

Teens who Hurt Themselves: A Cross-Sectional Study with HBSC Portuguese Data

Marta Reis^{1,2,3*}, Lúcia Ramiro^{1,2}, Inês Camacho^{1,2}, Gina Tomé^{1,2,3}, Thaysa Molina⁴ and Margarida Gaspar de Matos^{1,2,5,6}

¹Aventura Social - Faculdade de Motricidade Humana / Universidade de Lisboa, Portugal

²ISAMB / Faculdade de Medicina da Universidade de Lisboa, Lisboa, Portugal

³Post-doctoral students of the Foundation for Science and Technology - SFRH/BPD/110905/2015; SFRH/BPD/108637/2015

⁴Faculdade de Medicina de São José do Rio Preto (FAMERP), São Paulo, Brazil

⁵WJCR / ISPA – Instituto Superior de Psicologia Aplicada, Lisboa, Portugal

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*Corresponding author: Marta Reis, Email: reispSMARTA@gmail.com

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Abstract

Rates of adolescent self-harm have increased throughout the world in recent decades. Therefore, it's important to analyze frequency, method, associated feelings, which part of the body was hurt and whom Portuguese adolescents performed the self-injury behavior with, as well as to identify differences between genders and school years among adolescents who have engaged in self-harm behaviors. The 2014 HBSC national study provided national representative data of 6026 Portuguese adolescents, randomly chosen from those attending 6th, 8th and 10th grades during the 2013/2014 academic year. This study used a subset of 8th and 10th grades, whose mean age was 14.74 years old. The majority of adolescents were Portuguese (92.6%), 60.9% attended the 8th grade and 39.1% the 10th grade. Measures included asking the participants if they had ever engaged in self-harm behavior, type of self-injury, which part of the body was hurt, whom they performed the self-injury behavior with, and the feelings they experienced during that behavior. Results showed that 20.3% reported having engaged in self-harm behavior, among which about one-third reported having performed that behavior 2 or 3 times, and more than one-fifth of adolescents mentioned having done it 4 times or more. Girls more often than boys reported having ever engaged in self-injury and more often reported having done so 4 times or more. The most frequently referred method was cutting or scratching, the most frequently body area hurt was the arms and they performed self-harm behavior alone. They mentioned feelings of sadness, tiredness, disappointment, anger, nervousness and desperation during the self-harming behavior. These results could have significant implications as they shed light on the self-harm issue and could be used in future educational programs. In terms of prevention, this paper emphasizes the need to teach adolescents about this issue, because it is crucial in terms of the promotion of mental health.

Keywords: Self-harm; Adolescents; Methods; Feelings

Introduction

According to the International Society for the Study of Self-Injury (2017; 2010) rates of adolescent deliberate self-harm have increased throughout the world in recent decades. Self-harm refers to the intentional destruction of body tissue without suicidal intent and for purposes not socially sanctioned [1,2]. It is also sometimes referred to as non-suicidal self-injury, self-injurious behavior, or deliberate self-harm and it is used here in preference to the dichotomous separation of such acts into non-suicidal self-injury (proposed as a new diagnosis for the Diagnostic and Statistical Manual of Mental Disorders, fifth edition, APA, 2013) [3].

Self-harm is most prevalent among adolescents and young adults. Typically, cutting is one of the most well-known self-injury behaviors, though self-harming can take many forms ranging from cutting or burning to self-bruising or breaking bones. Hands, wrists, stomach, and thighs are commonly affected areas, though self-injury can happen anywhere on the body [4,4].

The severity of self-injury can range from superficial wounds to lasting scars or disfigurement [1,6].

In general, studies suggest that 12% to 24% of adolescents and young adults surveyed in schools have some history of self-harm [4,1,7]. Most studies find that 6 to 8% of adolescents and young adults report self-harm behavior at present. Self-injury typically begins in mid-adolescence, with studies finding the average age of onset to range from 12 to 15 years old. For many, self-injury is a maladaptive coping method that is relied upon for a period of months or years, though for some it occurs well into adulthood [8-10].

While still not definitive, research on self-harm prevalence and gender suggests that self-harm is only slightly more common in females than it is in males. It is widely agreed, though, that self-harm is much more visible among females than among males [11,12,4,13,9]. However, there is evidence that the forms used differ between males and females, with females more likely to use better recognized forms such as cutting or scratching and males more likely to use forms that result in bruising, such as self-battery or engaging in fighting with the intention of hurting themselves [11,12,4,13,10].

