

## SCHOOL INTERVENTIONS FOR SELF-INJURIOUS BEHAVIOR AMONG ADOLESCENTS: A SYSTEMATIC REVIEW AND META-SYNTHESIS

## INTERVENÇÕES PARA CONDUTA AUTOLESIVA EM ADOLESCENTES: UMA REVISÃO SISTEMÁTICA E METASSÍNTESE

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**Abstract:** This study aims to carry out a meta-synthesis on interventions to prevent and address self-injurious behavior among adolescent schoolchildren. A systematic review was carried out in five databases. Interventions were considered any actions carried out constantly to prevent or address self-injurious behavior among adolescents. Features and constructs of the interventions were analyzed according to the theoretical framework of the social concept 'health-disease' process. A total of 12 studies were selected, 9 aimed to describe or evaluate interventions specifically related to self-injurious behavior, 1 focused on suicide and 2 were related to mental health. The approaches were focused on the health problem and were focused on health problems and the approaches were structured under conventional care practices and disregarded the possibility of integrative and complementary interventions. The interventions were focused on approaches restricted to the problem (self-injury), on behavior modification, and the cognitive dimensions of individuals through the transmission of information.

**Keywords:** Self-injurious behavior; Adolescent; Systematic review.

**Resumo:** Este estudo tem como objetivo realizar uma metassíntese sobre intervenções para prevenir e abordar comportamentos autolesivos em adolescentes escolares. Trata-se de revisão sistemática realizada em cinco bases de dados. Como intervenções foram consideradas quaisquer ações realizadas para prevenir ou abordar o comportamento autolesivo entre os adolescentes. As características e constructos das intervenções foram analisados segundo o referencial teórico do conceito social processo saúde-doença. Foram selecionados 12 estudos, 9 com o objetivo de descrever ou avaliar intervenções relacionadas ao comportamento autolesivo, 1 focado no suicídio e 2 intervenções relacionadas à saúde mental. As abordagens das intervenções centraram-se no problema de saúde e as abordagens estruturavam-se em práticas assistenciais convencionais e desconsideraram a possibilidade de intervenções integrativas e complementares. As intervenções foram focadas em abordagens restritas ao problema (automutilação), na modificação do comportamento e nas dimensões cognitivas dos indivíduos, por meio da transmissão de informações.

**Palavras-chave:** Comportamento Autodestrutivo; Adolescente; Revisão Sistemática.

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## 1 Introduction

Self-injurious behavior is a set of conducts that could result in intentional harm to one's own body, which may or will lead to any degree of physical or psychological injury (NOCK, 2009).

The behavior may vary regarding the purpose, either with or without suicidal intention. In English, the term “*self-harm*” is used when the intention of the action is not considered. The term “*non-suicidal self injury*” is used for situations in which self-injury is not correlated with suicidal intent. Furthermore, frequency and intensity of the act may vary. A study carried out with 4,405 students between 10 and 22 years in China ranked self-injurious behavior without suicidal intent as moderate-serious and mild-minor (TANG *et al.*, 2016). Moderate or serious self-injurious behaviors included cutting, burning, self-tattooing, and skin scratching. On the other hand, mild or minor self-injurious behavior included: hitting oneself, pulling out hair, inserting objects under the nail or other areas, skin excoriation or wounds until blood drained. In 98.4% of the cases analyzed, adolescents involved in self-injurious behavior developed between 1 to 5 different types of behavior. Out of those who reported the behavior, 56.7% did it 5 to 11 times in the last year (TANG *et al.*, 2016).

Literature reports the emergence of self-injury behavior in younger adolescents between 12 and 14 years old, with peak incidence around 15 to 17 years old and spontaneous decrease in late adolescence (MORAN *et al.*, 2012; PLENER *et al.*, 2015). However, the late start date or the maintenance of such conduct may increase the risk for suicidal ideation and behavior (KOENIG *et al.*, 2017).

The unfavorable outcomes mentioned in the literature emphasize self-injurious behavior as a public health issue and the need to structure early interventions for such health problem. Most procedures are performed at home when referring to medication overdoses and cuts (with values around 83%) (MADGE *et al.*, 2008). However, when adolescents adopt various methods for self-directed violence, the highest percentage of behaviors occurs outside home (values above 85%) (MADGE *et al.*, 2008). Another feature related to the behavior is the low demand for help (around 50% of respondents in a study sought for help) (ROWE *et al.*, 2014). When they look for help, they do it by using informal means through friends, family or even on Internet (ROWE *et al.*, 2014). Findings suggest that interpersonal barriers (such as beliefs and fears of negative consequences, stigmatization) strongly influence the decision to look for help (ROWE *et*

*al.*, 2014). The preference for using technological mediation on online spaces to talk about self-injury was mentioned by 98% of the adolescents in a study (JONES *et al.*, 2011).

The school is an important locus to face and prevent the self-injury behavior. Strategies for addressing self-injurious behavior in schools seem to prioritize school staff, school counselors and nurses, and the search for and referral of students at risk. However, a study compared three different intervention strategies for self-injurious behavior in schools and observed that these strategies were not more effective to reduce the occurrence of self-injury and suicidal behaviors among adolescent students. A multicenter, cluster-randomized study evaluated school-based suicide prevention programs, such as Saving and Empowering Young Lives in Europe (SEYLE) and followed 11,110 adolescents from ten European countries (WASSERMAN *et al.*, 2010). Three types of intervention were carried out: training gatekeepers (teachers and school staff), a training program aimed at students, and case screening performed by professionals with students at risk. In the twelve-month follow-up, the program that involved students' awareness on self-injurious conduct was associated with a significant reduction in suicide attempts and severe suicidal ideation compared to the control group (WASSERMAN *et al.*, 2010).

Among the reported findings, a trend towards interventions focused on explaining the problem can be observed, which are centered on identifying and referring cases, while the school team repeats the need for more training to deal with the issue. In fact, self-injurious behavior seems to be a transgressive behavior (EVANS; HURRELL, 2016), which may favor its characterization as "bad behavior" and could raise questions among the school team about the role or function in the school to face such behavior.

