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Systematic review of the prevalence of suicidal ideation and behavior in minors who have been sexually abused

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The experience of sexual abuse in childhood is a serious public health problem that is associated with suicidal behavior in numerous cases. Awareness of the relation between the experience of sexual abuse in childhood with suicidal ideation and behavior in adolescence is relevant in academic and professional terms.

Method. A systematic review was made of published studies on the prevalence of suicide among childhood victims of sexual abuse in the European Union. Studies cited in the PsycINFO, Scopus and MEDLINE *Web of Science* databases were retrieved using the terms: "sexual abuse" AND "child" AND "suicide" AND "prevalence" OR "incidence".

Results. The results obtained from the 16 studies reviewed show a high frequency of suicidal ideation and behavior in these victims and highlight a serious consequence of sexual abuse that seems to affect a significant number of minors. The victims of childhood sexual abuse have a 2- to 3-fold higher risk of suicidal ideation and 3- to 4-fold higher risk of attempted suicide than nonvictims.

Conclusions. In the health care field, it is important to understand the specific short-term and long-term effects of childhood sexual abuse, which could improve the effectiveness of intervention in victims and treatment for those at increased risk of suicide.

Keywords: Sexual abuse, Childhood, Adolescence, Suicidal ideation, Suicidal behavior, Prevalence

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Revisión sistemática de la prevalencia de ideación y conducta suicida en menores víctimas de abuso sexual

La experiencia de abuso sexual en la infancia constituye un grave problema de salud pública, que se asocia con el comportamiento suicida en un elevado número de casos. Conocer la relación entre la experiencia de abuso sexual infantil y la ideación y conducta suicida en el adolescente es relevante, a nivel académico y profesional. Método. El presente trabajo pretende llevar a cabo una revisión sistemática de los estudios publicados sobre la prevalencia del suicidio en menores víctimas de abuso sexual pertenecientes a la población comunitaria. Se han seleccionado aquellos trabajos publicados en las bases de datos Psycinfo, Scopus y Medline de la *Web of Science* utilizando los términos: "sexual abuse" AND "child" AND "suicide" AND "prevalence" OR "incidence".

Resultados. Los resultados obtenidos de los 16 estudios revisados muestran la elevada frecuencia de ideación y conducta suicida en estas víctimas y alertan de una grave consecuencia del abuso sexual que parece afectar a un número importante de menores. Las víctimas de abuso sexual infantil tienen entre 2 y 3 veces más riesgo de presentar ideación suicida y entre 3 y 4 veces más riesgo de cometer algún intento de suicidio que las no víctimas.

Conclusiones. Desde el ámbito de la salud, es necesario un mayor conocimiento de los efectos concretos, a corto y largo plazo, del abuso sexual infantil, lo que permitirá una intervención más adecuada para sus víctimas y un tratamiento más eficaz de aquellas que presentan un mayor riesgo de suicidio.

Palabras clave: Abuso sexual, Infancia, Adolescencia, Ideación suicida, Conducta suicida, Prevalencia

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INTRODUCTION

Sexual abuse of children is a serious public health problem that affects one out of five children in Europe.¹ Its consequences touch on every area of the victim's life and impose a significant burden with implications in the short, medium and long term for the countries responsible for the proper development of these children.² If we focus on the adverse effects that childhood sexual abuse on the psychosocial development of the victim, multiple studies³ have shown problems in both childhood^{4,5} and adulthood.⁶⁻⁸ One of the problems most closely related with this experience is suicidal behavior, which is generally associated with mood disorders, primarily depression, but is also associated with other personality traits of the victim, such as impulsiveness.^{9,10}

