Exploring support strategies and training needs for teachers in navigating illness, bereavement, and death-related challenges in the classroom: a scoping review supporting teachers in classroom grief and loss

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This scoping review aimed to examine support strategies teachers can use to address illness, grief, and death in the classroom. A total of 24 scientific articles were analyzed from various databases: Medline (PubMed), SCOPUS, Web of Science, Education Resources Information Center (ERIC), Scielo, Dialnet Plus, ScienceDirect Elsevier, OECD Library, and PsycInfo. These articles were subjected to a rigorous quality analysis process. Through a narrative thematic analysis, six categories emerged: (1) the transformative school as an instrument of change, (2) normalizing illness, bereavement, and death, (3) students with limiting illnesses and their classmates, (4) difficulties and needs, (5) rethinking classroom actions and intervention proposals, and (6) benefits of technology and training needs. The findings of the review encompass a range of proposals and strategies for providing support in the classroom, with a particular emphasis on the use of new technologies, artificial intelligence, and social robotics. These tools are seen as effective means to facilitate remote presence, remote participation, and academic progress for students who are unable to physically attend school. The review also provides practical recommendations to empower teachers with effective strategies for supporting students dealing with illness and bereavement.

KEYWORDS

empty chair, grief, death pedagogy, school, chronic illness

1 Introduction

Epidemiological studies suggest that many pediatric patients have chronic diseases (Cortes et al., 2020), representing approximately 25% of the total population aged 0–19 years (Compas et al., 2012). Of these chronic diseases, only 10 out of 10,000 cases (0.1%) are life-limiting, complex, or life-threatening for the minor (Martino et al., 2014), and 1 in 10,000 (0.01%) of these cases end up in death due to foreseeable causes, such as life-threatening or limiting

diseases, described within the International Classification of Diseases, 11th Revision (ICD) code (World Health Organization, 2019). Nowadays, medical service delivery has evolved, reducing hospital stays and increasing outpatient care, resulting in more comprehensive transitions of pediatric patients from hospitals to regular facilities (Shaw and McCabe, 2008). According to Balk (2014), finding professionals and experts in educational contexts who know how to respond to these situations is challenging. Garran (2013) argues that, at some point in their professional career, most teachers will face the need to guide the educational community through grief, especially the classmates of a deceased student. Several authors express the need to train teachers in the pedagogy of death to provide them with tools to manage the situation and accompany students, minimizing the consequences of a traumatic experience (Hart and Garza, 2013; Johnson, 2014; Galende, 2015; De la Herrán et al., 2021; Berryman, 2022). However, facing the inevitability of death and its didactics remains a neglected area in educational systems (Galende, 2015), which is still not fully addressed from a pedagogical point of view (Magaña and Ariza, 2018).

There are limitations in the existing scientific literature regarding the assessment of teachers' responses to trauma-exposed students (Case et al., 2020; Barrett and Berger, 2021), and inclusion policies do not always reflect the reality of students' needs (Geddes, 2010). There is concern that the school system is not able to provide an adequate response to the grieving student's classmates and the teachers themselves, as there is a lack of understanding of the individuality of bereavement (Balk, 2011), when, in fact, it can be part of the educational content (De la Herrán et al., 2000). From an existentialist and philosophical point of view, the approach to bereavement should be practical, which means accepting and embracing it as part of life (Leming and Dickinson, 2020). It has long been clear that teachers' attitudes toward grief directly influence their ability to help manage grief in students (Cullinan, 1990).

In the case of a student with a limiting or complex illness, categorized as palliative, and who attends regularly to school, it is possible to work on grief and normalize the upcoming death in advance, preparing classmates and the ill student for acceptance, as well as offering a farewell opportunity (De La Herrán and Cortina, 2008). Anticipatory grief allows the reality of loss to gradually be known and prepared for if handled and guided appropriately (Guinot et al., 2019). Normalizing bereavement as an intrinsic part of life will equip young students with tools to understand and respond to future losses (Matthews, 2019) and facilitate the creation of internal dialogues due to the acceptance and acknowledgment of one's own emotions (Martínez, 2019).

As mentioned, it is important to teach students early in their education that death is part of life, accompanying this information with adequate emotional education to facilitate their understanding (Campillo and Ternero, 2020). On the other hand, inadequate transmission can generate a traumatic process of assimilation regarding the irreversibility of the loss, which is why adequate teachers' strategies for accompaniment are essential when there is or will be an empty chair in the classroom (Izaguirre, 2021). According to the author, death should be treated as part of life and not isolated as a moment of intervention in a crisis. Unfortunately, in the educational context, training in the pedagogy of death is not a priority (Pantaleno, 2018). As a society, we have ostracized everything related to death (Campillo and Ternero, 2020), which is why it is essential to

normalize it and integrate it as another element in the educational context (Gorosabel-Odriozola and León-Mejía, 2016).

Teachers are likely to face situations of illness, bereavement, and death of their students, given the prevalence of chronic and limiting diseases among pediatric patients. This raises the question: What effective strategies can teachers employ within the school context to support children during times of illness, grief, or loss? Therefore, this exploratory review aims to provide an overview of the support strategies utilized by teachers in the school setting to facilitate the inclusion of students with a serious, complex, or long-term illnesses. Additionally, it explores how teachers could prepare both the affected student and the rest of the class for the farewell process and the grieving associated with the loss of a classmate.