Problems for approaching self-injurious behavior may not be only interpersonal, but also have a pattern in educational institutions that faced the challenge of self-directed violence among their students. Among the challenges mentioned stigmatization on this subject was observed, which may lead to institutional exclusion of self-harm adolescents (EVANS; HURRELL, 2016; PARKER, 2018). Results show that the self-harming topic is not prioritized in school curricula. Despite being expressed as necessary by the students, it is treated in some cases as "bad behavior" and health support is denied. In addition, the strategy for referring incidents of self-harm to external experts contributes for unhelpful behavior among students and between students and teachers. Other conditions at school context may increase self-injury, such as anxiety, stress associated with school

performance, and bullying (EVANS; HURRELL, 2016; PENG *et al.*, 2019; RICHARDSON *et al.*, 2005).

Despite the challenges mentioned in the literature for the specific approach to self-injurious behavior at school, the role of this institution is perceived as important to prevent and address this problem. Findings in the literature suggest that a stronger bond with family and school can protect young people in a risky trajectory. In a recent research, young people reporting more connection with school had lower levels of depressive symptoms, suicidal ideation, social anxiety, and sexual activity, as well as higher levels of self-esteem and more adaptive use of free time (FOSTER *et al.*, 2017). On the other hand, a low sense of belonging to the school institution increased by six times the probability of self-injury among those youngsters in the study (KLEMERER *et al.*, 2017).

The scientific evidence of interventions for self-injurious conduct is not well established yet and there are gaps on research on interventions against self-injury (DE SILVA *et al.*, 2013; MORKEN *et al.*, 2019). In a systematic review, few studies found effective results for actions to prevent self-injurious behavior at school and most publications on this topic also cover suicidal behavior (MARCHANT *et al.*, 2017; MORKEN *et al.*, 2019; WASSERMAN *et al.*, 2010) or individual interventions, with the assessment of cognitive behavioral as the standard therapy (IYENGAR *et al.*, 2018; KALICHMAN *et al.*, 2020). Metasyntheses that addressed collective interventions for self-injurious behavior at schools were not identified.

Based on the evidence and knowledge gaps described above, the following research questions were established: a) What are the actions reported in the literature for preventing and approaching self-injurious behavior in adolescent schoolchildren? b) Who are the social actors who developed the actions reported in the literature to approach and/or prevent self-injurious behavior in school adolescents? c) In which countries/regions were studies carried out on actions to prevent and/or address self-injurious behavior in school adolescents? This study aims to carry out a meta-synthesis on interventions to prevent and address self-injurious behavior among adolescent schoolchildren.

## 2 Methodology

### 2.1 Study Protocol

The methodology adopted for this study is qualitative and descriptive and it is developed through meta-synthesis. For this purpose, a study protocol was developed and registered in the PROSPERO database with the following protocol: CRD42020186355.

A meta-synthesis consists of several methodological strategies to synthesize findings from qualitative studies to significantly contribute to support policies, practices, and research (PATERSON *et al.*, 2009). In this study, the methodology proposed by Sattar *et al.*, (2021) was adopted and adapted for a meta-synthesis. The methodology follows seven steps: starting the research, deciding on what is relevant to the initial interest, reading the studies, establishing how the studies are correlated, translating the studies into another, synthesis of translations, and expressing the synthesis (SATTAR *et al.*, 2021).

### 2.2 Search strategy

Database research was performed in January 2021. The search for references was carried out in the following databases: BVS Salud, the Central Library, PubMed/Medline, Scopus, and Web of Science. The following expressions were used as descriptors for the search: “School” and “self-injurious behavior” and “adolescent”. The findings presented in this study cover the literature published without using a publication year filter. A list of previously published literature reviews on self-injurious behavior among adolescents was also evaluated to identify additional studies (DE SILVA *et al.*, 2013; MORKEN *et al.*, 2019). References found in the databases were exported to Mendeley and duplicates were excluded.

### 2.3 Fundamental concepts of reference for this study

Self-injurious behavior is a set of conducts that could result in intentional harm to one's own body, which may or will lead to any degree of physical or psychological injury (NOCK, 2009). The behavior may vary regarding the purpose, either with or without suicidal intention. The term “self-harm” is used when the intention of the action is not considered. The term “non-suicidal self-injury” is used for situations in which self-injury is not correlated with suicidal intent (GUERREIRO; SAMPAIO, 2013).

The concept of social actor considered in this proposal is described by Matus (1993): a person, a group of people or an organization, either stable or transitory, able to accumulate strength, to develop interests and needs, as well as acting by producing facts in the situation. Therefore, the social actor mentioned in this work can be either a person, an institution, or a group able to act within their context (MATUS, 1993).

Any actions systematically carried out to prevent or address self-injurious conduct are considered as interventions in this work, including theoretical proposals, protocols or policies built on a scientific basis and actions carried out on Internet or in person.

For the purposes of this study, the concept of adolescence proposed by the WHO was used. It is a unique phase of an individual's life, who experiences fast physical, cognitive, and psychosocial growth. The stage is between 10 and 19 years old and during this period the adolescents establish behavior patterns that can protect or put at risk their health and the ones with whom they live (WORLD HEALTH ORGANIZATION, [s.d.]).

The different concepts of the health-disease process throughout history described by Ide and Chaves (IDE; CHAVES, 1990) were used to compare the characteristics and constructs identified in the articles included in this review. These authors describe three different conceptions for the health-disease process. An isolated dimension of the health-disease process understands the theories that explain of health issues based on external causes. These causes could isolatedly act on human beings by triggering abnormalities. The theory of disease multicausality is a concept that describes a set of factors capable of causing physical changes and that can be corrected through collective interventions without further analysis of the relationships in the social context (interaction between the environment, different agents, and human host). The social theory of the health-disease process considers health changes because of human interaction in the social context in which human beings are inserted. It broadly characterizes the concept of environment, including socio-economic determinants (Gross Domestic Product, income, production, sanitation, literacy) and the historical relations between human beings and the production system (IDE; CHAVES, 1990).