Suicidal behavior occurs on a continuum of increasing severity that ranges from suicidal ideation to suicide attempts and consummated suicide.^{11,12} Following Bridge, Goldstein and Brent,¹³ suicidal ideation refers to thoughts of harming or killing oneself, whereas attempted suicide is understood as a self-inflicted nonfatal destructive act that has the explicit or inferred intention to cause death, and suicide is a self-inflicted fatal destructive act committed for the explicit or inferred intention of causing death. In addition, we have self-injurious behavior, which is understood as actions carried out with the intention to cause bodily harm, but without suicidal intent (e.g., skin cuts, burns, blows, and scratches).^{12,13} Finally, suicide planning is defined as the idea that, aside from an individual expressing the desire to eliminate his or herself, also refers to a specific method and place, and the precautions taken to avoid being discovered and achieving the goal of dying.¹⁴ Although the true magnitude of the problem is unknown,¹⁵ suicide is the leading external cause of death in our country [Spain].¹⁶ Every year nearly one million people in the world commit suicide,¹⁷ suicide being considered one of the top three causes of death among individuals aged 15 to 44 years in some countries, and the second leading cause of death in the group aged 10 to 24 years. In this context, adolescent suicide has been a motive for concern in recent decades,¹⁸⁻²⁰ constituting a serious problem of great social interest.

Among the risk factors associated with suicidal behavior, the experience of sexual abuse in childhood is one of the most relevant.²¹ Review studies that have examined the relation between childhood sexual abuse and the occurrence of self-injurious behavior, suicidal ideation, and suicidal behavior in adulthood have found a higher frequency of these problems in victims of sexual abuse than in comparative groups of adults who have not been victims.^{3,7,22} However, so far there has been no review of the proportion of victims of sexual abuse in childhood who exhibit self-destructive behavior. Some reviews of the short-term effects of childhood sexual abuse seem to point to an important relation between the two variables.²³ The same finding is

made in reviews of the studies of victims of general childhood abuse.²⁴ However, meta-analyses of related topics reveal that this relation between the experience of childhood sexual abuse and certain problem behaviors, such as self-destructive behavior,²⁵ is not observed in a systematic review.

In this context, and given the scarcity of published studies on suicidal ideation and behavior in minor victims, particularly in the Spanish language, the aim of this study was to review the literature on suicidal behavior in minors who have experienced childhood sexual abuse with the intention of clarifying the possible relation and demonstrating the existence of a problem that has serious implications for the welfare of young people, their families, and society as a whole.

METHODOLOGY

In the development of this systematic review, the guidelines of Moher, Liberati, Tetzlaff, Altman, and the PRISMA Group²⁶ for the publication of such studies were followed.

Study selection

Articles in scientific journals, excluding doctoral theses or book chapters, published only in English or Spanish, and focused on empirical studies of the prevalence of suicide among victims of childhood sexual abuse in the European Union were retrieved using the PsycINFO, Scopus, and MEDLINE Web of Science databases and the following search terms: "*sexual abuse*" AND "*child*" AND "*suicide*" AND "*prevalence*" OR "*incidence*" published from 1986 to June 2013, both dates included.

Inclusion and exclusion criteria

In order to be included in this review, studies had to meet the following criteria: (A) focus on the evaluation and study of a sample of children and adolescents, including studies in which the mean age of participants was less than 18 years, or the upper limit of the age range of the sample was less than 25 years if the study did not report the mean age of participants; (B) provide prevalence data on both childhood sexual abuse and suicidal behavior; (C) with regard to the prevalence of suicidal behavior, provide data on suicidal ideation, suicide planning and/or suicide attempts; and (D) evaluate the risk of suicide parting from the experience of childhood sexual abuse and not the opposite.

According to our exclusion criteria, we ruled out all studies that: (A) did not deal with the topics of the review;

(B) evaluated a clinical sample or specific population group (e.g., young offenders, prisoners, homeless adolescents); (C) was a review study; or (D) evaluated the prevalence of childhood sexual abuse and suicide, but did not analyze the relation between them.

Study coding

A series of variables relating to the studies reviewed and to the study design and methodology were recorded: (a) author(s) and year of publication; (b) country where the study took place; (c) number of participants; and (d) the source of the sample. Variables related to the samples of minors and type of victimization experienced were also coded: (e) sex of the minors (males, females, both sexes); (f)

age range of the participants (in years); (g) prevalence of sexual abuse; and (h) definition of the type of sexual abuse experienced (with or without physical contact). In turn, variables related to the risk of suicidal behavior among the minors who had been victims of sexual abuse were recorded: (i) prevalence of suicidal ideation; (j) prevalence of suicide planning; (k) prevalence of suicide attempts; and (l) variables associated with sexual abuse and suicidal behavior.

