15	6-15	6-15	

X^2 or Student's t test used to calculate the differences between groups

SELF-INJURY AND SEX DIFFERENCES

Self-injury method

The most common methods of nonsuicidal self-injury were: skin cutting (N=120, 22.5%), excoriation (N=119, 22.3%), and biting (N=108, 20.3%). When analyzed by sex, the most common methods of self-injury in girls were skin cutting (N=87, 31.1%), marking the skin with objects (N=69, 24.6%), and excoriation (N=66, 23.6%), and in boys, excoriation (N=53, 20.9%), biting (N=45, 17.8%), and skin pinching (N=40, 15.8%). Only three methods of self-injury differed significantly in frequency between the sexes (Table 2): skin cutting, skin pinching, and marking the skin with objects, which were more prevalent in female than in male adolescents.

Topography

The most common body sites for self-injury were forearms and wrists (N=90, 16.9%), arms and elbows (N=45, 8.4%), and thighs and knees (N=34, 6.4%). When analyzed by sex, the most common self-injury body sites in girls were forearms and wrists (N=69, 24.6%), arms and elbows (N=29, 10.4%), and thighs and knees (N=22, 7.9%), and in boys, forearms and wrists (N=21, 8.3%), arms and elbows (N=16, 6.3%), and thighs and knees (N=12, 4.7%). The only body areas that showed significant differences in frequency between the sexes were forearms and wrists, which were more prevalent in female than male adolescents (Table 3).

Psychological precipitants

The most common psychological precipitants of self-injury in the total sample of adolescents were previous feelings or ideas of anger (N=108, 20.3%), previous negative feelings (N=96, 18.0%), and previous depressive feelings or thoughts (N=94, 17.6%). When analyzed by sex, the most common psychological precipitants in girls were previous angry (N=77, 27.5%), negative (N=67, 23.9%), and depressive ideas or feelings (N=60, 21.4%), while in boys the most common were depressive (N=34, 13.4%), angry (N=31, 12.3%), and negative ideas or feelings (N=29, 11.5%). All the psychological precipitants that showed statistically significant differences by sex were more frequent in girls (Table 4).

Table 2 Sex differences in the self-injury mechanism

Self-injury mechanism	Item	Boys N (%) 253 (47.5%)	Girls N (%) 280 (52.5%)	Total N (%) 533 (100%)	Chi-square or Fisher's exact test	p
Cutting	**A**	**33 (13.0)**	**87 (31.1)**	**120 (22.5)**	**24.76**	**0.001**
Excoriating skin with objects	A	25 (9.9)	37 (13.2)	62 (11.6)	1.43	0.23
Embedding objects under skin or nails	A	8 (3.2)	16 (5.7)	24 (4.5)	2.03	0.111
Skin pinching	**A**	**40 (15.8)**	**63 (22.5)**	**103 (19.3)**	**3.81**	**0.05**
Marking skin with objects	**A**	**20 (7.9)**	**69 (24.6)**	**89 (16.7)**	**26.76**	**0.001**
Excoriation	A	53 (20.9)	66 (23.6)	119 (22.3)	0.52	0.46
Peeling skin	A	25 (9.9)	27 (9.6)	52 (9.8)	0.009	0.92
Burning skin	A	11 (4.3)	8 (2.9)	19 (3.6)	0.85	0.24
Pulling hair, eyelashes or eyebrows	A	9 (3.6)	17 (6.1)	26 (4.9)	1.78	0.18
Pulling out nails	A	13 (5.1)	23 (8.2)	36 (6.8)	1.99	0.15
Pressing on organs	A	5 (2.0)	5 (1.8)	10 (1.9)	0.02	0.56
Biting	A	45 (17.8)	63 (22.5)	108 (20.3)	1.82	0.17
Hitting	A	35 (13.8)	49 (17.5)	84 (15.8)	1.35	0.24

Statistically significant data are shown in bold (p<0.05)