2 Materials and methods

The current scoping review aimed to provide an analysis of an understudied topic. Its exploratory nature allowed for the synthesis of existing literature, as well as identifying key concepts by reviewing a wide range of typologies of study designs (O'Brien et al., 2016). The present scoping review followed the five-stage sequential procedure proposed by Arksey and O'Malley (2005), and the collected information is presented in the form of a qualitative thematic analysis following the guidelines of Braun and Clarke (2006). The review protocol was made publicly accessible on the Open Science Framework[1] and the method adhered to the PRISMA-ScR (PRISMA Extension for Scoping Reviews) guidelines to ensure a systematic and rigorous approach in planning, conducting, and presenting the review. Given that this method allows for different study types as sources of information, to assess the quality and potential bias of the selected articles, various quality assessment techniques or risk bias tools recommended by The Joanna Briggs Institute (2022) were employed. Given the heterogeneity of the included articles, a systematic review or a meta-analysis was deemed inappropriate for this study.

2.1 Data search

Stage 1 of the five sequential stages (Arksey and O'Malley, 2005) consisted of identifying the research question presented in the Introduction section. In stage 2, the focus was on identifying relevant studies by searching nine databases: Medline (RRID:SCR_002185), Scopus (RRID:SCR_022559), Web of Science (RRID:SCR_022706), Education Resources Information Center ERIC (RRID:SCR_007644), Scielo, Dialnet Plus, ScienceDirect Elsevier (RRID:SCR_013811), OECD Library, and PsycINFO (RRID:SCR_014799). Following the JBI Manual for Evidence Synthesis, an initial search yielded a small number of documents. As a result, the search string was expanded and adjusted. The key search terms employed encompassed a variety of terms from the thesauri of the databases, combined with the free choice of terms method (Stenberg et al., 2019). The search equation consisted of thematic groups of words combined with the term "OR" within groups and "AND" between the following groups:

- Diagnosis: palliative, long-term illness, long term illness, terminal illness, chronic illness, LTI.
- Education: school, school-based, classroom, educative inclusion, classmate.
- Death pedagogy: goodbye, empty chair, death, demise, decease, grief, grieving, mourning, bereavement, empty seat, loss.
- Intervention: psychotherapeutic, assessment, school based mental health, strategy, strategies, coping, accompaniment, accompanying, school support, presence, telepresence, integration, avatar, educational robot, educative robot, social robot, information and communication technology (ICT).

The search was conducted on the 8th of December 2022 and yielded a total of 1,435 articles. Four additional records identified through manual document search were also included. Once the identification of relevant studies was completed, 2 duplicates were found, bringing the total number of articles to 1,433.

2.2 Inclusion and exclusion criteria

In the third stage of article selection, we implemented comprehensive eligibility criteria to ensure a focused yet thorough review of the literature. While no specific time or language restrictions were imposed to accommodate the broad scope of potentially relevant studies given the specialized nature of the topic, the search was meticulously designed to capture the most pertinent literature. The inclusion criteria were as follows: The documents had to be peer-reviewed journal articles reporting on interventions or support strategies related to illness, bereavement, and death within educational settings. We considered all types of empirical studies, embracing a wide array of study designs to encompass the diverse methodologies employed in this research area. The population of interest was explicitly defined to include studies conducted within preschool, primary, and secondary educational contexts, deliberately excluding research focused on university and higher education levels to maintain the relevance to the targeted age groups. To ensure a precise and efficient search, the search equation was crafted to identify articles where the relevant terms appeared in the title, keywords, or abstract, thereby enhancing the likelihood of retrieving articles directly aligned with our research objectives. In evaluating the relevance and quality of the identified studies, we adopted a dual-phase screening process. Initially, titles and abstracts were reviewed to assess their relevance to our research questions, followed by a full-text review for those that passed the preliminary screening. Quality assessment was conducted using established checklists tailored to the study designs (detailed in the Results section). This rigorous process ensured that only studies meeting our predefined quality and relevance criteria were included in the final review."

The initial pool of 1,433 articles underwent a screening process conducted independently by two researchers. Out of these, 49 articles reached the full-text assessment stage. In cases where consensus could not be reached between the two researchers, the opinion of a third researcher was sought. The observed proportion of agreement between the two researchers was OA = 0.94, with a probability of random agreement for each category of $p = 0.5$ resulting in a Cohen's Kappa of $K = 0.87$. Finally, 24 articles met the inclusion criteria and proceeded to the final analysis (Figure 1), the PRISMA flow diagram,

illustrates the phases of the selection process. Although the PRISMA diagram is typically used for systematic reviews, it was considered appropriate for this scoping review to document the study selection and exclusion process.