RESULTS

The process of selecting the studies in this review is shown in Figure 1. After the initial search (317 potential articles), 16 articles were included; the articles excluded did not meet the previously established inclusion and exclusion criteria.

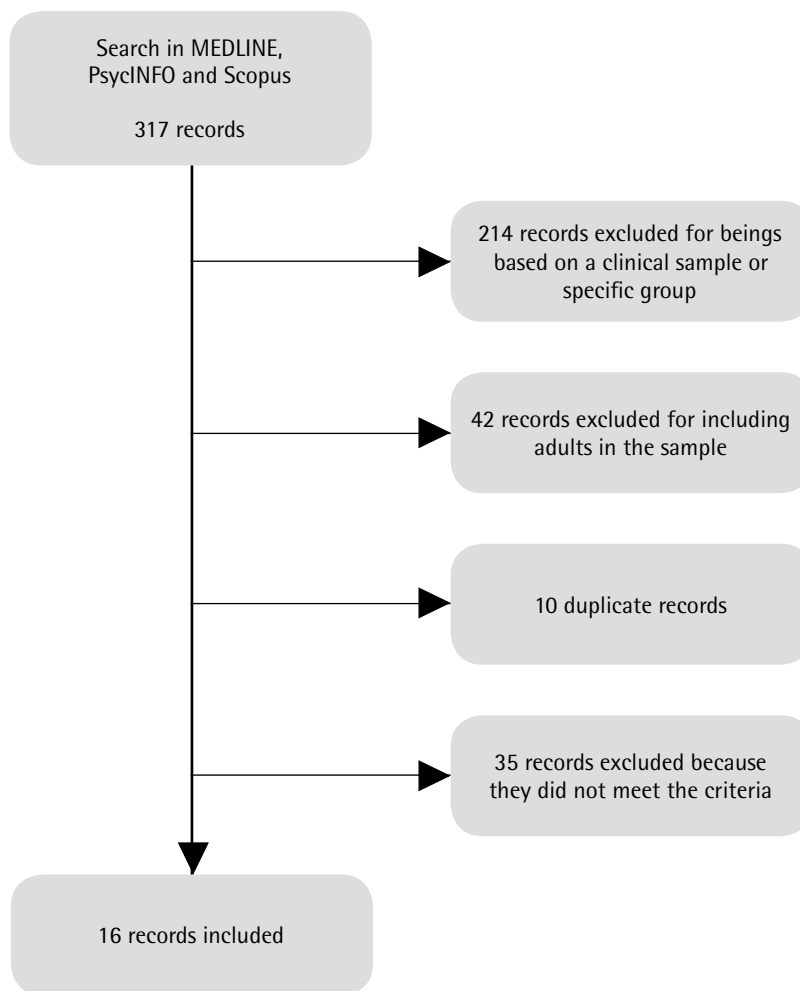


Figure 1

Flowchart of the selection of studies for inclusion in the review

Study design and methodology variables

The studies included in the final sample of this review provided information on the prevalence of suicidal behavior in minors who have been victims of sexual abuse based on data collected from nine different countries between 1990 and 2011. Most of the publications dealt with samples in the US²⁷⁻³³ (44%), followed by China^{34,35} (13%), Ethiopia^{36,37} (13%), Australia³⁸ (6%), Brazil³⁹ (6%), the Caribbean⁴⁰ (6%), Sweden⁴¹ (6%), and South Africa⁴² (6%).

Regarding the type of sampling used to select participants, 62.5% of the studies used probabilistic methods of sample collection and 37.5% used conveniently available samples. The participants were recruited mainly through school surveys ($n=12$; 75%), although there were also studies that collected data from minors in door-to-door surveys ($n=2$; 12.5%), surveys in the waiting room of general practitioners ($n=1$; 6.25%), or from home interviews of study participants who were previously selected as a representative sample of the general population ($n=1$; 6.25%).

