



Psychological autopsy as a tool for identifying suicide risk factors in adolescents: A systematic review
Autopsia Psicológica como herramienta para identificación de factores de riesgo del suicidio en adolescentes: Revisión sistemática

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Authors:

Leonor Jacqueline Moreano Jara¹ – <https://orcid.org/0009-0008-5768-6433>

Erika Gabriela Márquez Flores² – <https://orcid.org/0009-0003-3239-9386>

Affiliation:

¹Higher Technological Institute Republic of Germany (ISTRA), Riobamba, Chimborazo.

²Private Institution, Quito, Pichincha.

Corresponding author: Leonor Jacqueline Moreano Jara. Higher Technological Institute Republic of Germany (ISTRA). Address: Veloz and Vargas Torres, Riobamba, Ecuador. Email: lmoreanoj@istra.edu.ec. Telephone: 0995239576.

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ABSTRACT

Suicide among adolescents is a public health problem due to the interplay of multiple factors involved in its occurrence. The objective of this study was to analyze the scientific evidence regarding the usefulness of psychological autopsy in identifying risk factors for suicide among adolescents. A systematic review was conducted following the PRISMA 2020 guidelines and selected and evaluated 14 original articles using the CRF-QS instrument. The related findings showed that psychological autopsy makes it possible to access retrospective information from various sources and to identify risk factors for mental health problems, a history of suicidal behavior, violence, family conflicts, social isolation, academic difficulties, substance use, and issues related to the digital environment. Thus, the psychological autopsy allows us to look beyond the completed act to reconstruct the circumstances that preceded it and highlight factors that might otherwise go unnoticed.

Keywords: Adolescent; Suicide Risk Factors.



RESUMEN

El suicidio en adolescentes constituye un problema de salud pública debido a la interacción de múltiples factores que intervienen en su aparición. El objetivo de la investigación fue analizar la evidencia científica sobre la utilidad de la autopsia psicológica para la identificación de los factores de riesgo del suicidio en adolescentes. Se realizó una revisión sistemática siguiendo las directrices PRISMA 2020, seleccionándose 14 artículos originales evaluados mediante el instrumento CRF-QS. Los hallazgos mostraron que la autopsia psicológica posibilita acceder a información retrospectiva de diversas fuentes y reconocer factores de riesgo relacionados con problemas de salud mental, antecedentes de conducta suicida, violencia, conflictos familiares, aislamiento social, dificultades escolares, consumo de sustancias y problemáticas vinculadas al entorno digital. Así, la autopsia psicológica permite ir más allá del hecho consumado para reconstruir las circunstancias que lo precedieron y hacer visibles factores que de otro modo, podrían permanecer inadvertidos.

Palabras clave: adolescente; suicidio; factores de riesgo.

INTRODUCTION

Adolescence is the developmental interval between childhood and adulthood, occurring between ages 10 and 19; a fundamental stage for the individual's comprehensive development.⁽¹⁾ Changes are evident at the physical, sexual, and cognitive levels. In the latter, the development of cognitive functions such as reasoning and decision-making is notable and crucial to adolescent development. However, in this stage of emotional vulnerability, the construction of identity and autonomy can generate confusion and stress.⁽²⁾

Therefore, emotional problems that are not managed correctly can be associated with fatal consequences such as suicide, considered the deliberate act of taking one's own life. It is the third leading cause of death among young people aged 15 to 29 worldwide, with more than 720 000 deaths annually; moreover, for every completed suicide, there are many more attempts.⁽³⁾ In Ecuador, 1 106 suicides were recorded in 2023, the majority of which were committed by young men, placing the country among the ten with the highest rates of adolescent suicide.⁽⁴⁾

Factors for suicide in adolescents are complex and encompass biological, psychological, familial, and social dimensions. These include genetic and neurobiological determinants⁽⁵⁾ as well as mental health conditions, hopelessness, and low self-esteem.^(6,7) Furthermore, suicide attempts are recognized as warning signs of serious risk,⁽⁸⁾ while substance abuse is associated with a significant increase in the likelihood of suicidal behavior.⁽⁹⁾ Similarly, self-harm is a relevant factor that should be considered in the comprehensive assessment of suicide risk in this age group.⁽¹⁰⁾