## **2.4 Eligibility Criteria**

Studies were selected according to the acronym PICOT (Patient, Intervention, Comparison, Outcome, Time), which met the following criteria: involving adolescents (10 to 19 years old of both sexes; ones who addressed interventions for self-injurious

conduct with and without suicidal intention, and also suicidal behavior; qualitative studies that analyze interventions to prevent and address self-injurious behavior in schoolchildren or adolescents; or qualitative studies about individual or collective interventions to promote mental health in school adolescents), published in English, Portuguese or Spanish. Articles with qualitative and quantitative methodology were included in this meta-synthesis (8 references).

The exclusion criteria were applied for publications that addressed only one of the sexes (male or female); samples without detailing about the age group in the abstract, being described as adults or young adults; studies in which the abstract or article was not available, and those references that investigated a specific type of self-injurious conduct (e.g., cuts, suffocation, poisoning).

## 2.5 Study selection and data extraction

Following the methodology proposed by Sattar *et al.*, 2021, we preceded the study selection. The free *Rayyan online* application (available at: <https://rayyan.qcri.org/users/signin>) was used to aid the procedure of choosing the references that met the inclusion criteria defined for the study with tools specifically developed to help the study selection by independent researchers.

This step was carried out by two independent researchers and if there was disagreement between them, a third evaluator stated the final judgment. Three researchers worked on data extraction (all articles included were verified by two of the reviewers). In case of discrepancies, a third researcher verified the data extraction to reach a consensus. The following data were extracted: year of publication, country where the intervention was carried out, research questions, study objectives, study design, social actor responsible for developing the intervention, sampling strategy, sample characteristics, context, analysis, and interpretation (founded theory of the study), findings, limitations, conclusions.

## 2.6 Translation and Synthesis

The studies were read and reread to identify the analysis categories. From the extraction worksheet, a table was built with the main characteristics extracted from the studies included in the meta-synthesis: author, country where the intervention was carried out, objectives, social actor responsible for developing the intervention, sampling

characteristics, findings, local context (BERGER; HASKING; REUPERT, 2015; COOKE; JAMES, 2009; GRANELLO; ZYROMSKI, 2018; JONES *et al.*, 2011; KLINGMAN; HOCHDORF, 1993; MALONEY *et al.*, 2008; MCALLISTER *et al.*, 2010; MUEHLENKAMP; WALSH; MCDADE, 2010; OWENS *et al.*, 2015; SHAPIRO, 2008; THOMPSON; POWIS; CARRADICE, 2008). Based on the reading of the articles, interventions proposed for the prevention and approach of self-injurious behavior were identified and a table was built with the characteristics of the interventions identified (programs): title of the program, article in which the program is quoted, program's proposal, conception of self-injurious behavior, type of response, potential, and limitations of the programs.

The rereading of the articles was carried out to identify similarities and differences and to systematize the second and third order constructs. The comparison between the studies allowed the translation of the findings and the synthesis of subthemes into original concepts (Descriptors or Thematic Titles) as can be seen in the Frame 1.

The decision on including/excluding data, developing concepts and constructs was carried out through review meetings among the team of researchers to reach consensus on the several interpretations of the data to ensure reliability to the findings. From the construction of thematic titles, gaps were observed between the proposed interventions. This finding can be evidenced from the construction of an infographic (Figure 2) based on the theoretical framework on different concepts of the health-disease process throughout history proposed by Ide and Chaves (1990).

### **3. Results and discussion**

#### **3.1 Results of the search**

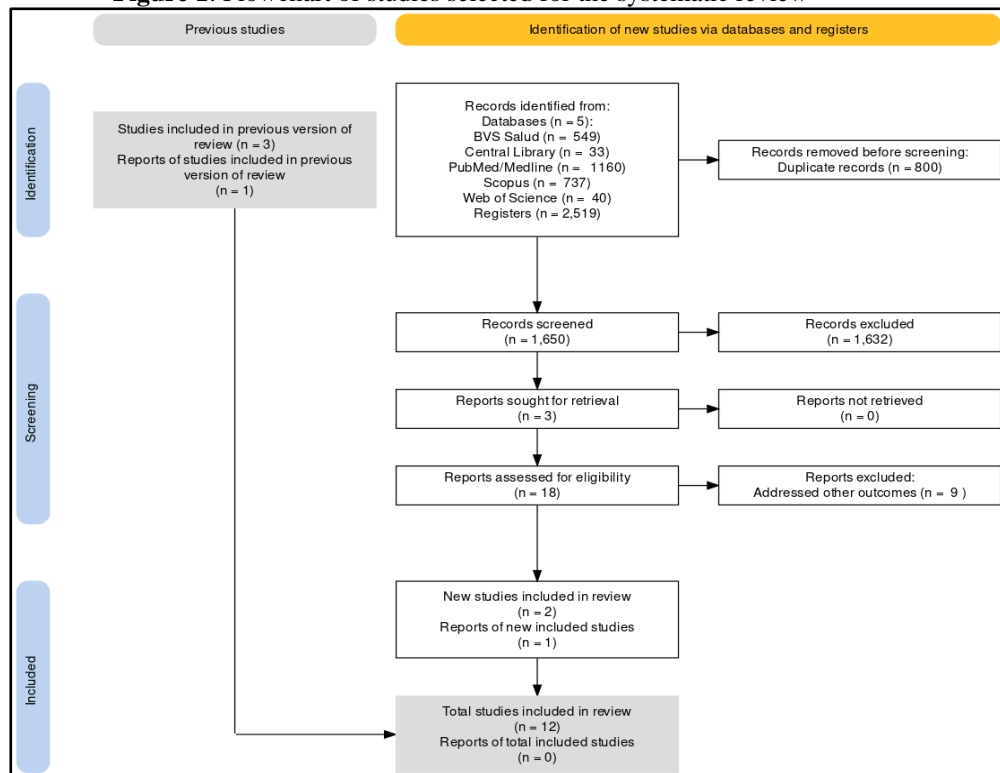
There were 2,519 studies found in the databases. After excluding 869 duplicates, 1,650 articles remained. By reading the title and abstract, 1,632 articles were excluded, leaving a total of 18 articles. Of these, 9 were excluded after reading the full text because they addressed other outcomes of interest to this study. Two articles were included from the search in literature reviews and 1 publication (gray literature) cited in one of the selected articles, ending the sample with 12 publications (Figure 1). The gray literature included refers to the manual of one of the programs researched by one of the articles selected in this study.