Most often, self-harming behavior is used as a maladaptive coping method as it is used to regulate intense negative emotion or to calm down quickly when feeling very emotional or overwhelmed [14,13,9,6]. When faced with situations that evoke strong and overwhelming emotions such as sadness, anxiety, anger, or even emotional numbness, self-injury is used to manage or reduce these feelings [15,13]. Many also report that they experience self-harm as an expression of self-directed anger or punishment. For some, self-harm is also socially reinforced and may also be used to solicit attention from adults or peers, or to be part of a group [12,16,15,10].

Thoughts of engaging in self-harm typically occur when the person is alone and experiencing negative thoughts or feelings (e.g., feeling anger, self-hatred, or numbness) in response to a stressful event [14,12,15,10]. These thoughts and feelings immediately prior to engaging in self-harm have been reported consistently across studies and support the belief that self-harm is performed in most cases as a means of self-soothing or of help seeking [4,10]. Individuals who engage in self-harming behavior may therefore have greater difficulty regulating their affective and social experiences than individuals who do not engage in self-harming behavior, and as a result are at increased risk for a variety of maladaptive coping behaviors [14,16].

This national study's aim was to (a) understand frequency of self-harm in Portuguese school-aged students, (b) understand the type of self-injury, which part of the body was hurt and whom they performed the self-injury behavior with; (c) identify the feelings experienced during the self-harm behavior; and (d) verify if there are differences between genders and school years, namely between 8th and 10th grades.

Method

This study was based on data from the Health Behaviour in School-Aged Children (HBSC) Portuguese survey [17,18]. The Health Behaviour in School-aged Children (HBSC) is a collaborative WHO study, undertaken in 44 countries with the aim to study school-aged

behaviour regarding health and risk behaviors in adolescence. Portugal is part of this group of countries since 1996 [19]. The HBSC is a school-based survey of adolescents' health behaviours, carried out every 4 years. Collected data is used at a national and international level, using an internationally standardized methodological protocol [20] to gain a new vision into young people's health and well-being, so as to understand the social and psychological determinants of health and to incorporate policies to improve young people's lives.

The 2014 study provided national representative data of 6026 Portuguese adolescents, randomly chosen from those attending 6th grade, 8th grade (middle school) and 10th grade (high school) during the 2013/2014 academic year. The sample included 52.3% of girls and 47.7% of males, whose mean age was 14.0 years old (standard deviation 1.7). The majority of adolescents were Portuguese (94.7%), 35.8% attended the 6th grade, 39.1% attended the 8th grade and 25.1% attended the 10th grade. This study used a subset of 8th (n=2358) and 10th graders (n=1511) to represent middle school and high school educational stages. The majority was female (middle school, 51.1%; high school, 56.3%), Portuguese (95.2% and 94.2%, respectively) and their mean ages were 13.9 and 15.9 years old, respectively (standard deviation 0.7 for both).

The HBSC 2014 survey was, like the previous waves, nationally representative. All ethical procedures were followed, and school and parental informed consent was obtained. Pupil participation was voluntary and anonymous. Details on methods and data collection are published elsewhere [17,20].

Although numerous aspects of health behavior were addressed in the survey, only those relating to socio-demographic characteristics and self-harming behavior were selected. The main focus of the present study was to: a) analyze the frequency of self-harm in Portuguese students, b) identify the type of self-injury, which part of the body was hurt and whom they performed the self-injury behavior with, c) analyze the emotions felt during the self-harm behavior, and d) verify if there are differences between genders and school years, namely between 8th and 10th grade. Connections between these elements of study were examined descriptively in addition to evaluating their potential for prevention.

Measures

These study included issues related to socio-demographic characteristics (gender and school year), identifying if the participant had ever engaged in self-harming behavior in the last 12 months (No/Once in a lifetime/ 2 to 3 times/ 4 time or more), which methods they use (cuts, pinching and/or burns), parts of the body most often chosen (arms, legs and/ or belly), whom doo they engage in self-harm behaviors with (alone, with friends and/ or with boyfriend/girlfriend) and emotions felt during self-harm (anger, tiredness, sadness, nervousness, restlessness, disappointment and / or desperation).