Table 3 Sex differences in topography

Topography	Boys N (%) 253 (47.5%)	Girls N (%) 280 (52.5%)	Total N (%) 533 (100%)	Chi-square or Fisher's exact test	p
Forearms and wrists	**21 (8.3)**	**69 (24.6)**	**90 (16.9)**	**25.29**	**0.001**
Arms and elbows	16 (6.3)	29 (10.4)	45 (8.4)	2.79	0.094
Thighs and knees	12 (4.7)	22 (7.9)	34 (6.4)	2.15	0.14
Abdomen	6 (2.4)	5 (1.8)	11 (2.1)	0.22	0.63
Face	5 (2.0)	4 (1.4)	9 (1.7)	0.01	0.90
Head	6 (2.4)	7 (2.5)	13 (2.4)	0.009	0.57

Statistically significant data are shown in bold (p<0.05)

Contingent response to self-injury

The most common types of diminished intensity of affective states and/or negative cognitions as a result of self-injury in the total sample of adolescents were relief from negative feelings (N=77, 14.4%), relief from personal difficulties (N=61, 11.4%), and diminished feelings of tension during and after self-injury (both N=47, 8.8%). When analyzed by sex, the most common self-injury impulses in girls were relief from negative feelings (N=54, 19.3%), relief from personal difficulties (N=44, 15.7%), and relief from ideas (N=37; 13.2%), and in boys the most common impulses were relief from negative feelings (N=23, 9.1%), diminished feelings of tension after self-injury (N=19, 7.5%), and relief from personal difficulties (N=17, 16.7%). Relief from negative feelings was the most common self-injury impulse reported in both sexes. All but one of the contingent responses to self-injury, ie, diminished feelings of tension after self-injury, differed significantly in frequency between the sexes (Table 5).

Table 4 Sex differences in psychological precipitants

Psychological precipitants*	Item	Boys N (%) 253 (47.5%)	Girls N (%) 280 (52.5%)	Total N (%) 533 (100%)	Chi-square or Fisher's exact test	p
Negative feelings	**B1**	**29 (11.5)**	**67 (23.9)**	**96 (18.0)**	**13.98**	**0.001**
Depressive feelings	**B1**	**34 (13.4)**	**60 (21.4)**	**94 (17.6)**	**5.84**	**0.01**
Anxiety	**B1**	**18 (7.1)**	**44 (15.8)**	**62 (11.7)**	**9.65**	**0.002**
Tension	**B1**	**14 (5.5)**	**38 (13.6)**	**52 (9.8)**	**9.83**	**0.002**
Anger	**B1**	**31 (12.3)**	**77 (27.5)**	**108 (20.3)**	**19.12**	**0.001**
Stress	**B1**	**13 (5.1)**	**31 (11.1)**	**44 (8.3)**	**6.17**	**0.03**
Self-criticism	**B1**	**10 (4.0)**	**26 (9.3)**	**36 (6.8)**	**6.05**	**0.01**
Previous resistance	**B2**	**25 (9.9)**	**47 (16.8)**	**72 (13.5)**	**5.42**	**0.02**
Necessity	**B3**	**16 (6.3)**	**39 (13.9)**	**55 (10.3)**	**8.30**	**0.004**

Statistically significant data are shown in bold (p<0.05)
*Defined as feelings/thoughts prior to inflicting self-injury

Table 5 Sex differences in contingent response

Contingent response*	Item	Boys N (%) 253 (47.5%)	Girls N (%) 280 (52.5%)	Total N (%) 533 (100%)	Chi-square or Fisher's exact test	p
Relief from						
Negative feelings	**B4**	**23 (9.1)**	**54 (19.3)**	**77 (14.4)**	**11.17**	**0.001**
Negative ideas	**B4**	**8 (3.2)**	**37 (13.2)**	**45 (8.4)**	**17.37**	**0.001**
Personal difficulties	**B4**	**17 (6.7)**	**44 (15.7)**	**61 (11.4)**	**10.61**	**0.001**
Induction of						
Positive feelings	**B3**	**12 (4.7)**	**31 (11.1)**	**43 (8.1)**	**7.17**	**0.007**
Relief of tension						
During self-injury	**B4**	**14 (5.6)**	**33 (11.8)**	**47 (8.8)**	**6.39**	**0.011**
After self-injury	B4	19 (7.5)	28 (10.0)	47 (8.8)	1.02	0.31