Authors and year	Country of sample	n	Sampling	Origin of the sample	Age range
Ackard and Neumark-Sztainer (2002)	USA	81,247	Probability: census	Students	9th and 12th grade students
Ackard and Neumark-Sztainer (2003)	USA	81,247	Probability: census	Students	9th and 12th grade students
Bensley et al. (1999)	USA	4,790	Probability: stratified	Students	8th, 12th and 12th grade students
Hibbard, Ingersoll and Orr (1990)	USA	3,998	Probability: census	Students	7th to 12th grade students
Molnar, Berkman and Buka (2001)	USA	5,877	Probability: stratified	General population	15 to 24 years
Nelson et al. (1994)	USA	2,332	Probability: stratified	Students	9th to 12th grade students
Riggs, Alario, McHorney (1990)	USA	600	Nonprobabilistic	Students	9th and 12th grade students 14 to 17 years
Chen, Dunne and Han (2006)	China	351	Nonprobabilistic	Students	16 to 23 years
Lin, Li, Fan and Fang (2011)	China	683	Nonprobabilistic	General population	9 to 15 years
Worku and Addisie (2002)	Ethiopia	216	Nonprobabilistic	Students	12 to 21 years (9th to 11th grade students)
Worku, Gebremariam and Jayalakshmi (2006)	Ethiopia	323	Probability: stratified	Students	12 to 20 years (from the 9th grade on)
Beckinsale, Martin and Clark (1999)	Australia	3,144	Probability: random	General medicine patients	15 to 24 years
Anteghini et al. (2001)	Brazil	2,059	Nonprobabilistic	Students	8th and 10th grade students (13 to 17 years old)
Blum et al. (2003)	Caribbean	15,695	Probability: random	Students	10 to 18 years old
Edgardh and Ormstad (2000)	Sweden	1,943 students 210 non students	Probability: random	Students	17 years old
King et al. (2004)	South Africa	939	Probability: stratified	Students	12 to 18 years old or more

Table 2	Differences in suicidal behavior among participants who are victims of sexual abuse and nonvictims					
	Suicidal ideation		Suicide planning		Suicide attempts	
	V_{max}	\bar{x}	V_{max}	\bar{x}	V_{max}	\bar{x}
Victims	63.07%	28.01%	32.7%	19.94%	63%	28.18%
Non victims	26.84%	15.9%	2.96%	2.68%	24%	8.99%

The sample size differed substantially from one study to another, the minimum being 216 participants³⁶ and the maximum 81,247 participants.^{27,28} The median number of participants per study was $M_e=243$ ($IQR=4399.5$).

A detailed description of the characteristics of these studies is given in Table 1.

Variables related with the participants and type of victimization

Most of the studies included both female and male participants (81.25%),^{27-33,35,38-42} usually in similar percentages, except for the studies of Chen et al.,³⁴ Worku and Addisie,³⁶ and Worku et al.,³⁷ which analyzed samples of female subjects (18.75%). The study samples consulted were within an age range of 9 to 24 years, although 43.75% of the studies did not provide specific data on the age of the participants, grouping them instead by school year; only 37.5% of the studies reported the mean age of the participants.

Regarding the type of victimization experienced and percentages, the studies specifying this type of information reported rates of abuse ranging from 3.89% to 68.7% in their study samples, in most cases (64.29%) involving sexual abuse and behaviors alone; the rest (35.71%) involved both physical and sexual abuse. In this regard, more specifically, 31.25% of the studies collected data on victims of abuse involving physical contact, 25% on victims of abuse with and without physical contact, and none of the studies reported data on victims of abuse without physical contact alone. Of the studies examined, 43.75% did not provide data on the type of sexual abuse experienced by the study participants.