### 3.2 Characteristics of the included studies

The studies included in this research were published between 1993 to 2019: except for one article (published in 2019) all others were published until 2015. The studies described interventions developed in the following regions: Australia (4 articles), United States (3 articles), United Kingdom (3 articles) and England (1 article). In a publication it was not possible to identify the place where the action was developed. It is possible to observe that the publications are concentrated in Western countries with high income and high HDI (WORLD BANK, [s.d.]). This finding coincides with the previous report of a systematic review study on the prevalence of self-injury. It states that research in the field of non-suicidal self-injury (NSSI) is commonly carried out with mostly Caucasian samples in Western countries, such as the United States, Canada, Australia, and European countries (GHOLAMREZAEI; STEFANO; HEATH, 2015). Other systematic reviews that addressed interventions for self-injury in adolescence did not geographically characterize the publications included or did not emphasize this topic in their results or discussion (EVANS; HURRELL, 2016; IYENGAR *et al.*, 2018; MORKEN *et al.*, 2019). In two studies, it was possible to observe the country same pattern of geographic distribution previously described (EVANS; HURRELL, 2016; IYENGAR *et al.*, 2018).

**Figure 1:** Flowchart of studies selected for the systematic review



Source: PRISMA, 2021

Out of the 12 publications, 9 aimed to describe or evaluate interventions specifically related to self-injurious behavior, 1 focused on suicide and 2 interventions were related to mental health. Two studies dealing with the same intervention (called School Link in Australia) mentioned the mental health in their goals. No study mentioned health promotion in the description of objectives.

Eight interventions were described from the publications included in this study: Three of them consisted of policies, proposals, protocols, or recommendations built from the literature review (Policy of Approach to Self-injurious Conduct (BERGER; HASKING; REUPERT, 2015), Protocol for Addressing self-injurious conduct in schools (SHAPIRO, 2008); Comprehensive School Suicide Prevention Program (GRANELLO; ZYROMSKI, 2018). One intervention was an intersectoral government initiative for early identification and intervention for mental health problems in schools (School Link Program) (MALONEY *et al.*, 2008). Another 3 interventions were described as training programs for small groups of adolescents (Group Empowerment Program on Self-Harmful Behavior (solution-focused approach) (MCALLISTER *et al.*, 2010); Primary Prevention Program for addressing self-harm and distress (based on cognitive behavioral theory) (KLINGMAN; HOCHDORF, 1993), SOSI program (Signs of Self Injury) (MUEHLENKAMP; WALSH; MCDADE, 2010). The last remaining intervention consisted of an online discussion forum on self-injury (JONES *et al.*, 2011; OWENS *et al.*, 2015).

Among the interventions described, one of them referred to a proposal involving a virtual interaction environment (online forum) and all the others dealt with proposals for actions or interventions carried out in school environments and through face-to-face meetings. Out of the interventions described, 4 referred to theoretical proposals that had not been implemented until the time of publication in the study included in the sample.

Among the 4 non-theoretical interventions, only 2 described executed programs (School Link Program) (MALONEY *et al.*, 2008) and SOSI Program (Signs of Self Injury)(MUEHLENKAMP; WALSH; MCDADE, 2010). The other 2 were interventional studies conducted by researchers with a defined sample for simulating a real situation (1 of them in a virtual environment) (Primary Prevention Program to address self-injurious conduct) and distress(KLINGMAN; HOCHDORF, 1993), and an online discussion forum on self-injury described (JONES *et al.*, 2011; OWENS *et al.*, 2015). The results of the studies (JONES *et al.*, 2011; KLINGMAN; HOCHDORF, 1993; OWENS *et al.*,

2015) are based on a small sample and the authors recommended caution to generalize the results found to other contexts.

**Frame 1:** Constructs and Descriptors / Thematic Titles from the Programs identified in the meta-synthesis

Program quoted /Authors	Proposal/ Builders	Second Order Constructs	Third Order Constructs	Thematic Descriptors	Titles
<p><b>Approach Policy for Self-Injury Behavior</b> Berger, Hasking and Reupert (2015)</p>	<p>Recommending actions based on literature review to be adopted by school professionals towards self-injured students or ones under suspicion to do so.</p> <p>Presenting basic questions to help school to build their own policies to face one's self-injury behavior.</p>	<ul style="list-style-type: none"> <li>*Response to schools;</li> <li>*Theoretical proposal elaborated from literature review</li> <li>*Actions for teachers;</li> <li>*Identification and referral;</li> <li>*Internal and external routing;</li> <li>*Training for recognition, approach and referral to school staff.</li> <li>*Individualized actions;</li> <li>-Referral to experts;</li> <li>*Definition of self-injury = description of conduct;</li> <li>*Individual risk factors (mental problems, involvement with alcohol, drugs, trauma, abuse).</li> </ul>	<ul style="list-style-type: none"> <li>*Theoretical proposal;</li> <li>*Individual approach and behavior modification;</li> <li>*Family and social contexts disregarded;</li> <li>*Problem approach;</li> <li>*Interventions focused on cognitive dimensions of individuals;</li> <li>*Poor articulation with psychosocial care network</li> </ul>	<p>Dimension of health-disease process</p>	<p>Aggravation and individual</p>
<p><b>Primary preventive Program to approach Self-injury Behavior and Anguish/</b> Klingman and Hochdorf (1993)</p>	<p>Program based on the principles of behavioral-cognitive therapy;</p>	<ul style="list-style-type: none"> <li>*Response to schools;</li> <li>*Actions for adolescents;</li> <li>*Primary prevention = attitude change;</li> <li>*Skills training;</li> <li>*Coping with anguish;</li> <li>*Individual risk factors (suicidal tendencies, loneliness, hopelessness, problematic strategies of coping)</li> <li>*Definition of self-injury = behavior learned, wrong answers, inadequate skills</li> <li>*Supported by the system of multipliers ("gatekeepers, buddy system");</li> <li>*Developed by counselors, psychologists or volunteers;</li> </ul>	<ul style="list-style-type: none"> <li>*Approach for individual and behavior modification;</li> <li>*Proposal executed at small scale;</li> <li>*Family and social contexts disregarded;</li> <li>*Approach of problem;</li> <li>*Interventions focused on cognitive dimensions of individuals</li> <li>*Poor articulation with psychosocial care network</li> </ul>	<p>Dimension of health-disease process</p>	<p>Aggravation and individual</p>