Statistically significant data are shown in bold (p<0.05)
*Defined here as an intense desire that leads to doing something in this case (relief from feelings, ideas, problems, induction of positive feelings, or diminished tension)

Description of the variables explaining self-injury

The variables that most commonly explained self-injury were unknown motives for self-injury (N=77, 14.5%), despair (N=66, 12.4%), and self-punishment (N=32, 6.0%). When analyzed by sex, the most common variables explaining self-injury were the same for both sexes and for female and male adolescents, respectively, were: unknown motives for self-injury (N=56, 20.1%; N=21, 8.3%), despair (N=49, 17.5%; N=17, 6.7%), and self-punishment (N=20, 7.1%; N=12, 4.7%). Only three variables explaining self-injury differed significantly between the sexes and were to show despair, to frighten people, and unknown motives for self-injury, which were all more prevalent in female than male adolescents (Table 6).

Interference with functionality

The most common type of interference with functionality in the total sample of adolescents was with "academic and social (school)" life (N=42, 7.9%). In addition, this was the type

Table 6 Sex differences in explanatory variables

Explanatory	Boys N (%) 253 (47.5%)	Girls N (%) 280 (52.5%)	Total N (%) 533 (100%)	Chi-square or Fisher's exact test	p
Despair	**17 (6.7)**	**49 (17.5)**	**66 (12.4)**	**14.23**	**0.001**
Self-punishment	12 (4.7)	20 (7.1)	32 (6.0)	1.35	0.162
To frighten people	**2 (0.8)**	**11 (3.9)**	**13 (2.4)**	**5.5**	**0.019**
Attention seeking	9 (3.6)	19 (6.8)	28 (5.3)	2.78	0.091
Emotional manipulation	11 (4.3)	12 (4.3)	23 (4.3)	0.001	0.970
Confirmation of attention	6 (2.4)	13 (4.6)	19 (3.6)	1.99	0.151
Peer pressure	0 (0.0)	3 (1.6)	3 (0.8)	2.67	0.10
Unknown motives	**21 (8.3)**	**56 (20.1)**	**77 (14.5)**	**14.85**	**0.001**

Statistically significant data are shown in bold (p<0.05)

Table 7 Sex differences in interference with functionality

Interference with functionality	Item	Boys N (%) 253 (47.5%)	Girls N (%) 280 (52.5%)	Total N (%) 533 (100%)	Chi-square or Fisher's exact test	p
Academic and social area	C	19 (7.5)	23 (8.2)	42 (7.9)	0.09	0.76
Basic needs	C	8 (3.2)	16 (5.7)	24 (4.5)	1.98	0.15
Family functioning	C	11 (4.4)	20 (7.1)	31 (5.8)	1.83	0.17

Statistically significant data are shown in bold (p<0.05)

of interference reported most often by female (N=23, 8.2%) and male adolescents (N=19, 7.5%). However, these differences did not attain statistical significance. The results indicate that none of the items measuring interference with functionality differed significantly between the sexes (Table 7).

Description of the addictive component

It was noteworthy that 68 (12.8%) adolescents felt incapable of stopping self-injury and 37 (6.9%) adolescents felt as if they were addicted to it, although 100 (18.8%) adolescents wanted to stop injuring themselves. Female adolescents showed a higher prevalence of all three addictive components. The differences were all statistically significant (Table 8).