2.3 Data extracting and reporting

In stage 4 of our study, during the charting of data, we employed a meticulous approach to narrative thematic analysis to synthesize the extracted information. An information form, inspired by the methodology proposed by Pham et al. (2014), was utilized for the initial data extraction, focusing on the type of study, the year and journal of publication, and the specific accompanying strategies used in educational settings, as highlighted in the work of Yared et al. (2020). The thematic analysis commenced with an in-depth coding process, where two independent researchers systematically reviewed the extracted data to identify initial codes, which were reflective of the core concepts and themes emerging from the data. This coding process was facilitated by the use of qualitative analysis software (NVivo, Version 12), which allowed for the efficient organization, retrieval, and analysis of the data segments. Following the initial coding, we engaged in a collaborative categorization process, where codes with similar thematic content were grouped to form broader categories. This iterative process involved constant comparison and refinement of categories to ensure they accurately represented the underlying themes in the data. The identification of overarching themes was the culmination of this analytical process, where we synthesized the categories into broader themes that captured the essence of the strategies used in the classroom for addressing illness, bereavement, and death. This thematic framework provided a structured narrative to present our research outcomes, as suggested by Campbell et al. (2018). To ensure the validity and reliability of our findings, we employed several strategies to handle variability and discrepancies in the data. Discrepancies between researchers during the coding and categorization phases were resolved through in-depth discussions, allowing for a consensus-based approach to theme identification. Additionally, we engaged in data triangulation by comparing findings across different study types, populations, and contexts to validate the emerging themes and ensure a comprehensive understanding of the data.

2.4 Presentation of the results

Collating, summarizing, and reporting the results are contemplated in the 5th and final stage (Arksey and O'Malley, 2005). Based on the content extracted from the previous phase, the most relevant and frequent categories and elements were identified. An initial reading of the selected articles was conducted to identify patterns, which were cross-checked across the documents. This process allowed for the emergence of an initial outline of information, which is presented in the following section. To analyze the data and provide a cohesive narrative, a thematic analysis approach following the method of Clarke and Braun (2017) was employed. This method is widely used in social research (Sparkes and Devís, 2007) and provides a systematic way to code and categorize the themes identified.

FIGURE 1
PRISMA flowchart depicting the search procedure framework.
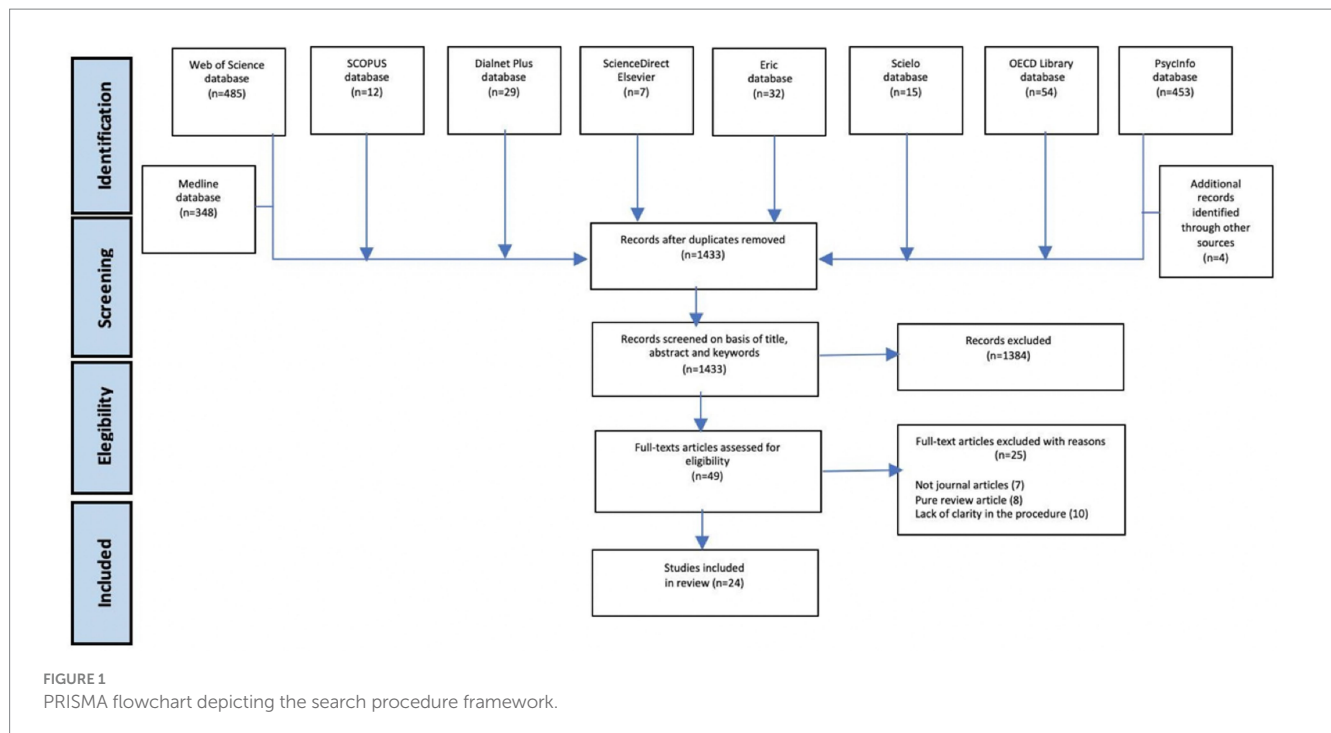
3 Results

A total of 24 documents were included, and key components related to bereavement, illness, and death in the school context were found, which are mentioned in Table 1. It is important to note that the table is not intended as an exhaustive exploration of the themes discussed. Rather, it serves as a visual aid and offers a preliminary organization of the content based on initial assessments. The categorization in the table may not align precisely with the detailed analysis presented in subsequent sections, as further thematic analysis and synthesis will provide a more comprehensive understanding of the matter.