The family and social environment also plays a crucial role; it has been noted that neglect or lack of affection creates a hostile environment that negatively impacts mental health.⁽¹¹⁾ In the school setting, factors such as



bullying and academic stress increase emotional vulnerability.^(12,13) Likewise, discrimination and isolation raise the risk of self-destructive behaviors,⁽¹⁴⁾ especially in adolescents who face stigmatization due to their sexual orientation or gender identity.⁽¹¹⁾

Given the complexity and interaction of these factors in suicidal behavior, the psychological autopsy is defined as a retrospective technique that allows the reconstruction of the mental, social, familial, occupational, and academic state of a deceased person.⁽¹⁵⁾ This tool provides complementary information in the analysis of death in doubtful cases,⁽¹⁶⁾ and in the context of suicide, it facilitates the identification of risk signs that may have gone unnoticed and that contributed to this outcome.⁽¹⁵⁾

Studies that have used psychological autopsy agree that mental health conditions,⁽¹⁷⁾ the influence of family and school factors,⁽¹⁸⁾ lack of access to psychiatric and psychological treatment, along with family problems, can influence suicidal behavior.^(19,20) Therefore, psychological autopsy has been used to understand the circumstances surrounding suicide and to identify risk factors associated with this fatal outcome.

This research stems from a specific need: the importance of identifying factors that can increase the risk of suicide in adolescents. While scientific literature exists that focuses specifically on suicide cases, the available information on its usefulness in identifying risk factors in adolescents has not yet been integrated and analyzed together. This justifies conducting a systematic review to synthesize the available findings.

For this reason, the study in question aimed to analyze the scientific evidence on the usefulness of psychological autopsy for the identification of suicide risk factors in adolescents.

METHOD

This research is a systematic review of scientific literature, prepared following the guidelines of the 2020 PRISMA statement (Preferred Reporting Items for Systematic Reviews and Meta-Analyses),⁽²¹⁾ to analyze the available scientific evidence on the usefulness of psychological autopsy for identifying suicide risk factors in adolescents. The study used the PICO format, which is most appropriate for structuring the research question and organizing the review components by population, intervention of interest, and expected outcomes, without establishing a comparison group.⁽²²⁾ (Table 1)

The research question posed was: What is the usefulness of psychological autopsy as a tool for identifying suicide risk factors in adolescents?



Table 1.

PICO format

Element	Description
P (Population)	Teenagers who died by suicide
I (Intervention of interest)	Psychological autopsy
C (Comparison)	No comparison is made
O (Result)	Suicide risk factors identified through psychological autopsy

Search strategy

For data collection, a literature search was conducted in the PubMed, SciELO, Redalyc, and ScienceDirect databases to identify studies related to the usefulness of psychological autopsies in identifying suicide risk factors in adolescents. The search was carried out between May and July 2026 and included documents published between 2012 and 2026 in Spanish and English.

DeCS descriptors were used in SciELO and MeSH in PubMed, including "suicide," "adolescent," and "risk factors." The free-text term "psychological autopsy" was also included, as it was not found in the DeCS or MeSH thesauri. The terms were combined using the Boolean operator AND, adapting the search syntax to each database consulted.

Search strategy used according to the database

In PubMed, the search used the MeSH descriptors "Suicide," "Adolescent," and "Risk factors," along with the free term "Psychological autopsy," using the Boolean operator AND.

In SciELO, the following DeCS descriptors were used: "Suicide", "Adolescent", "Risk factors", along with the free term "Psychological autopsy", also using the Boolean operator AND.

In ScienceDirect, the search was performed using English keywords: psychological autopsy, suicide, adolescent, and risk factors with the Boolean operator AND.

In Redalyc, the following Spanish terms were used: psychological autopsy, suicide, adolescent, and risk factors, combined with the Boolean operator AND.