		*Pre- and post-intervention assessment;			
<b>School Link Program /</b> Maloney <i>et al.</i> , (2008)	Early identification of mental health problems; provide access to information based on evidence about early intervention programs on mental health at schools; early access to services, mental health specialists and support for the recovery journey	*Response to society; *Intersectoral; *Identification of groups socially unsafe. *Socio-economic-cultural diversity; *Strengthen communication between school staff and mental health professionals; *Addresses mental health; *Training for professionals (about mental health problems and implementation of programs; *Improvement of the work process of school counselors; *Well-being and cultural contexts (Aboriginal, cultures and languages) and gender issues. *Early identification and referral to mental health services; *Collaboration between health professionals mental and counselors; *Implementation of mental health programs in schools by specialists; *Alignment with other policies;	*Large-scale proposal Family and social contexts considered; *Strengthening the articulation of psychosocial care network for adolescents; *Promotion of mental health; *Poor articulation with *Primary health care network. *Focus on experts;	Dimension of the health-disease process: territory-process	School Link Program
<b>Group strengthening Program on Self-Injury Behavior/</b> McAllister <i>et al.</i> , (2010)	Programme executed (contract/agreement) to be offered to small groups of six to eight people and facilitated by a nurse	*Response to schools; *Training for nurses; *Students; *Solution-focused approach; *Collective interventions; *Skills training; *Coping;	*Individual approach and behavior modification *Theoretical proposal; *Family and social contexts disregarded; * Problem approach; *Interventions focused on cognitive	Dimension of the health- disease process: injury and individual	Group strengthening Program on Self-Injury Behavior

	school	<ul style="list-style-type: none"> <li>*Definition of self-injury = strategy to handle and communicate tensions and emoticons support for facilitators (post-Intervention;</li> <li>*Barriers to addressing Self-Injury (taboos, fears, stigma);</li> <li>*Difficulties in referral;</li> </ul>	<ul style="list-style-type: none"> <li>dimensions of individuals;</li> <li>*Deficient articulation with psychosocial care network;</li> </ul>		
<p><b>Online Community Forum for Self-Injured Adolescents/</b> Owens <i>et al.</i>, (2015) and Jones <i>et al.</i>, (2011)</p>	<p>Bringing groups of adolescents and health professionals together In a discussion form, observing their behavior and discourse.</p>	<ul style="list-style-type: none"> <li>*Answer to adolescents who undergo self-injury behavior;</li> <li>*Collective interventions;</li> <li>*Virtual space for dialogue and support;</li> <li>*Virtual process territory;</li> <li>*Flexible and broad definition of self-injury (behavior that entails problems)</li> <li>*Communication barriers with health professionals.</li> <li>*Virtual environment = impersonality and anonymity</li> <li>*Supported by the multiplier system (“gatekeepers, buddy system”).</li> </ul>	<ul style="list-style-type: none"> <li>*Individual approach and support proposal executed at small scale</li> <li>*Family and social contexts disregarded;</li> <li>*Problem approach;</li> <li>*Interventions focused on cognitive dimensions of individuals;</li> <li>*Deficient articulation with psychosocial care network;</li> <li>*Democratic space for dialogue by respecting the privacy of adolescent</li> </ul>	Dimension of the health-disease process: territory-process	Online Community Forum for Self-Injured Adolescents
<p><b>Protocol for self-injury behavior in schools/</b> Shapiro (2008)</p>	<p>Interdisciplinary protocol to be applied by school nurses, social workers and counselors to treat adolescents who self-injury. Constructed based on a literature review.</p>	<ul style="list-style-type: none"> <li>*Response to schools;</li> <li>*Theoretical proposal;</li> <li>*Individualized actions;</li> <li>*Knowledge assessment;</li> <li>*Application training and evaluation;</li> <li>*Cognitive training;</li> <li>*Intervention protocol for school nurses, social workers and counselors;</li> <li>*Flexible and broad definition of self-injury (strategy to alleviate emotional distress);</li> </ul>	<ul style="list-style-type: none"> <li>*Individual approach and behavior modification;</li> <li>*Proposal executed at small scale;</li> <li>*Family and social contexts disregarded.</li> <li>*Problem approach;</li> <li>*Interventions focused on cognitive dimensions of individuals;</li> <li>*Deficient articulation with psychosocial care network;</li> </ul>	Dimension of the health-disease process: injury and individual	Protocol for self-injury behavior in schools