In the forthcoming section, a comprehensive discussion and thematic analysis of the included studies will be presented. This analysis will provide a deeper exploration of the various components, shedding light on the nuanced perspectives and findings emerging from the research.

3.1 Study characteristics

The 24 publications included in the review were characterized by a great heterogeneity of study population (teachers, classmates, pediatric patients), context (e.g., illness or bereavement in the classroom, school protocols, telepresence), and theoretical-practical foundations from which the research was carried out (qualitative and Mixed Methods Research, MMR). Table 2 details the study design, data collection instruments, geographical location, and participants. Most of the reviewed studies focused on students ($n = 10$) and teachers ($n = 9$). We also considered parents of pediatric patients ($n = 5$) and other professionals involved as informants, such as medical staff, technology developers, and school principals ($n = 4$).

In parallel with the information extraction process, an assessment of the quality of the articles was carried out based on the study type

using different bias control tools. Qualitative articles were subjected to the Critical Appraisal tools for use in JBI Systematic Reviews (Lockwood et al., 2015), and papers using mixed methods as a research methodology were assessed using the Mixed Methods Appraisal Tool (MMAT) described in Hong et al. (2018), all reviewed by two independent researchers and presented in Table 2. For all cases, the product between the number of negative responses and the total number of responses is performed, taking the following risk of bias intervals: low risk (0.00–0.40), some concerns (0.41–0.70), and high risk (0.71–1.00).

3.2 Narrative thematic analysis

The results obtained in the analyzed articles were triangulated to detect emerging themes and patterns through thematic analysis to build understanding and give meaning to the collected material. In line with the recommendations of Alexander (2020), several potentially informative groupings were considered due to the diversity of articles derived from the research methodology. The six resulting themes are listed below:

3.2.1 The transformative school as an instrument of change

Illness, bereavement, and death are complex and difficult issues that affect individuals, families, and communities in different ways. In this context, schools play an important role in the unitary response to bereavement, as they can provide support and resources to those in need or crisis. It is true that, from within the education system, teachers face different challenges when trying to accompany students who are in situations of uncertainty such as illness or bereavement, and often teachers struggle to understand what the student is going through (A'Bear, 2014). However, school is a useful and versatile context to provide students with a sense of normality and a distraction

TABLE 1 Outline of bereavement, illness, and death components in the school context provided in included studies.

Document	The need to normalise bereavement and death in the school context	Transformative schooling as an instrument of change	Lack of training and information in schools on illness, bereavement and/or death	Lack of training and information in schools on digital and technological support tools.	The need to rethink classroom interventions	Difficulties for students with serious, long-term or limiting illnesses	Needs of students with a serious, long-term or life-limiting illness and/or their peers	Using technology as a tool for change	Proposals and intervention strategies	Need for political action
A'Bear (2014)		✓			✓	✓		✓		
Akard et al. (2015)				✓						
Beccaro et al. (2014)	✓	✓			✓					
Blake et al. (2020)	✓	✓	✓						✓	
Cortina and de la Herrán (2008)	✓	✓			✓				✓	
Cortina et al. (2009)	✓	✓			✓					
De Hoyos (2015)	✓									
Gorosabel-Odriozola and León-Mejía (2016)	✓	✓	✓	✓	✓				✓	
Guillaumet et al. (2018)	✓								✓	
Jones and Wilkie (2010)		✓				✓		✓		
Kennedy et al. (2020)	✓	✓	✓		✓					
Lawhon (2004)	✓	✓			✓					
Lowton and Higginson (2003)	✓		✓	✓	✓	✓	✓	✓		

(Continued)

TABLE 1 (Continued)

Document	The need to normalise bereavement and death in the school context	Transformative schooling as an instrument of change	Lack of training and information in schools on illness, bereavement and/or death	Lack of training and information in schools on digital and technological support tools.	The need to rethink classroom interventions	Difficulties for students with serious, long-term or limiting illnesses	Needs of students with a serious, long-term or life-limiting illness and/or their peers	Using technology as a tool for change	Proposals and intervention strategies	Need for political action
Máarell-Olsson et al. (2021)				✓	✓	✓	✓	✓		
Martins et al. (2018)	✓	✓	✓		✓				✓	✓
Newhart and Olson (2017)				✓		✓		✓		
Paul et al. (2019)	✓	✓			✓		✓			
Powell et al. (2021)				✓	✓	✓	✓	✓		
Ramos et al. (2018)	✓		✓		✓				✓	
Ramos et al. (2018)	✓	✓			✓					
Selfa et al. (2015)	✓				✓					
Tresman et al. (2016)	✓	✓			✓				✓	
Wadley et al. (2014)		✓			✓			✓		
Zhu and Van Winkel (2015)		✓				✓	✓	✓		

TABLE 2 Characteristics of the research included in the analysis.