These strategies retrieved 76 records, distributed as follows: PubMed (n=45), SciELO (n=12), ScienceDirect (n=9), and Redalyc (n=10).

Inclusion criteria

- Original articles of an observational, experimental, or field nature.
- Published between 2012 and July 2026.
- Open access and full PDF.
- Written in Spanish or English.
- Studies that included adolescent populations. In studies that included different age groups, only information on adolescents was included.
- Documents where psychological autopsy was the primary method of gathering information.
- Studies that explicitly mention risk factors associated with suicide.

Exclusion criteria

- Publication outside the required age range.

Selection process

After searching the databases described, we removed duplicate documents. We then examined the titles and abstracts of the identified articles to determine their relevance to the objective. We fully reviewed relevant articles and verified them against the pre-established inclusion criteria and keywords. Articles that were not related to the study objective or that met exclusion criteria were discarded. The PRISMA 2020 flowchart (Figure 1) summarizes the procedure for identifying, selecting, assessing eligibility, and including studies.

Data extraction

After selecting articles that met the established criteria and thoroughly reviewing each one, we organized the information into a matrix to facilitate understanding of the results. This matrix recorded the article title, authors, year of publication, the usefulness of the psychological autopsy, and the suicide risk factors identified in each study. We determined the usefulness of the psychological autopsy based on each study's objectives, procedures, and main findings. We extracted the risk factors directly from the authors' reported results. This organization enabled orderly, detailed information collection for subsequent analysis (Table 2).

Methodological quality assessment

The evaluation of the methodological quality of the selected studies was carried out using the Critical Review Form- Quantitative Studies (CRF-QS) instrument, developed by Law et al.⁽²³⁾ It consists of eight