		*Pre- and post-intervention assessment;			
<b>Program SOSI(Signs of Self Injury)/</b> Muehlenkamp <i>et al.</i> , (2010)	The SOSI program for the prevention of self-injurious behavior in schools aims to encourage welcoming attitudes to offer help, increase behaviors that seek help from peers or the person who performs self-injurious behavior and reduce episodes of self-injury behavior.	*Response to schools; *Collective actions; *Cognitive training; *Encourage the search for help (cards self-assessment); *Proposal executed and evaluated; *Theoretical support material for the action; *Developed by psychologists or school counselors; *Pre- and post-intervention assessment;	*Individual approach and behavior modification; *Proposal executed at small scale; *Family and social contexts disregarded. * Problem approach; *Interventions focused on cognitive dimensions of individuals; *Deficient articulation with psychosocial care network;	Dimension of the health-disease process: injury and individual	Program SOSI (Signs of Self Injury)
<b>Programme comprehensive of Prevention of suicide in Schools/</b> Granello and Zyromski (2019)	It proposes principles based on scientific evidence for development of a program school to prevent suicide and promote understanding on the topic.	*Answers for schools; *Theoretical proposal; *Collective construction of the intervention against suicide; *Social structure in the community for support; *Approach to the stigmatization of suicide; *Intervention strategies: education curriculum on the subject, training of stakeholders, programs of screening; *Strengthening of protective factors; *Ethics in the planning and execution of the program; *Pre- and post-intervention assessment;	*Participatory construction of the strategy; *Individual approach and behavior modification; *Theoretical proposal; *Family and social contexts disregarded; *Problem approach; *Interventions focused on cognitive dimensions of individuals; *Stimulus for articulation with the psychosocial care network; *Ethical approach; *Institutional intervention for reducing stigmatization on the theme	Dimension of the health-disease process process injury and individual:	Programme comprehensive of prevention of suicide in schools

Source: Authors' elaboration

### 3.3 Meta-synthesis

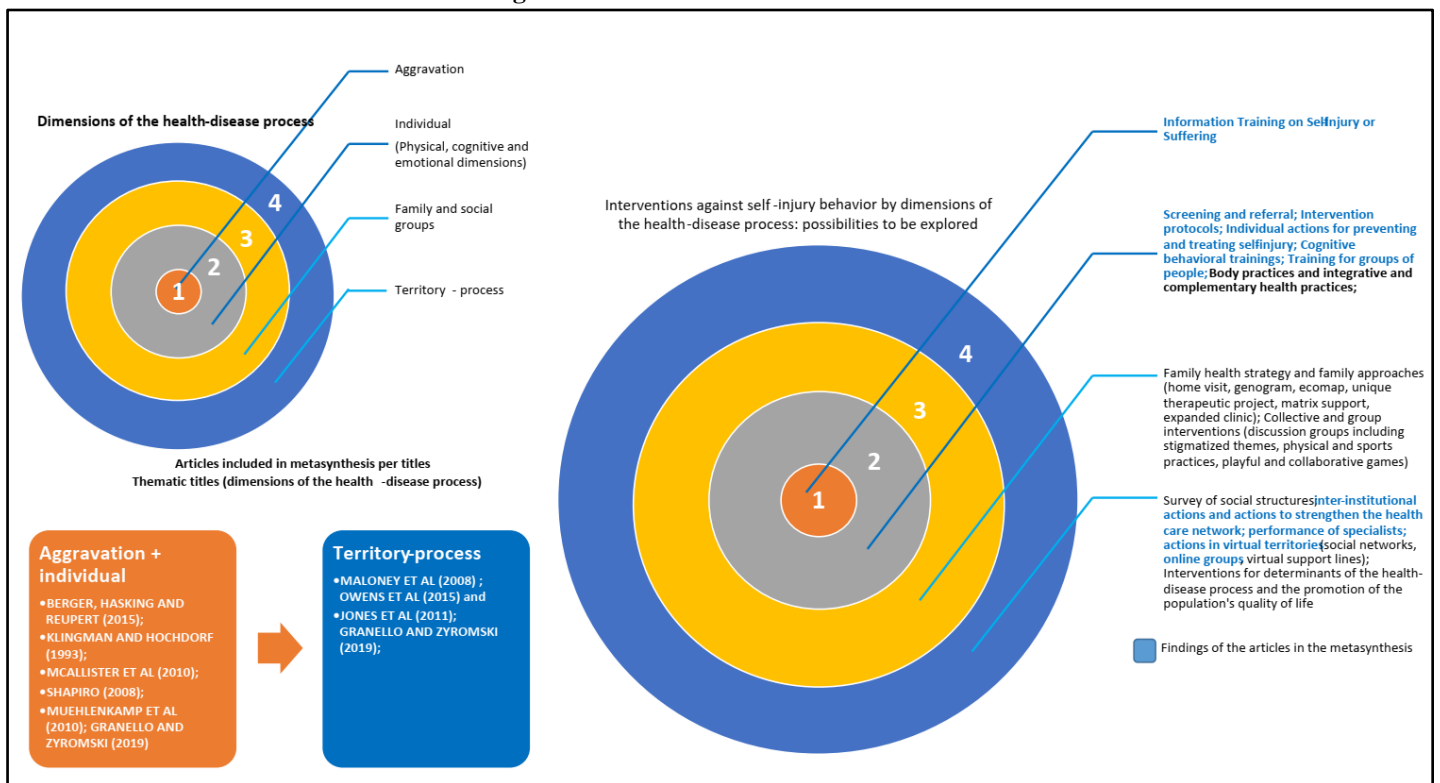
Regarding the features of the sampling of the articles included in this meta-synthesis, 2 articles included only adolescents in their samples, 3 included only school nurses, 1 article included only the school staff, 2 articles included adolescents and mental health professionals (psychologists, psychiatrists, social workers or final-year students of these courses), and 2 publications included mental health specialists, school staff and school counselors. It was not possible to identify the social actor responsible for developing the intervention for self-injury in adolescents in 6 publications either due to methodological reasons or the absence of this information in the texts selected.

It was possible to identify the social actor in 6 articles, 4 of them had mental health professionals (psychiatrists, psychologists, mental health specialist nurses, senior students in the mental health area) as responsible social actors. School nurses were identified as responsible social actors in 2 articles. Other categories, such as social workers and counselors, appear as responsible in two publications associated with other professionals such as nurses and psychologists. No publication mentioned the participation of family members or primary care health teams.