N	Authors	Title	Country	Data collecting tool	Participants	Study design	Risk of bias
1	A'Bear (2014)	Supporting the learning of children with chronic illness.	Canada	Focus group Interview	Parents, chronic ill students and teachers	Qualitative	🟩
2	Akard et al. (2015)	Digital storytelling: An innovative legacy-making intervention for children with cancer. *Pediatric*	USA	Survey	28 paediatric patients	Qualitative	🟧
3	Beccaro et al. (2014)	The Ligurian high-school educational project on palliative care: development and piloting of a school-based intervention on bereavement and severe illness.	Italy	Survey	159 students	Qualitative	🟩
4	Blake et al. (2020)	Using a storytelling intervention in schools to explore death, dying, and loss.	UK	Free text	24 students	Qualitative	🟧
5	Cortina and de la Herrán (2008)	Death education as a formative field: beyond bereavement.	Spain	Literature		Qualitative	🟩
6	Cortina et al. (2009)	Proposals for anticipating bereavement.	Spain	Literature		Qualitative	🟧
7	De Hoyos (2015)	Do adults understand children's grief?	Spain	Literature		Qualitative	🟥
8	Gorosabel-Odriozola and León-Mejía (2016)	Death in early childhood education: some basic lines of action for schools.	Spain	Literature		Qualitative	🟩
9	Guillaumet et al. (2018)	La narrativa como estrategia didáctica para una aproximación al proceso de la muerte.	Spain	Free text	26 students	Qualitative	🟧
10	Jones and Wilkie (2010)	A teacher's perspective of interacting with long-term absent students through digital communications technologies.	Australia	Interview	Teachers	Qualitative	🟩
11	Kennedy et al. (2020)	Death, dying and bereavement: Considering compassion and empowerment.	Australia	Interview	23 students, parents, teachers and community directors of primary schools	Qualitative	🟧
12	Lawhon (2004)	Teachers and Schools Can Aid Grieving Students.	USA	Literature		Qualitative	🟧

(Continued)

TABLE 2 (Continued)

N	Authors	Title	Country	Data collecting tool	Participants	Study design	Risk of bias
13	Lowton and Higginson (2003)	Managing bereavement in the classroom: A conspiracy of silence?	UK	Interview	13 school staff members	Qualitative	
14	Máarell-Olsson et al. (2021)	Opportunities and challenges of using socially intelligent agents: increasing interaction and school participation for children suffering from a long-term illness.	Sweden	Interview	3 professionals involved in the care of paediatric patients	Qualitative	
15	Martins et al. (2018)	Towards a public health approach for palliative care: an action-research study focused on engaging a local community and educating teenagers.	Portugal	Interview Survey Free text Reflective diaries	67 Students	Mixed methods	
16	Newhart and Olson (2017)	My student is a robot: How schools manage telepresence experiences for students.	USA	Interview	26 teachers	Qualitative	
17	Paul et al. (2019)	Integrating palliative care into the community: the role of hospices and schools.	UK	Focus group Interview	72 parents, ill children and others	Qualitative	
18	Powell et al. (2021)	Keeping connected with school: Implementing telepresence robots to improve the wellbeing of adolescent cancer patients.	Australia	Interview	47 paediatric patients, parents and others	Qualitative	
19	Ramos et al. (2018)	Practical and Functional Principles in Situations of Death and Mourning for Professionals of Education .	Spain	Literature Review-action		Qualitative	
20	Ramos et al. (2018)	Dealing with death and bereavement in the classroom.	Spain	Literature		Qualitative	
21	Selfa et al. (2015)	Reading about death in the Classroom Library: a practical experience of reading in an Early Childhood Education classroom.	Spain	Free text Illustrated drawings	Students	Qualitative	

(Continued)

TABLE 2 (Continued)

N	Authors	Title	Country	Data collecting tool	Participants	Study design	Risk of bias
22	Tresman et al. (2016)	A school passport as part of a protocol to assist educational reintegration after medulloblastoma treatment in childhood.	UK	Survey Interview	9 paediatric patients, 12 teachers and 6 others	Mixed methods	
23	Wadley et al. (2014)	Exploring ambient technology for connecting hospitalised children with school and home.	Australia	Focus group Workshop	Parents, teachers and other	Qualitative	
24	Zhu and Van Winkel (2015)	Using an ICT tool as a solution for the educational and social needs of long-term sick adolescents.	Belgium	Interview	Students	Mixed methods	

Low risk (green), some concerns (orange), and high risk (red).

from their illness or life situation, while providing long-term goals and a strong social connection (Ramos et al., 2018). Blake et al. (2020) highlight the practical implications of considering educational settings as anchor institutions to support a public health approach to end-of-life care, as schools are valuable assets in supporting children and families affected by death, illness, and bereavement.