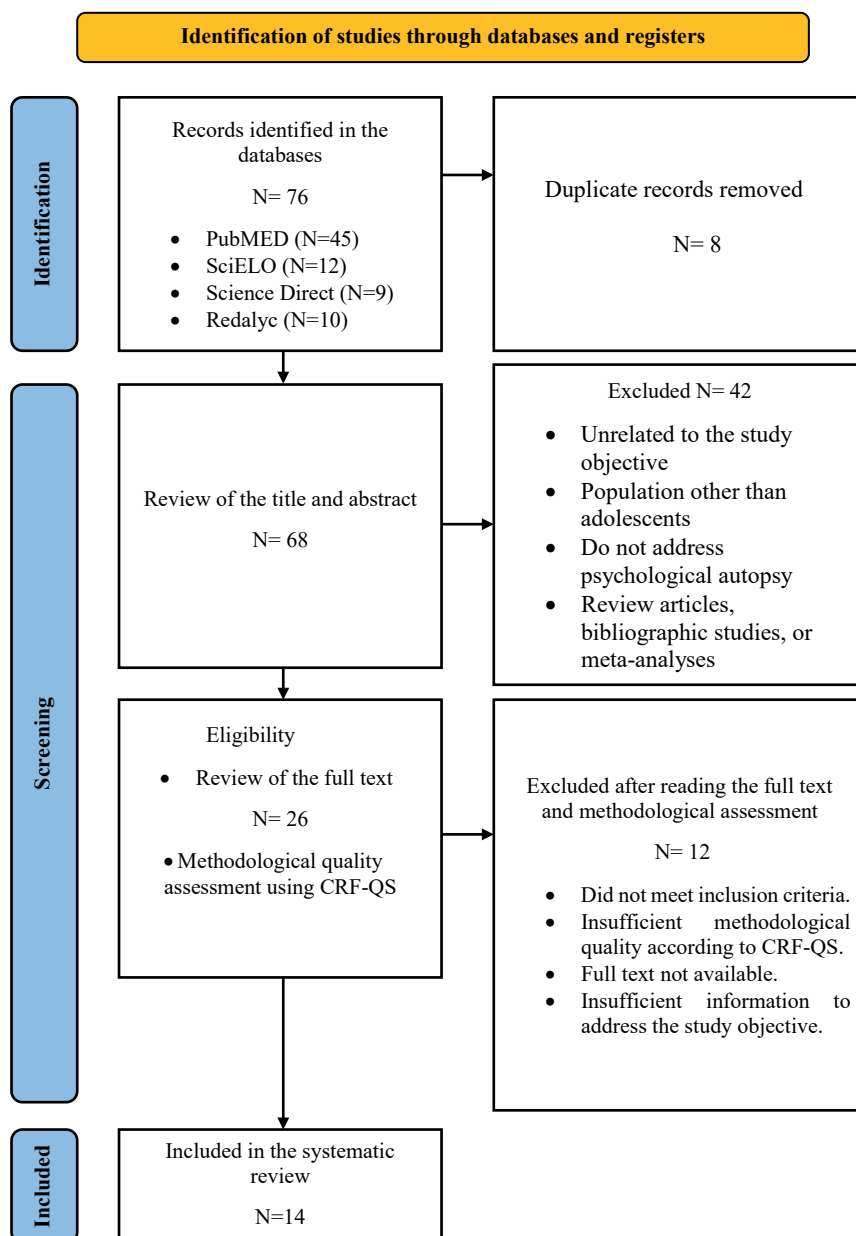


general criteria and nineteen items that allow the assessment of aspects related to the purpose of the study, literature, methodological design, sample, measurement, intervention, results, and conclusion with clinical implications.⁽²⁴⁾

Two reviewers independently selected, extracted, and evaluated the studies, recording the information in a data matrix. The reviewers resolved discrepancies through joint review until they reached consensus. Finally, articles scoring above 16 points were included in the analysis.

Figure 1.

PRISMA 2020 methodology used for the detection, selection, and categorization of studies performed.





RESULTS

Table 1. The following table presents the results of the analysis of the selected articles, organized by study objectives and defined themes.

No	Article title	Authors	Usefulness of the psychological autopsy	Identified suicide risk factors
1	Psychological autopsy study of suicide risk factors in the Colombian Coffee Region.	⁽²⁵⁾	It facilitated the characterization of the personal, family, and contextual circumstances before suicide and the identification of mental health history, through teleconference interviews conducted by two psychiatrists and a psychiatry resident, complemented by hospital medical records.	Major depression, forced labor during adolescence, previous suicide attempts, physical and verbal abuse, behavioral problems, family difficulties, and substance use.
2	A multi-method psychological autopsy study on youth suicides in the Netherlands in 2017: Feasibility, main outcomes, and recommendations.	⁽²⁶⁾	It allowed the integration of information from different sources to reconstruct the circumstances and experiences before suicide in adolescents, through interviews with parents, peers and teachers, complemented by questionnaires answered by the parents.	Traumatic events during childhood such as bullying, cyberbullying, family violence and abuse, mental disorders, history of suicide attempts, academic difficulties and school pressure, conflicts in family and social relationships, limitations in access to mental health care, exposure to suicide-related content on social media, and stress related to sexual orientation.
3	Social media use of adolescents who died by suicide: lessons from a psychological autopsy study.	⁽²⁷⁾	She contributed to understanding the role of social networks in the lives of adolescents who died by suicide and their relationship with experiences of well-being and distress, through semi-structured interviews with parents, peers, teachers and health professionals.	Dependence on and excessive use of social media, social comparison and distorted perceptions about mental health, exposure to self-harm and suicidal content, participation in challenges and impulsive behaviors, poor communication with adults, communities that validate suicidal ideation, and online sexual extortion.