Variables related with the risk of suicidal behavior among victims of childhood sexual abuse

Most of the studies examined provided data on the risk of suicidal ideation and/or suicide attempts (68.75%), with a lower percentage of studies providing data on suicide

planning as well (25%). On the other hand, 6.25% provided overall data on suicidal behavior in general without indicating the specific risk of suicidal ideation, suicide planning, or suicide attempts.

The differences between the participants who had experienced some form of sexual victimization and those who did not in relation to suicidal behavior are summarized in Table 2.

As for the variables associated with the experience of childhood sexual abuse, the studies reviewed highlighted substance use and/or abuse (which was significant in 53.33% of the studies examined), low self-esteem (40%), depression (40%), eating disorders (33.33%), feelings of hopelessness (26.76%), antisocial behavior (26.67%), risky sexual behaviors (20%), and early sexual relations (20%), among others. It should be noted that the sum of the percentages does not equal 100% because the same variables were common to different articles. With regard to the variables associated with the risk of suicide, from the few studies that provided these data it is evident that one of the most prevalent variables is substance use, which was significant for all the studies that included this information. A detailed summary of the characteristics of these articles is shown in Table 3.

DISCUSSION

For this review we jointly analyzed two public health problems with major social relevance that affect young people as a group: childhood sexual abuse and suicidal behavior. As observed in our study, whether viewed from the vantage point of the impact of childhood sexual abuse or of the analysis of risk factors for suicidal behavior, it is true that both problems are linked in many cases.

Although not many articles have studied the concurrence of both problems, especially in nonclinical samples, the results of our review indicate that suicide is present in a large number of victims of childhood sexual abuse, so we believe that the relation between childhood sexual abuse and suicidal ideation and behavior is relevant for both academic and professional purposes.

Table 3						
Sexual abuse, suicidal behavior and psychopathology in the studies reviewed						
Authors and year	Sexual abuse	Suicidal ideation	Suicide planning	Suicide attempts	Variables associated with sexual abuse	Variables associated with suicidal behavior
Ackard and Neumark-Sztainer (2002)	3.89%	Victims: 24.31% Non Victims: 23.87%	-	Victims: 48.10% Non Victims: 8.97%	Low levels of emotional well-being, low self-esteem, eating disorders and suicide	-
Ackard and Neumark-Sztainer (2003)	10.49%	Victims: 31% Non Victims: 23.33%	-	Victims: 39% Non Victims: 8.14%	Low levels of emotional well-being, low self-esteem, eating disorders and suicide	-
Bensley et al. (1999)	14.7%	Victims: 14.31% Non Victims: 5.77%	Victims: 8.19% Non Victims: 2.49%	Victims: 14.31% Non Victims: 2.6%	Depression, antisocial behavior, and suicidal ideation and behavior	-
Hibbard, Ingersoll and Orr (1990)	9.5%	Victims: 63.07% Non Victims: 26%	-	Victims: 39.49% Non Victims: 8%	Eating disorders and risk of suicide	-
Molnar, Berkman and Buka (2001)	17.17%	Victims: 36.34% Non Victims: 11.67%	Victims: 16.09% Non Victims: 2.96%	Victims: 18.27% Non Victims: 3.57%	Depression, anxiety disorders, alcohol used, and post-traumatic stress disorder	-
Nelson et al. (1994)	20.9%	Victims: 59.26% and Non Victims: 21.15%			Poor self-image, suicidal tendencies, substance use, high-risk sexual practices, higher number of sexual partners, carrying weapons, and fighting	-
Riggs, Alario, McHorney (1990)	8.1%	-	-	Victims: 3 times greater risk	Depression, low self-esteem, hopelessness, risk of suicide, increased sexual activity, eating disorders, and substance use	-
Chen, Dunne y Han (2006)	21.9%	Victims: 24.4% Non Victims: 8.5%	Victims: 32.7% Non Victims: 2.6%	-	Depression, low self-esteem, suicidal tendencies, tobacco and alcohol use, violent behavior, sexual precocity	-
Lin, Li, Fan and Fang (2011)	18%	Victims: 33.3% Non Victims: 17.8%	-	Victims: 27.64% Non Victims: 10%	Smoking, alcohol use, low self-esteem, peer pressure, and suicidal ideation and behavior	-
Worku and Addisie (2002)	20.4%	Victims: 21.1%	-	Victims: 15.8%	Fear and anxiety, exam failure, unwanted pregnancy, suicidal ideation and behavior, hopelessness, dropping out of school, guilt, personal injury, and increased risk of sexually transmitted diseases	-