Based on systematization of the programs referred to in the articles, their comparison and synthesis, it was possible to establish the second- and third-order constructs. The analysis of third-order constructs allowed the identification of the following characteristics in common among the studies: restricted approach to the problem (self-injury); approach to the individual or groups of people through behavior modification; interventions focused on the cognitive dimensions of individuals through transmission of information, concepts, definitions, family, and social contexts disregarded, poor articulation with the psychosocial care network and proposals built from a literature review that have not yet been implemented. Out of the 8 programs identified, 2 had different characteristics from those described above (Frame 1) (JONES *et al.*, 2011; MALONEY *et al.*, 2008; OWENS *et al.*, 2015). These programs had the following constructs different from the others: Proposal carried out on a large scale; family and social contexts considered; strengthening the articulation of the psychosocial care network for adolescents; promotion of mental health; deficient articulation with the primary health care network; focus on specialists (MALONEY *et al.*, 2008); democratic space for dialogue by respecting the adolescent's privacy (JONES *et al.*, 2011; OWENS *et al.*, 2015).

The findings described in the previous paragraph favor a reflection on the health-disease process and the intervening and determining factors considered to be operating in this process since these factors provided theoretical framework to understand the realities and to structure interventions studied in this article. The concept of health based on standards of conduct and deviation was described by Ide and Chaves (1990) and outlines a specific way of intervening. This concept considers external causes as actions on homogeneous people, which results in imbalances considered as abnormalities (IDE; CHAVES, 1990). Under this concept, self-injury and the self-injured adolescent are seen as a problem that needs to be resolved, addressed and cured by highly qualified professionals. The behavior is required to be changed and aligned with a socially expected and healthy conduct. The interventions guided by this concept were synthesized with the thematic title/descriptor “Dimension of the health-disease process: problem and individual” and can be seen in Figure 2.

**Figure 2:** Thematic titles and interventions



Source: Authors' elaboration

Most programs described in this meta-synthesis (6 out of 8 programs) propose actions based on this dimension: screening and referral, individual intervention protocols, individual actions for preventing and treating self-injury, cognitive-behavioral training, solution-focused approach, training for groups. Similar reflections were made in a



previous study on the role of the school on self-injury and further investigations were recommended about institutional characteristics of self-injurious behavior (EVANS; HURRELL, 2016).

Interventions on the disease-individual dimension are based on health associated to the health-disease process with an external and one-way origin: it recognizes a unique and fundamental origin for producing the disease effect (IDE; CHAVES, 1990). Regarding self-injury, interventions based on the disease-individual dimension and including adolescents (3 programs out of 8 found) emphasize the cognitive dimension of the problem and the actions are structured to provide information about self-injury to facilitate identification and behavior change. Another possibility is to provide information about how the expected behavior should be in the face of emotional challenges so that the individual understands the ideal behavior. The physical body seems to be invisible in these interventions, although it is through violence over body that the adolescent signals internal suffering. Although disregarded by the field of interventions for self-injurious behavior, the body and physical activity are the object of study in other publications dealing with mental health and point out to expand care tools and enhance autonomy of the individuals (FROSI; TESSER, 2015).

A previous study associated low levels of physical activity with higher frequencies of self-harm behavior in adolescents (BOONE; BRAUSCH, 2016). Another study identified a positive effect between physical activity and self-esteem (higher physical activity scores were statistically related to higher self-esteem scores), and a negative effect between physical activity and depression, where higher physical activity scores are followed by lower depression scores (KIRKLEWSKI; WATSON; LAUCKNER, 2023). Physical exercise was also related to mood states. A study evaluated subjective negative mood states (tension, depression, anger, fatigue, mental confusion) and a positive mood state (called vigor). The statistically significant results positively associated physical activity with positive mood (WERNECK; NAVARRO, 2011). Conceiving body not only as a diagnostic dimension, but also as a possibility of non-prescriptive interventions implies breaking away from a medicalizing logic and actions based on pharmacological therapy to interrupt symptoms.

The approaches observed are structured under conventional care practices and disregard possible integrative and complementary interventions through traditional medicine care techniques, although the literature reports their use for the mental health approaches. Integrative practices are acupuncture, massage therapy, herbal medicine,

meditative practices, visualization and relaxation, homeopathy, spiritual healing, hypnosis, music therapy, Yoga, traditional Chinese, Ayurvedic and indigenous medicines, among others. They were described for complementary treatment of anxiety, depression, and post-traumatic stress disorders (ASHER; GERKIN; GAYNES, 2017; CLARK *et al.*, 2014). A study on meditation practices indicated the improvement of patterns related to emotional intelligence such as optimism/mood regulation, assessment of emotions, and social skills (CHU, 2010). Another study on meditation practices observed improvements in mindfulness, stress perception, self-control, mood, and sleep (CALDWELL *et al.*, 2010). Such approaches introduce into care the perspective of valuing the individual's autonomy and uniqueness. They are considered bodily practices to enable the enhancement of listening, the expression of subjectivity and playful socialization, expanding the complexity of the care provided (FROSI; TESSER, 2015).

Moving backwards to think about the disease-health process and bringing back the paradigm of the sociological approach to the problem, it is possible to conceptualize health more broadly. This possibility aims at extrapolating individual limitations to understand collective living conditions as determinants for individual processes of illness and death. The disease therefore emerges not only from uni/multi-causal factors but also from a web of social relations established around the individual (IDE; CHAVES, 1990). From this broad concept, the thematic titles “Family and social groups” and “Territory-Process” were established (see Figure 2). The analysis and synthesis of the articles did not reveal interventions or proposals that include the family dynamics as an object of study and intervention for self-harm adolescents. Family emerges from ethical reflections on the professional secrecy to be broken or not, depending on the risk of suicide identified in the self-harm adolescent (EFE; ERDEM, 2018; GRANELLO; ZYROMSKI, 2018). Only the program reported by Maloney *et al.* 2008 refers to family relationships as expressions of cultural, educational, historical, political, legal, and religious diversity (MALONEY *et al.*, 2008). Such expressions have multivariate matrix of meanings, beliefs and ideas about health, mental health, and well-being. The program considers that refugee and immigrant families can express more complex mental health symptoms, although it does not describe in further details the interventions for the families of adolescents who self-harm (MALONEY *et al.*, 2008).