CONCLUSIONS

We investigated differences in the prevalence and variability of self-injury using different definitions. The results were consistent with those of studies conducted using comparable definitions. The prevalence of self-injury as defined with DSM-5 criteria was similar to the prevalence of 6.7% reported by Zetterqvist in 2013[24] and 1.5% reported by Baroque in 2012[25] using the same DSM-5 definition. Fewer sex-related differences were observed with the DSM-5 definition, as in the Gratz study,[26] which used a strict definition.

The highest prevalence (17.1%) was obtained using the item 51definition. In relation to time period, the highest prevalence was obtained with the definition of 5 events in a year for both sexes, which supports the proposed DSM-5 criteria stipulating this frequency in the definition. These results reflect the chronic course of self-injury. The average age at onset found in this study was similar for both sexes (11.9 [1.3] years), slightly lower than the age reported in other studies.[2] The age range for girls compared to boys was somewhat lower (F: 6-15 yr; M: 8-15 yr), which is similar to data reported by Baroque (2012)[25] in a sample of adolescents of the same age. These results support the observations of other authors underscoring the importance of investigating self-injury using homogeneous definitions.

Table 8 Sex differences in the addictive component of nonsuicidal self-injury

Addictive component	Item	Boys N (%) 253 (47.5%)	Girls N (%) 280 (52.5%)	Total N (%) 533 (100%)	Chi-square or Fisher's exact test	p
Inability to stop	**B2**	**18 (7.1)**	**50 (17.9)**	**68 (12.8)**	**13.89**	**0.001**
Feeling addicted to self-injury	**B2**	**8 (3.2)**	**29 (10.4)**	**37 (6.9)**	**10.65**	**0.001**
Desire to stop self-injury	**B2**	**30 (11.9)**	**70 (25.0)**	**100 (18.8)**	**15.06**	**0.001**

Statistically significant data are shown in bold ($p<0.05$)

Table 9 Self-injury triggering and attenuating factors

Reasons	Boys N (%)	Girls N (%)	Total N (%)
*Trigger			
Parents' divorce	9 (25.7)	13 (15.3)	22 (18.3)
Death in family	7 (20.0)	7 (8.2)	14 (11.7)
Breakup with partner	9 (25.7)	6 (7.1)	15 (12.5)
Other	10 (28.6)	59 (64.9)	69 (57.5)
**Attenuant			
Entertainment	17 (43.6)	22 (28.6)	39 (33.6)
Occupation	2 (5.1)	7 (9.1)	9 (7.8)
Having a partner	11 (28.2)	15 (19.5)	26 (22.4)
Travel	2 (5.1)	1 (1.3)	3 (2.6)
Other	7 (17.9)	32 (41.6)	39 (33.6)

*χ^2=18.5 3df p=0.001. **χ^2=8.90 4df p=0.03

Our results showed that the type of self-injury most often used by female adolescents was cutting, which was consistent with the results of Sornberger and Baroque in 2012.[28,29] In our study, the second most common type of self-injury in female adolescents was embedding objects under the skin or nails, whereas Baroque et al[29] reported skin tightening.

The most common self-injury method in male adolescents was excoriation, which differs from the findings of Baroque and Sornberger, who reported hitting oneself as the most common self-injury method used by male adolescents.[28,29]

In terms of topography, the arms and wrists were the preferred body areas for both sexes. This finding coincides partially with most previous research, where female adolescents prefer arms and wrists,[28,30] but is not always the case in male adolescents as other studies report a preference for areas like the face and chest,[28] or even hands and genitals.[30]

Another interesting finding was the differences in psychological precipitants (presence of negative thoughts and feelings experienced by adolescents before manifesting these behaviors), with girls reporting them more often, particularly ideas of anger before inflicting self-injury. In contrast, male adolescents more often (to a lesser degree than female adolescents) experienced depressive feelings prior to deliberate self-injury. These results are consistent with the study of Brunner (2007), who showed that adolescents with nonsuicidal self-injury had more depressive and anxious symptoms (measured with the *Youth Self-Report),* and the study of Whitlock (2011),[31] who reported on the presence of anger in a community sample of female university students with self-injury.