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| 4 | Suicide warning signs that are challenging to recognize: a psychological autopsy study of Korean adolescents. | (28) | It facilitated the identification of the psychological, social, and environmental circumstances preceding the suicide, as well as any unrecognized warning signs. Semi -structured interviews were conducted, supplemented by standardized scales of impulsivity, depression, ADHD, internet addiction, and personality, administered to the parents. | Depression, history of self-harm or suicide attempts, family conflicts such as divorce or separation of parents, as well as economic problems, risk of internet addiction, family history of psychiatric disorders and suicidal behaviors, traumatic experiences, academic pressure and behaviors linked to avoidance or with a tendency towards submission. |
| 5 | Characteristics of Mexican children and adolescents who died by suicide: A study of psychological autopsies. | (29) | He characterized the sociodemographic and family circumstances related to suicidal behavior through personal interviews with at least two first-degree relatives of the deceased, conducted between 30 and 60 days after the suicide. | Alcohol consumption in both adolescents and their parents or caregivers, dysfunctional families, domestic violence, and impulsive behaviors. |
| 6 | Psychological autopsy review on mental health crises and suicide among youth in Pakistan. | (30) | It integrated sociodemographic, clinical, psychosocial, and family information to characterize the circumstances associated with deaths classified as suicide, based on clinical records, forensic reports, and psychological autopsy interviews conducted with multiple sources. | Major depression, psychoactive substance use, hopelessness, suicidal thoughts, irritability, family conflicts, difficulty controlling impulses and aggressive behaviors, low adherence to psychological-psychiatric treatments and lack of mental health services. |
| 7 | Who is at risk of dying Young from suicide and sudden violent death? Common and specific risk factors among children, adolescents, and young adults. | (31) | He examined the psychological, family, and social characteristics of the deceased young people, considering the circumstances associated with suicide in relation to those observed in other groups, through semi-structured psychological autopsy interviews with immediate family members. | History of violence or sexual abuse, borderline personality disorder, previous psychiatric hospitalization, recent stressful events, poor academic performance, adverse childhood experiences, and lack of professional support. |



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| <p>8 Psychological strains and suicide attempt: Results from a psychological autopsy study with Chinese rural young suicides.</p> | <p>(32)</p> | <p>He assessed psychological and environmental conditions before suicide and the associated stress experiences through interviews with informants and the application of the Beck Suicide Intent Scale (SIS).</p> | <p>Psychological stress, mental disorders, social isolation, difficulties in coping skills, unfulfilled aspirations, economic or social deprivation, value conflicts, low educational level, stressful situations, physical illnesses, and limitations of personal resources to cope with adverse situations.</p> |
| <p>9 Additional value of peer informants in psychological autopsy studies of youth suicides.</p> | <p>(33)</p> | <p>The information provided by the parents regarding the psychological, social, school, and family circumstances before the suicide was supplemented through semi-structured interviews with peers, teachers, and health professionals connected to the young people.</p> | <p>Substance use, academic pressure, family conflicts, self-harm, bullying, influence of social networks and suicidal contagion, problems in peer relationships and difficulties in affective relationships, perfectionism and communication of suicidal ideas.</p> |
| <p>10 Childhood suicide in Tunisia: Forensic and Psychological Aspects.</p> | <p>(34)</p> | <p>He integrated family, medical, psychological, and forensic information to characterize the circumstances and background associated with suicidal behavior in adolescents, based on autopsy reports and medical records.</p> | <p>Dysfunctional families, domestic violence, psychiatric disorders, suicide attempts, school difficulties, substance abuse, personal problems, grief, breakups, and unplanned pregnancies.</p> |
| <p>11 Differences between children and adolescents who commit suicide and their peers: A psychological autopsy of suicide victims compared to accident victims and a community sample.</p> | <p>(35)</p> | <p>He analyzed the psychological characteristics and stressful circumstances associated with suicide through retrospective interviews with parents and integration of hospital records and police reports.</p> | <p>Subthreshold depression, pre-suicidal interest, experiences of emotional loss, difficulty communicating problems to parents, behavioral problems, bullying, emotional vulnerability, impulsivity, history of suicide attempts, and less family support.</p> |