In this regard, Wadley et al. (2014) described the impact that prolonged absence from school can have on children, such as isolation from friends and disruption of learning. Although some pediatric hospitals offer educational programs, there is still a risk that being 'out of sight and out of mind' can disrupt friendships and cause anxiety about returning to school. Therefore, schools should provide training and tools for teachers to train them in early bereavement support and accompaniment strategies, preparing for the short and long-term needs of students and teachers (Kennedy et al., 2020).

Schools should take advantage of teaching moments to talk to children and help them develop resilient attitudes (Gorosabel-Odriozola and León-Mejía, 2016), regardless of their life situation. Furthermore, it is recommended for all pediatric cancer centers to implement a school reintegration program (Tresman et al., 2016) and carry out social actions and educational programs to raise awareness of palliative care not only among the student population (Martins et al., 2018). Schools are pivotal in the community's approach to illness and bereavement, necessitating proper resources and training to offer essential support and solace to students (Lawhon, 2004; Cortina and De la Herrán, 2008; Cortina et al., 2009; Beccaro et al., 2014; Ramos et al., 2016; Paul et al., 2019).

It is imperative to raise public awareness of palliative care and to consider educational institutions as references in the public health approach to end-of-life care. According to Paul et al. (2019), leadership in death and bereavement education is important in influencing policies and practices. One should challenge death-denying policies and seek to develop a culture of compassion towards end-of-life and bereavement. Although school staff may have the skills to support and educate children about these topics, this can only happen on an *ad hoc*

basis. Therefore, the development of a policy and curriculum program that specifically addresses end-of-life care and bereavement in schools is essential.

3.2.2 The need to normalize illness, bereavement, and death

Death has been a recurring theme in literature since ancient times, yet it remains a taboo subject in society. Research suggests that introducing discussions about death in the educational curriculum can begin as early as the age of three (Selfa et al., 2015). The grieving process in children is influenced by various factors, including their stage of development, temperament, social environment, and the attitude of the adults around them (De Hoyos, 2015). Fostering a positive view on death necessitates a synergistic partnership between palliative care and health promotion (Kennedy et al., 2020). However, palliative care services have often neglected the social aspects of death and bereavement (Paul et al., 2019).

In order to develop supportive communities that embrace death and bereavement, new approaches are being explored. Unfortunately, practices involving children and schools in end-of-life care scenarios are still underdeveloped and lacking documentation. Palliative care education targeted at adolescents and high school students has been shown to positively influence their attitudes toward illness, death, and loss (Martins et al., 2018).

According to Lawhon (2004), it is necessary to implement an educational program that addresses death, bereavement, and its impact on human development throughout the stages of growth. Guillaumet et al. (2018) argue that reflection on one's own experience of death improves the understanding and sensitive accompaniment of people in the grieving process. Pedagogical storytelling is a strategy that nurtures education to understand complex situations. According to Lowton and Higginson (2003), the school can be considered a "second safe family" and has a significant impact on young people's learning and education about death, so the involvement of teachers in explaining death is recommended.

As mentioned above, death is a taboo subject in many societies. It is often influenced by adult fear and dread, but children could benefit from an environment where death is talked about naturally. Ramos et al. (2018) argue that death should be a cross-cutting theme in education and should be included in the school curriculum to teach values and normalize it as a part of life. Furthermore, according to Tresman et al. (2016), a multidisciplinary team and central coordination are essential for the successful reintegration of children affected by death; nevertheless, due to limited resources, it is important to identify a comprehensive long-term follow-up mechanism. It is necessary to include death and bereavement education in school, as the loss of a loved one is a reality that requires guidance and accompaniment (Gorosabel-Odriozola and León-Mejía, 2016; Ramos et al., 2016). Although there is a discussion about children's ability to understand death, they certainly perceive it through the feelings and emotions of the people around them. Education about death can help develop emotional competencies and prevent future psychological problems. This should be included from an early age (Early Childhood Education) and should be adapted to the children's capacity to understand depending on their stage of development. Correct pedagogy about death is a key element in the prevention and management of loss and bereavement (Cortina et al., 2009).

Two studies specifically exemplify the importance of addressing death in education. In the first one (Beccaro et al., 2014), eight overt content categories and three role-related categories were identified in responses to the question on "coping strategies for coping with loss." The intervention improved students' attitudes toward coping strategies, and students more frequently assumed the role of a helper. The final comments were positive, although some participants reported feeling sad. The second study (Cortina and De la Herrán, 2008) explains that currently, in Europe, no official curriculum includes death as a formative domain, stating that didactics has focused on areas of knowledge and classical teaching subjects but not on the importance of death, creating concern on whether it is believed to be relevant.

3.2.3 Students with limiting illnesses and their classmates: difficulties and needs

Students with limiting illnesses, as well as their peers in the classroom, face several challenges and have unique needs in their development and learning process (Newhart and Olson, 2017).

Research indicates that students with chronic illnesses often encounter greater academic and social difficulties compared to their healthy peers (Jones and Wilkie, 2010; A'Bear, 2014; Máarell-Olsson et al., 2021). These challenges encompass feelings of isolation, disruptions in social and educational development, psychological distress, and decreased academic performance.