Table 3		Continuation				
Authors and year	Sexual abuse	Suicidal ideation	Suicide planning	Suicide attempts	Variables associated with sexual abuse	Variables associated with suicidal behavior
Worku, Gebremariam and Jayalakshmi (2006)	68.7%	Victims: 2.3%	-	Victims: 1.8%	Sexually transmitted diseases, unwanted pregnancy, abortion, feelings of worthlessness and guilt, hopelessness, sexual dysfunction, and suicidal ideation and behavior	-
Beckinsale, Martin and Clark (1999)	15.50%	-	Victims: 22.77%	-	Depression, hopelessness, risk of suicide, substance abuse, concern about being homosexual, and risky sexual behavior	-
Anteghini et al. (2001)	-	Victims: 52.63% Non Victims: 26.84%	-	Victims: 35.09% Non Victims: 8.23%	-	History of childhood sexual abuse in boys
Blum et al. (2003)	-	-	-	Victims: 23.1% Non Victims: 9.1%	Poor health, depression, risk of suicide, rage, emotional distress, sexual precocity	-
Edgardh and Ormstad (2000)	Students: 7.77% Non students: 17.14%	Students: 15.33% Non Students: 38% Victimas: 5.18% Non Victims: 10%	-	Students: 30.87% Non Students: 63% Victims: 7.31% Non Victims: 24%	Depression, suicidal ideation and behavior, sleep disorders, eating disorders, alcohol and other substance use, and risky sexual behavior	-
King et al. (2004)	14.2%	Victims: 8%	-	Victims: 9.81%	Substance abuse, antisocial behavior, and suicidal behavior	-

Although the results of the studies examined reveal a high degree of variability in the risk of suicidal ideation, and suicide planning and attempts in general, the victims of sexual abuse during childhood are at an increased risk of presenting both. The presence of suicidal ideation is twice as high among victims than nonvictims, whereas suicide attempts occur more than three times more often among victims than nonvictims. Specifically, in terms of the type of suicidal behavior, there are major differences in the prevalence of suicide attempts and suicidal ideation, there being fewer differences between victims and nonvictims in the frequency of suicidal ideation. Among the studies reviewed, the study of Ackard and Neumark-Sztainer²⁷ is

noteworthy because it reported minimal differences between victims and nonvictims in the risk of suicidal ideation but, in contrast, found a five-fold greater risk of suicide attempts among victims.

At the methodological level, the majority of the articles are from the United States, as the relation between childhood sexual abuse and suicide in samples of young people in Europe has been analyzed in only a few European countries. Positive indicators worthy of pointing out include the use of probabilistic methods to recruit the samples in many studies, which yields more representative results, the inclusion of similar percentages of male and female subjects in most studies, and the use of fairly large samples, more

than 500 subjects in over 80% of the papers, gives greater robustness to the results.

It should be noted that many variables are associated with childhood sexual abuse cannot be established as causal, only as associated with this experience, given the cross-sectional nature of the studies. Substance use and/or abuse, low self-esteem, and depression occur in a large number of cases, as has also been found in studies focusing on the initial and long-term consequences of childhood sexual abuse.^{4,6} Regarding the variables related to suicidal behavior, the few studies that have examined this topic in childhood sexual abuse victims also highlight substance abuse as a factor. In this sense, toxic substance use occurs in both problems and is both a consequence of childhood sexual abuse and a risk factor for suicidal behavior. Given the implications for the health care field, professionals should be aware of these relations. The only article in the present review that analyzed the variables mediating between the experience of childhood sexual abuse and suicidal behavior confirmed the high risk associated with substance abuse and the presence of depression, anxiety disorders, and post-traumatic stress disorder. In this sense, the study of Edghard and Ormstad⁴¹ also provides interesting data on the relation between sexual abuse, suicidal behavior, and school performance. In an evaluation of a sample of 17 year olds in which those who continued studying and those who left school were differentiated, the authors found a higher prevalence of sexual abuse and suicidal behavior in the group of young people who left school. This result is also professionally useful and should alert us to the vulnerability of children and young people not in school to these problems.