Data Analysis

Analyses and statistical procedures were carried out in the *Statistical Package for Social Sciences* program (SPSS, version 22.0 for Windows). Overall, structured self-reported questionnaires were responded by the subset of middle school (8th grade) and high school (10th grade) students from the HBSC (3869 participants) survey. The total number differed according to the sub-sample used (middle school and high school; reporting they have had self-harm or not), and considering that some participants have not replied to some questions.

Frequencies and other descriptive statistics were performed to characterize the sample. Self-harm behavior was then compared between genders, school year, and students reporting having engaged in self-harming behaviors, using Chi-square (χ^2). The level for statistical significance was set at $p < .05$. Only significant results were discussed.

Results

Differences between gender/ school year and frequency of self-harm behavior in Portuguese adolescents

The majority of adolescents said that they had never engaged in self-harm behaviors (n = 2600; 79.7%) while 20.3% (n= 662) reported having had self-harm behavior, namely girls and 8th grade students.

The results showed that among the students who have reported having had self-harm behaviors (n=662), about one-third reported having engaged in it 2 or 3 times (32.9%) and more than one-fifth of adolescents mentioned having done it 4 times or more (23.9%) in the past 12 months.

Considering the total sample 244 boys and 418 girls mentioned having already engaged in self-harm behaviors. A significant variation was found between frequency about self-harm behaviors and gender (χ^2 (1) = 10.419; $p < .01$). The results showed that the girls reported having engaged on the self-injurious behaviors more often than the boys and they also reported more often having done it 4 times or more. While girls do appear to more frequently report self-harming behaviors 4 times or more, boys appear to be "casual" self-harmers more frequently (i.e., once in a lifetime).

No statistically significant differences were found for school year (Table 1).

Self-harm behavior – methods, parts of body, whom they were with when they engaged in self-harm behaviors and emotions felt during it - differences between genders and school years, in Portuguese adolescents

The most commonly mentioned method by the majority of the Portuguese adolescents were the cuts (n = 337, 50.9%). The arms were the most frequently mentioned part of the body hurt (n = 409, 61.8%). Adolescents also mentioned performing the self-harm behaviors mostly alone (n = 498, 75.2%).

Regarding the emotions felt to accomplish these behaviors, the majority of Portuguese adolescents mentioned sadness (n = 384, 58%) and tiredness (n = 342, 51.7%).

Statistically significant differences were found between self-harm behavior and genders for all variables analyzed, namely for the methods used for self-harm – specifically for cuts (χ^2 (1) = 42.276; $p < .001$), parts of the body – specifically for arms (χ^2 (1) = 70.798; $p < .001$), with whom they performed self-harm behaviors with – specifically to be alone (χ^2 (1) = 57.277; $p < .001$), and the emotions felt during self-harm – specifically to sadness (χ^2 (1) = 57.701; $p < .001$), tiredness (χ^2 (1) = 60.020; $p < .001$), disappointment (χ^2 (1) = 68.481; $p < .01$), nervousness (χ^2 (1) = 15.714; $p < .001$) and desperation (χ^2 (1) = 34.299; $p < .001$).

The results showed that girls reported more often than boys cutting themselves (61% vs 33.6%) in their arms (73.9% vs 41%) alone (84.9% vs 58.6%). Results also showed that girls more often feel sadness (69.1% vs 38.9%), tiredness (63.2% vs 32%), disappointment (51% vs 18.4%), nervousness (40.2% vs 25%) and desperation (34.9% vs 13.9%). In turn boys referred more often than girls to perform self-harm behaviors with friends.

There were also statistically significant differences between self-harm behavior and school grade for the parts of the body – specifically for arms (χ^2 (1) = 4.854; $p < .05$), with whom they performed self-harm behaviors – specifically to being alone (χ^2 (1) = 6.406; $p < .01$), and for one emotion felt during self-harm – specifically for tiredness (χ^2 (1) = 9.598; $p < .01$). The results showed that 10th grade students reported more often than 8th graders hurting their arms (67.4% vs 58.7%) and doing it alone (80.9% vs 72.1%). They also stated more often tiredness (59.7% vs 47.2%) (Table 2).

Table 1: Frequency distributions of adolescents regarding self-harming behavior in the last 12 months and differences between genders and school grades (N=3869)¹.