Several studies (Zhu and Van Winkel, 2015; Paul et al., 2019; Máarell-Olsson et al., 2021; Powell et al., 2021) have explored the implications of serious illness on students, shedding light on their educational and social needs. Students dealing with severe illnesses often grapple with increased absenteeism, academic hurdles, and psychosocial issues (Powell et al., 2021). Furthermore, illness can profoundly impact a student's physical, psychological, social, and existential well-being (Paul et al., 2019). It's worth noting that the absence of a school environment in the daily lives of ill students can affect their academic motivation and self-esteem, potentially exacerbating their educational challenges (Zhu and Van Winkel, 2015). The lack of support from teachers or schools can further compound these difficulties (Jones and Wilkie, 2010).

Understanding the maturity level of students in comprehending death and bereavement can also influence teachers' ability to communicate effectively (Lowton and Higginson, 2003). Additionally, difficulties may arise when students are confronted with the death of a peer but are unable to discuss it openly (Lowton and Higginson, 2003). Both teachers and parents may feel uncomfortable addressing death with children, reflecting broader societal challenges in acknowledging bereavement issues.

Addressing the multifaceted needs of these students necessitates a holistic approach that encompasses palliative care and prepares school communities to cope with and provide support for end-of-life experiences and bereavement (Paul et al., 2019). Educational and social needs are interconnected and encompass students' ties to their school, including keeping up with homework, participating in school activities, and maintaining contact with friends and peers (Zhu and Van Winkel, 2015). It's essential to recognize that sick children and adolescents may harbor fears of rejection or exclusion due to their illness, underscoring the importance of offering them emotional and social support (Zhu and Van Winkel, 2015).

3.2.4 Rethinking classroom actions and proposals for intervention

The need to rethink educational practices is evident (Cortina et al., 2009; A'Bear, 2014). Kennedy et al. (2020) argue that the development of a critical reflection model that includes reflective practices and transformative learning is of great relevance to death education. As previously mentioned, Ramos et al. (2018) argue for the importance of training in death and bereavement issues for educational teachers, so that they learn to act in a justified and systematized way. This would help teachers to act from a conscious pedagogy and not from improvisation. However, it is important to bear in mind that not all educational practices apply to all contexts and needs of schools and students. Martins et al. (2018) argue for the importance of discussing the issue in terms of age rather than making assumptions about palliative care, illness, and death. Guillaumet et al. (2018) describe that students experience giving the last goodbye as an awareness of loss. According to the authors, sympathetic care includes support in the farewell ritual, comfort, respect for symbolic expressions, intimacy, expertise in therapeutic communication, and adapting the environment for an intimate experience. Table 3 presents practical experiences applied in the educational context that have been explored by different authors.

The documents included in this section show that there is a broad line of research on this topic that includes methods such as film-video forums, children's literature, music, humor, role-playing, didactic projects, interviews with experts, workshops, service-learning, farewell letters, research on the cycle of life and nature, cooperative workshops to normalize death, participation in traditional festivities such as the Day of the Dead, drama workshops or dramatized readings, and brainstorming on the concept of death and mourning etc. Drawing is also an important tool for expressing emotions and feelings related to death and bereavement. In addition, activities such as smell and color workshops, murals, funerary models, messy games, physical education games, and tasks involving cutting, poking, punching, and knocking down plasticine figures are recommended.

TABLE 3 Classroom intervention proposals.

Author	Practice innovation	Description	Responsiability
Akard et al. (2015)	Legacy creation	Digital narrative of how they want to be remembered: (a) their personal characteristics (e.g., name, gender, appearance, personal traits), (b) the things they like to do (e.g., hobbies, interests) and (c) their connection to others (e.g., telling family members how much they are loved).	Teacher
Beccaro et al. (2014)	Critical thinking	Discussion on a film that has been screened.	Teacher
Beccaro et al. (2014)	Remembering the person who died	Thinking about happy moments of that person during the lifetime.	Teacher
Blake et al. (2020)	Creative exploration of the subject	Storytelling	Teacher
Cortina and de la Herrán (2008)	Didactics of death pre- and post-crisis	Add illness and death to the curriculum in a fixed way as a preventative, and combine with didactic principles if a tragic eventuality occurs.	Teacher and school
Gorosabel-Odriozola and León-Mejía (2016)	Building empathy	Accompaniment of the teacher during activities to express condolences (drawings and handicrafts, among others) and self-knowledge.	Teacher
Kennedy et al. (2020)	Model of critical reflection	Didactic approach to death education through reflective practice and transformative learning	Teacher and school
Lawhon (2004)	Escucha activa	Normalising death by accepting reactions, becoming aware of emotions, validating feelings, acknowledging possible effects on performance, and creating a safe place where the student can seek relief, comfort and refuge.	Teacher and family
Lowton and Higginson (2003)	Adult support	Time-out cards for meltdowns or when necessary and contact-books	Teacher and school
Máarell-Olsson et al. (2021)	Telepresence robots to engage cancer patients in education (TRECA)	Implementation of a telepresence robot service to meet the needs of its users with cancer, helping to facilitate meaningful connections.	Teacher, family and school
Paul et al. (2019)	Curriculum development and bereavement training	Create and implement an education program as well as deliver bereavement training for the school staff.	Teacher and school
Ramos et al. (2016)	Identifying emotions and grief	Film-video forum, children's and young people's literature, music, humour, dialogue about doubt, role-playing, small research, educational projects, interviews with experts, workshops, service-learning, drawing, and games to release energy or anger.	Teacher
Cortina and De la Herrán (2008) and Ramos et al. (2018)	Standardization strategies	Narrative, drama or social activities with students as protagonists.	Teacher and school
Selfa et al. (2015)	Critical thinking	Read and discuss literary texts.	Teacher
Tresman et al. (2016)	School passport	The protocol consists of several stages and includes early communication and reintegration planning between the center, the family and the health team, followed by meetings at school re-entry.	Health team, family and school
Tresman et al. (2016)	Reintegration support	School passport	School and health team