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| 12 Suicide or accident? A psychological autopsy study of suicide in youths under the age of 16 compared to deaths labeled as accidents. | (36) | It allowed for a comparison of the prior circumstances between the cases of suicide and accident and the evaluation of possible classification errors through interviews with family members, conducted by specialists in psychiatry and child psychiatry, review of medical and police records, and application of standardized questionnaires. | Interpersonal conflicts, prior interest in suicide, subthreshold depression, emotional vulnerability, behavioral changes, significant losses, mental health problems, impulsivity, and exposure to suicides in the environment. |
| 13 Psychosocial factors in adolescent suicides : A psychological autopsy - based study. | (37) | It broadened the understanding of the psychosocial conditions and life events before suicide, based on interviews with family members, friends, close acquaintances, and police personnel, supplemented with medical and forensic information. | Depressive symptoms, high family expectations, social isolation, previous suicide attempts, anger, aggressiveness and impulsivity, loss of significant people, previous communication of suicidal ideation, academic pressure and family history before suicide. |
| 14 Familial firearm culture among the families of youth who died by firearm suicide in Maryland: a qualitative analysis of psychological autopsy interviews. | (38) | He examined the influence of family context and the availability of firearms on adolescent suicide through semi-structured interviews with family members and friends, conducted by a psychiatrist and a psychiatry resident, one year after the death. | Mental disorders, previous suicidal ideation and attempts, access and availability of firearms in the home, normalization of their use in the family environment, lack of information on restricting access to lethal means, inadequate storage and low perception of danger. |



DISCUSSION

The reviewed evidence suggests that psychological autopsy is a useful tool for identifying risk factors and understanding the circumstances surrounding suicide in adolescents. One of its main contributions is integrating information from family members, peers, teachers, and healthcare professionals, along with clinical, medical, police, and forensic records.^(26,30-33,36) This diversity of sources expands the information available about adolescent's life, since no single person necessarily knows all their experiences. Peers provided complementary information about interpersonal relationships, school experiences, and social media use.⁽³³⁾ Furthermore, the technique allowed for the exploration of warning signs that had not been recognized before death⁽²⁸⁾ and for comparing the circumstances of suicide cases with those of deaths classified as accidents.⁽³⁶⁾ In this sense, the usefulness of psychological autopsy is related to its ability to gather information from different sources and approach aspects of adolescent's life that may not have been previously identified.

Among the factors identified, those related to mental health and suicidal behavior were the most recurrent. Depression and other mental disorders were present in several studies, as were histories of suicide attempts, self-harm, and suicidal ideation.^(25,26,28,30,31,33-38) The repeated presence of these factors shows that in different cases there were manifestations of psychological distress before death. However, their identification should not be interpreted in isolation, since they were accompanied by other circumstances present in the adolescents' lives. Thus, the psychological autopsy allows us to place mental health difficulties and suicidal behavior within the prior history of each case, avoiding reducing its understanding solely to the presence of a disorder or a history of suicidal behavior.⁽²⁵⁻³⁸⁾

The family environment was another recurring dimension in the reviewed studies. Family conflicts and difficulties were identified^(25,26,30,33,34,37) as well as domestic violence, physical and verbal abuse, dysfunctional families, parental separation, and difficulties communicating problems to parents.^(25,26,28,29,35) The coexistence of these circumstances with a history of mental health issues and suicidal behavior suggests that, in some cases, the adolescent's experiences were also linked to their family environment. Difficulties in communicating problems are particularly relevant because certain experiences may not have been known to close adults. In this sense, information obtained through post-death interviews can complement what the family had not previously identified.

Reconstructed histories also included school, social, and emotional circumstances. Several studies described academic pressure, study-related expectations, and school difficulties,^(26, 28, 33, 34, 37) while others reported bullying and cyberbullying.^(26, 27, 33, 35) Added to this were social isolation, conflicts with friends, difficulties in emotional relationships, and the loss of significant people.^(32-35, 37) These findings broaden the understanding of the factors identified through psychological autopsy, showing that the circumstances preceding suicide were also related to everyday spaces of adolescent life, such as school, friendships, and emotional relationships.