	Total (n=3869)		Gender (n=3869)				χ^2	School grade (n=3869)				χ^2
	N	%	Male		Female			8 th		10 th		
			N	%	N	%		N	%	N	%	
							39.304***					14.761**
No	2600	79.7	1255	83.7	1345	76.3		1492	77.8	1108	82.4	
Yes, once in a lifetime	286	8.8	120	8.0	166	9.4		193	10.1	93	6.9	
Yes, 2 to 3 times	218	6.7	82	5.5	136	7.7		142	7.4	76	5.6	
Yes, 4 time or more	158	4.8	42	2.8	116	6.6		91	4.7	67	5.0	

¹The total numbers differ considering that some participants have not replied to some variables.

* p< .05; ** p< .01; *** p< .001; n.s = not significant

In bold – values that correspond to an adjusted residual $\geq |1.9|$ / The level for statistical significance was set at p < .05.

Only adolescents who reported having engaged in self-harming behavior												
	Total (n=662)		Gender (n=662)				χ^2	School grade (n=662)				χ^2
	N	%	Male		Female			8 th		10 th		
			N	%	N	%		N	%	N	%	
							10.419**					4.425 ^{n.s}
Yes, once in a lifetime	286	43.2	120	49.2	166	39.7		193	45.3	93	39.4	
Yes, 2 to 3 times	218	32.9	82	33.6	136	32.5		142	33.3	76	32.2	
Yes, 4 time or more	158	23.9	42	17.2	116	27.8		91	21.4	67	28.4	

¹ The total numbers differ considering that some participants have not replied to some variables.

* p< .05; ** p< .01; *** p< .001; n.s = not significant

In bold – values that correspond to an adjusted residual $\geq |1.9|$ / The level for statistical significance was set at p < .05.

Table 2: Frequency distribution of self-harm behavior (N=662¹).

	Total (n=662)		Gender (n=662)				χ^2	School grade (n=662)				χ^2
	N	%	Male		Female			8 th		10 th		
			N	%	N	%		N	%	N	%	
Methods for self-harm ²												
Cuts	337	50.9	82	33.6	255	61.0	46.276***	205	48.1	132	55.9	3.707 ^{n.s}
Scratching	178	26.9	60	24.6	118	28.2	1.038 ^{n.s}	110	25.8	68	28.8	.692 ^{n.s}
Burns	56	8.5	27	11.1	29	6.9	3.390 ^{n.s}	32	7.5	24	10.2	1.385 ^{n.s}
Parts of the body most often chosen ²												
Arms	409	61.8	100	41.0	309	73.9	70.798***	250	58.7	159	67.4	4.854*
Legs	140	21.1	46	18.9	94	22.5	1.221 ^{n.s}	82	19.2	58	24.6	2.585 ^{n.s}
Belly	71	10.7	29	11.9	42	10.0	.543 ^{n.s}	43	10.1	28	11.9	.497 ^{n.s}
Whom they were with when performed self-harm behavior ²												
Alone	498	75.2	143	58.6	355	84.9	57.277***	307	72.1	191	80.9	6.406**
Friends	63	9.5	41	16.8	22	5.3	23.827***	47	11.0	16	6.8	3.190 ^{n.s}
Boyfriend/Girlfriend	27	4.1	22	9.0	5	1.2	24.084***	21	4.9	6	2.5	2.212 ^{n.s}
Emotions felt during self-harm behaviour ²												
Sadness	384	58.0	95	38.9	289	69.1	57.701***	241	56.6	143	60.6	1.008 ^{n.s}
Tiredness	342	51.7	78	32.0	264	63.2	60.020***	201	47.2	141	59.7	9.598**
Disappointment	258	39.0	45	18.4	213	51.0	68.481***	163	38.3	95	40.3	.253 ^{n.s}
Anger	240	36.3	85	34.8	155	37.1	.336 ^{n.s}	151	35.4	89	37.7	.337 ^{n.s}
Nervousness	229	34.6	61	25.0	168	40.2	15.714***	138	32.4	91	38.6	2.551 ^{n.s}
Desperation	180	27.2	34	13.9	146	34.9	34.299***	111	26.1	69	29.2	.776 ^{n.s}
Unquietness	87	13.1	30	12.3	57	13.6	.243 ^{n.s}	56	13.1	31	13.1	.000 ^{n.s}

¹Only adolescents who reported self-harming behaviors in the last 12 months

²In the table only % of adolescents who reported “yes” to each answer option about emotions

* p< .05; ** p< .01; *** p< .001; n.s.= not significant

In bold – values that correspond to an adjusted residual $\geq |1.9|$

Discussion

The aim of this national cross-sectional study of Portuguese adolescents was to examine the prevalence on self-harming behaviors, as well as analyze the type of self-injury, which parts of the body are the most used by the adolescents, whom they performed the self-injury behavior with and the feelings they experienced during self-harming behaviors. And finally differences between

genders and school years, namely between 8th and 10th grade, were evaluated.