In a social approach to the health-disease process, the self-injured adolescent is not a patient or a disease, but an individual who signals and expresses a context of ill social relationships in which they are. The literature describes the social risk factors for

self-injurious behavior, such as bullying, gender and sexual orientation issues, drug trafficking, domestic or sexual violence, low socioeconomic status, child maltreatment) (ESPOSITO; BACCHINI; AFFUSO, 2019; MARS *et al.*, 2014; TALIAFERRO; MUEHLENKAMP, 2017), and protective factors, such as bond with school and family. Regarding actions for family approaches based on this social paradigm, it is possible to identify some strategies and tools developed by primary health care at Family Health Strategy. They are home visitation, genogram, ecomap, unique therapeutic project, matrix support, and expanded clinic (JORGE *et al.*, 2015; MELLO *et al.*, 2005; SHIM; RUST, 2013). These interventions allow the identification of family dynamics, support network and community support, in addition to enhancing the reception, bond and co-responsibility of individuals. They also allow for expanding access through team contribution to construct health care from the primary care teams. It is worth to highlight that this proposal rationalizes the patient's therapeutic itinerary but does not replace the psychosocial care network. The weakness of referral flows to specialized mental health care appears in 7 of the 8 interventions in this meta-synthesis, and the enhancement of the primary care teams needs to be accompanied by strengthening the support of the medium and high complexity health care network.

Collective and group interventions, such as sports and cultural practices, spaces for discussion about diversity and respect, also fit within the family and group dimension of mental health (FROSI; TESSER, 2015) and can be considered to address the self-injury process.

The fourth thematic title proposed from the studies included in this synthesis is called 'process-territory' and includes a survey on social institutions, inter-institutional actions, and movements to strengthen the care network; performance of specialists integrated into the network, actions in virtual territories (social networks, online groups, virtual support lines), interventions for determinants of the health-disease process and promotion of population's quality of life. Among the interventions studied, 3 were synthesized in this dimension. Out of the 8 studies, the only intervention starting from a government proposal and broadly articulated with the health and education network was in Australia. The other ones consisted of a theoretical proposal and a discussion forum that involved researchers, adolescents, and mental health professionals.

As well as the thematic title 'family and social groups', this descriptor was proposed based on the social concept of the health-disease process, considering that this concept goes beyond the limits of individual characteristics (gender, age, ethnicity,

among others) or ecological ones related to social environments (housing conditions, food, education, income, work, transport, employment, leisure, freedom, income, environment, access to and possession of land and access to health services) (IDE; CHAVES, 1990). This concept of health is in line with the concept of territory proposed by Santos, 2006 in which the material aspects and social interactions are considered inseparable: tensions, conflicts, collaborations are part of this geographical composition (SANTOS, 2006). In the territory-process dimension, self-injurious behavior can be interpreted as a socially constructed phenomenon, based on inequities and vulnerabilities of the social organization itself. This conception of self-directed violence is not recent and refers to the “*social rate of suicide*” conceived by Durkheim (2000), which is defined as the contingent of voluntary deaths fixed by the moral constitution of society (DURKHEIM, 2000). The author states that the patient's movements seem to express the personal temperament, but in fact they constitute an extension of a social situation expressed by the individual. Would it be, therefore, possible to establish a “social rate on self-injurious conduct”? Reflecting on the possibilities of coping with self-injurious behavior, is it possible to blame the individual's action of the adolescent in the face of violence (social, economic, gender and sexuality, race, religion, among others) which is socially constructed? Is it possible to expect adolescents to learn to modify their behavior within a social context that violates them daily? These questions lead to another reflection on interventions for self-injurious behavior: the need for institutional positioning (primary and specialized health care services, educational institutions, public authorities) to not only support individuals who undergo violence, but also to promote environments for the emotionally healthy development of individuals (actions to promote health and quality of life). Further studies are needed on the role of institutions and the performance of health policies in self-injury situations.

The synthesis of interventions for self-injurious behavior allowed us to identify several possibilities of approach. The proposal of organization in dimensions presented in this study does not intend to exclude action strategies but makes it possible to describe actions from a reductionist-individual perspective to actions with greater scope and complexity. These possibilities seem to be compatible with the complexity inherent in the field of study of self-directed violence. When selecting and planning an intervention for self-injurious conduct, it is recommended to reflect on the governability of the social actors who will carry out the approach.

This study found interventions in a limited number of countries/regions, so it is important to reflect on the influence of the health care models and the socioeconomic conditions of these regions to plan and execute the proposed approaches to self-injurious behavior described in this text. It is important to take into account that the local context can be a modulator for the proposed actions, and this must be considered when adapting them to territories with different characteristics.

### **3.4 Limitations**

It is possible to mention some gaps regarding the performance of this study, such as an absent bias analysis for the studies included in this meta-synthesis, the impossibility of accessing the primary documents of some interventions, as well as impossibility of identifying the social actors responsible for executing some programs. It is worth to mention the scarcity of empirical studies on interventions in local contexts.

### **4 Conclusions and implications for research and practice**

The interventions described in this study were developed in Western and high HDI countries. Only one intervention was a government initiative, and this intervention was the only one that mentioned mental health promotion in its objectives. It was not possible to identify the social actor for developing the interventions against self-injury behavior among adolescents. In the 6 articles where it was possible to identify the social actor, 4 publications had mental health professionals (psychiatrists, psychologists, mental health specialist nurses, senior students in the mental health area) as responsible social actors. In 6 out of the 8 programs analyzed, it was possible to identify the following characteristics in common among the studies: restricted approach to the problem (self-injury); approach to the individual or groups of people through behavior modification; interventions focused on the cognitive dimensions of individuals through transmission of information, concepts, definitions, family and social contexts disregarded, problematic articulation with the psychosocial care network and proposals built from a literature review that have not yet been implemented.

Further studies are necessary on interventions that include the participation of primary care teams and the strengthening of the psychosocial care Network to address self-injurious behavior among adolescents. In addition, further studies may be researched

in the future for care practices through the family approach, group body interventions, and integrative and complementary.

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