Among the proposals derived from the study are the need to obtain data on victims of sexual abuse who have not suffered other types of mistreatment in order to comparatively analyze the risk of suicide among the victims of sexual abuse, victims of other forms of abuse, and young people with more than one type of victimization. However, the high percentage of people with more than one type of victimization found in previous studies, both national⁴³ and international European,^{44,45} especially among victims of childhood sexual abuse, means that analyzing victims of a single type of abuse and identifying the consequences specifically linked to it is a very difficult task. On the other hand, it is necessary to carry out a more comprehensive evaluation of psychopathology, without specifically dealing with clinical samples, to identify what types of psychopathological disorders may intervene in the risk of suicidal behavior among the victims of sexual abuse during childhood. In the studies consulted, the most prevalent symptoms in victims that could be related with the risk of suicide are depression, low self-esteem, a sense of hopelessness, substance use, and feelings of worthlessness and guilt, but further investigation is needed to assess the psychopathological disorders and personality factors that might mediate between childhood

sexual abuse and high risk of suicide in order to devise specific therapeutic plans for such victims.

STUDY LIMITATIONS

Few studies have analyzed suicidal behavior in minors who are victims of childhood sexual abuse in the general population. In this sense, the conclusions of the study are limited by this particular. One of the limitations inherent to the study of childhood sexual abuse is the definition used to delimit the concept. The behaviors that shape the experience of sexual abuse in different articles may also affect the results obtained, so it is necessary for studies to evaluate such experiences using standardized instruments accepted by the scientific community to facilitate the comparison of published studies. Regarding this point, assessment tools for child victimization like the Juvenile Victimization Questionnaire⁴⁶ are being used in various countries around the world and are a promising line of investigation that should make it easier to conduct systematic reviews.

The evaluation of suicidal behavior in the studies consulted did not yield results on the rate of consummated suicides, which is a limitation for evaluating the role of childhood sexual abuse in the risk of suicide. Some authors³¹ suggest that one of the reasons why consummated suicide probably does not affect the results is that the number of consummated suicides in the population of children and adolescents is relatively small. The authors argue that this may be due to the fact that there are few published studies that have used the psychological autopsy method to evaluate childhood sexual abuse as a risk factor for consummating suicide, which makes it difficult to raise these topics with the family or friends of the deceased.

Other limitations of the studies consulted that should be taken into account include the estimates of participant age using their school year, as this varies between countries and educational systems and does not allow us to know the real age of the subjects in the study sample. Another limitation was the type of sampling used in some studies based on convenience rather than representativeness. In turn, the use of bivariate or multivariate analysis hinders comparisons of studies. It is also highly relevant that most of the studies consulted do not present their results in terms of the gender or age of the victims, which interferes with establishing differentiated profiles of suicidal behavior in terms of these variables. Finally, the scant information provided in the abstracts of the studies included in the review is another impediment to systematic review because it interferes with literature searches as a tool for the systematic and objective retrieval of information on a particular topic. This should be improved to facilitate access to the results of many studies that may be useful for professional practice.

CONCLUSIONS

In conclusion, the results of this review should alert us to the high prevalence of suicidal behavior in adolescent victims of childhood sexual abuse. It is important to develop a better understanding of the short-term and long-term effects of childhood sexual abuse and to be aware of the importance of exploring the presence of suicidal thoughts and intentions in victims.

We believe that awareness of the results presented here can help us to implement more appropriate intervention measures in these victims and facilitate the development of more effective preventive treatments targeting this high risk group and help to curtail this serious problem in adolescents.

CONFLICTS OF INTEREST

There was no conflict of interest.

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