Other factors were identified in fewer studies. Alcohol and other substance use were described in several studies,^(25, 26, 29-31, 33) while impulsivity appeared in several of them.^(27, 29, 32, 35-37) Irritability, aggression, and anger were noted more frequently.^(30, 37) The lower frequency of these elements requires cautious interpretation in relation to each case's other circumstances. Specific conditions related to the digital environment were also identified, such as excessive use of social media, social comparison, exposure to suicidal or self-harming content, cyberbullying, suicidal contagion, and sextortion.⁽²⁷⁾ Another study examined the availability of firearms in the home, their normalization within the family, and their unsafe storage.⁽³⁸⁾ These findings show that psychological autopsy can address specific dimensions according to the characteristics and circumstances of each case.

The diversity of identified factors is also evident in those elements described only in specific studies. These include forced labor during adolescence⁽²⁵⁾ sexual abuse,⁽³¹⁾ grief, relationship breakups, and unplanned pregnancy,⁽³⁴⁾ as well as exposure to suicides in the family or community.⁽³⁶⁾ Difficulties coping with problems, unfulfilled aspirations, value conflicts, economic or social deprivation, low educational attainment, and physical illnesses were also identified,⁽³²⁾ in addition to alcohol consumption by parents or caregivers.⁽²⁹⁾ Because these elements were reported on a case-by-case basis, it would not be appropriate to consider them general characteristics of adolescents who died by suicide. Rather, their presence demonstrates that the circumstances identified through psychological autopsy can vary among cases and encompass different dimensions of the adolescent's life.

The participation of different informants is therefore key to assessing the technique's usefulness. Peers provided information that complemented what parents provided, especially regarding psychological, academic, and social aspects.⁽³³⁾ Similarly, the combination of interviews with clinical, police, and forensic records allowed for the collection of information from different sources.^(26, 34, 36) Since this is a reconstruction after death, the information obtained depends on the memories, perceptions, and knowledge of those involved. Therefore, its interpretation must consider the scope of the information available in each case.

Taken together, the reviewed studies show that the usefulness of the psychological autopsy relates to its ability to integrate different sources of information and recognize factors across various dimensions of adolescents' lives. Although some antecedents recurred, the diversity of circumstances identified does not allow for establishing a universal hierarchy among the factors or causal relationships between them. Rather, the studies show different combinations of individual, family, school, and social circumstances in the histories analyzed.⁽²⁵⁻³⁸⁾ This heterogeneity should be considered when interpreting the evidence and when assessing the possibility of extrapolating its results to other populations.

In the Ecuadorian context, these findings are particularly relevant considering that 1,106 suicides were recorded in the country in 2023.⁽⁴⁾ The reviewed evidence shows that psychological autopsy can provide information on mental health history and suicidal behavior, family relationships, school and social experiences, as well as



other circumstances present before death.⁽²⁵⁻³⁸⁾ However, the included studies were conducted in different contexts, so their results cannot be directly extrapolated to the Ecuadorian adolescent population. This difference should be considered when assessing the technique's usefulness in the country, particularly because the situations identified may vary depending on the context in which adolescents live.

A limitation of this review was the limited availability of studies focused exclusively on adolescent populations. Therefore, it was necessary to consider research that included different age groups and analyze only the information corresponding to adolescents. Furthermore, the heterogeneity of the studies, both in terms of the context in which they were conducted and the circumstances analyzed, limits the generalizability of the findings to other populations. Finally, reliance on informant-provided information and available records may be subject to recall and information biases.^(26,33-36)

CONCLUSIONS

The psychological autopsy proved useful in identifying risk factors and reconstructing the events preceding the adolescent suicide by integrating information provided by family members, close acquaintances, and clinical or forensic records. Its application allowed for a deeper understanding of the experiences and circumstances present before death, fostering a broader comprehension of the case.

The reviewed studies identified mental health problems, a history of self-harm and suicide attempts, adverse experiences, and substance use, along with difficulties in family, school, and social environments, as the main risk factors. Taking together, these findings show that adolescent suicide cannot be understood as a single factor, but rather as a product of the various conditions present in an adolescent's life. From this perspective, the identified factors highlight the need to consider the different dimensions involved in the adolescent context holistically.

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Contribution statement:

Leonor Jacqueline Moreano Jara and Erika Gabriela Márquez Flores prepared the article and participated jointly in all stages of the manuscript.



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