Results showed the majority of adolescents reported not having ever engaged in self-harming. However, 20.3% reported having already had self-harm behaviors. Of young people who reported having performed the self-harm behavior, 32.9% reported having already performed the self-harm behavior 2 or 3 times, and 23.9% of adolescents mentioned

having already done it 4 times or more. Girls more often than boys reported engaging in self-harming and doing so more times (4 times or more).

Regarding the demographic characteristics associated with self-harming behavior, it was clear that girls were at the highest risk. This was not surprising, given that previous researches showed that being female, having behavior problems, and somatic problems were associated with self-harming behavior in young people [11,12,4,13,9].

The prevalence rate of 20.3% was consistent with other studies and suggested that self-harming behavior in this population should be given serious consideration. Most other studies reported a life time prevalence of self-harm from 12% to 24% [4,1,15]. The most frequently referred methods for self-harm were cutting or scratching; the most frequently hurt body area was the arms and they performed self-harm behaviors alone. They mentioned feelings of sadness, tiredness, disappointment, anger, nervousness and desperation during the self-harming behaviors. These results were also consistent with other studies [15,13].

There are some noteworthy limitations that should be considered when interpreting these findings. First, measures were self-reported and may reflect biases, especially underreporting of sensitive information. Second, the data represented students in school age -and therefore may not be generalized to Portuguese young people or those who have dropped out of school. Third, analyses were based on cross-sectional data, which do not allow temporal ordering between correlates and outcomes. Fourth, the study did not assess protective and risk factors correlates with self-harm behavior. And several important factors such as the use of coping strategies, cognitive functioning and communication strategies, in addition to past help-seeking, were not available within the existing dataset, which could have been helpful in the explanation of factors associated with self-harming behavior.

Despite these limitations, the findings from this study can be used to empirically document a relatively high overlap between self-harm among young people. Moreover, it appears that there are shared and specific characteristics that may be incorporated in future research and prevention programs of self-harm behavior among vulnerable adolescents. Unfortunately, public health prevention strategies that specifically address self-harm in populations of young people are not available in Portugal.

Prevention of deliberate self-harm in young people can be difficult due to the impulsive nature of this behavior. Acquiring more constructive ways of dealing with distress by educational programs, creating a more communicative relationship with significant others, and active listening might be helpful in reducing the high prevalence of the self-harming behavior. Educational programs could address the opportunity to communicate with teachers and/or peers about self-harming thoughts if such programs are embedded in a more global mental health framework. However, there are several different types of programs that may have some success in addressing self-harming behavior either by directly addressing self-harm or indirectly by addressing the associated risk factors.

In conclusion, our results could have significant implications for information provision and the targeting of future education programmes. Despite the increased interest and pursuit of research into self-harm, its etiology and epidemiology, as well as many aspects of self-harm remain relatively poorly understood. As such, future research is clearly needed to better understand and respond to the growing need of youth who experience self-harming behavior. One of the key barriers to progress in this field is the scarcity of available data sources that have included measures of self-harm. A recommendation for future data collections is to incorporate measures of self-harm, particularly among adolescents and young adults, so that the prevalence and epidemiology of self-harm can be studied across a range of populations and settings. Finally,

while self-harm is clearly a complex and multi-faceted problem, efforts that seek to understand this issue better and that find ways to develop prevention and intervention strategies are sorely needed.

Findings also suggested that educators, medical providers and therapists see a significant number of adolescents and young adults whom they may fail to recognize as self-harmers. Some of these are at heightened risk for severe distress and suicide-related behaviors. The reticence of those who practice self-harming behavior to seek advice from anyone makes it critical that medical and mental health providers find effective strategies for recognizing, treating, and preventing self-harming behavior.

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