It is possible that social disapproval of female adolescents expressing ideas or feelings of anger and of male adolescents expressing depression influences the practice of self-injury as an alternative way of expressing these feelings.

As for the addictive component, despite the fact that female adolescents were more concerned about and desirous of stopping self-injury, they reported a greater "need" to injury themselves, inability to stop, and "sense of addiction" to self-injury.

Girls more frequently reported contingent responses to self-injury compared with boys, with relief from negative feelings being the response most reported by both sexes, although less frequently in male than female adolescents.

While both male and female adolescents reported dysfunction associated with self-injury, the differences between sexes were not statistically significant. The low reported dysfunction rate is consistent with the idea that self-injury is a function of self-control and coping with emotions and difficult circumstances, as described by several authors.[2,32,33]

These sex differences in the clinical presentation of self-injury without suicidal ideation support the existence of a specific behavioral phenotype for each sex that should receive more attention.

It must be noted that approval of the DSM-5 criteria would reduce the detection of self-injury in both male and female patients, affecting male patients with self-injury more because diagnosis would require the presence of at least two DSM-5 dimension B criteria, corresponding to the addictive component of this disorder, which are expressed less in male patients.

It is estimated that by 2020 about 15 to 30 million young people will be deliberately injuring themselves. Self-injury behavior represents 3% of the disease burden in young people aged 10-19 years, a figure higher than that of asthma, tuberculosis, and AIDS and comparable to the burden of drug abuse and violence.[34,35] The problem is that it is very difficult to detect self-injury because the practice is hidden from the family, as shown by the poor agreement between reports by self-injury informants (parent-child).[14] The implementation of prevention programs and school monitoring would increase the detection of self-injury, since it is known that adolescents who injure themselves prefer to ask for help from friends instead of health-care workers,[2] and only 13%-21% of them seek medical care in hospitals.[15,36,37] This is why it is so important to facilitate early detection in childhood and adolescence, when the behavior starts, and before the addictive component consolidates and imitation by other adolescents emerges.[12] Disclosure of this behavior also decreases with age. One-half of adolescents who deliberately injure themselves inform a friend or health-care worker about the practice, but a scant 17% of young adults in psychotherapy inform their therapist.[31] It is important to encourage health-care workers, such as family physicians, pediatricians and nurses, to question patients about the practice of self-injury because only 27% of them do so.[38] They should also periodically scrutinize patients for signs of self-injury during the physical examination.

A key element to avoiding negative attitudes toward patients who deliberately injure themselves is to train health-care staff about the psychiatric aspects of self-injury.[39-41]

It is important to explore suicidal ideation, planning, and intent, and the risky behavior of sharing objects (eg, knives) for self-injury because 25% of adolescents share this practice.[42]

It is good practice to carry out screening and psychiatric assessment of children and adolescents in the general hospital, and to implement strategies for maintaining or increasing adherence to important treatment because it is known that up to 40% of patients fail to return for their first follow-up visit.[43,44]

Early detection would make it possible to initiate psychotherapeutic interventions to reduce suicide attempts, consummated suicides, and premature death related to neglecting important aspects of health. Consequently, the development of care, counseling, and prevention programs in the school environment is fundamental for prevention and early detection.

LIMITATIONS

This study has important limitations. Our results are from a small, nonrandomized sample and cannot be extrapolated to the general population.

This survey included only older children and adolescents attending school, which impeded the collection of valuable information from those who were absent or had left school, who are known to injure themselves more frequently and regularly, and have a greater psychopathological component.[2,45]

The results are from a cross-sectional study, which did not allow the identification of risk variables for predicting suicide attempts or consummated suicides, so it is important to conduct longitudinal studies to ascertain risk factors.

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