Own creation based on the structure proposed by Paul et al. (2019).

In summary, the literature suggests the importance of treating children's grief with an approach that allows them to think and talk about their feelings and remember the person they lost. The nature of the recommended strategies allows for active engagement and creative exploration which appears to contribute to greater psychological preparedness and resilience in the face of death and loss, reducing the risk of negative developmental outcomes and complex grief (Blake et al., 2020).

The pedagogy of death is an emerging topic and a pressing need in the field of education. Pedagogical input remains scarce, especially in actual practice (Ramos et al., 2018). Hospitalized children want to be kept informed about the activities of their friends and family and have an idea of what they are missing at school (Wadley et al., 2014). Moreover, teachers consider it important to be aware of children's well-being and to maintain regular contact with them to support their learning and socialization. We must keep in mind that the local

culture can be a barrier to interaction between teachers, bereaved students, and their families (Lowton and Higginson, 2003).

3.2.5 The benefits of technology

Máarell-Olsson et al. (2021) propose that artificial intelligence systems (AIS) could reduce loneliness and improve quality of life in young and hospitalized patients by enabling their participation in school activities. The potential of providing AI-based tools to experience and participate in activities they might not otherwise be able to take part in could strengthen their inclusion and mitigate the negative effects of the disease.

Digital technologies enable a proper connection between teacher and learner, including those who are absent. Teachers, even non-tech-savvy ones, can easily learn to use video communication software. However, when a learner is absent for a long period, the teacher's control over learning is reduced. Therefore, technology can be used to establish a stable video and audio connection between the teacher and the absent student (Jones and Wilkie, 2010). The use of telepresence robots allows homebound students to interact with their peers and continue their learning process as if they were present in the classroom (Newhart and Olson, 2017). Whereas students who have used these robots, report feeling included and experiencing a sense of autonomy, well-being, and competence.

However, teachers have concerns about privacy and confidentiality, as there is a possibility that families can see what is going on in the classroom, which can compromise the safe classroom environment. Maintaining a connection to the school is important for children in hospitals, but privacy and appropriateness of ICT are relevant elements to consider (Wadley et al., 2014). According to them, disruption of scheduled education, violation of privacy, problematic use, and transmission of inappropriate images reduce the suitability of ICT for use in school-hospital connections, for which the creation of protocols or external monitoring is needed.

Powell et al. (2021) found that telepresence technology is needed to connect adolescent students with cancer to their schools. The first phase of their research demonstrated the need for a telepresence robot service to facilitate the connection between the patient and the school. The review of the potential usefulness of telepresence robots for schools suggests that they can enhance education and social development but also highlighted privacy and acceptance concerns. Moreover, Máarell-Olsson et al. (2021) found that telepresence robots can improve the connectedness and mood of chronically ill students. They examined the impact of telepresence robots on children and adolescents with cancer and found that they facilitated social and academic connections, reduced loneliness, and perceptions of falling behind academically.

Mobile technology can also be used as a tool to provide an asynchronous communication link between the school and the student's home, allowing for direct instruction and minimizing learning gaps (A'Bear, 2014). It also improves collaboration between school and home and allows the student to learn independently. Zhu and Van Winkel's (2015) study found that the ICT learning tool had a positive impact on meeting the educational and social needs of long-term ill adolescents. The ICT tool also helped respondents to keep up with schoolwork, maintain social contact, and reduce social isolation. Additionally, parents confirmed that the ICT tool played an important role in continuing education and reducing stress related to school reintegration. Furthermore, the study found evidence that ICT-based learning tools can be useful in preventing the social isolation of long-term ill children.

3.2.6 Training needs

Teacher training is necessary, both in subjects related to illness, grief, and death, as well as in the use of technological and digital tools. Solid and specific training in death education is required to have appropriate support strategies and implement the pedagogy of death due to the lack of knowledge of most teachers (Ramos et al., 2018). It is more than evident that teachers lack pedagogical preparation in the subject of interest (Gorosabel-Odriozola and León-Mejía, 2016) for various historical and cultural reasons, as well as lacking resources and tools to use in the classroom to promote the teaching of death. Educational interventions raise awareness of palliative care among adolescents, although more research is needed to evaluate its the effects, promote education in local communities, and foster compassionate communities (Martins et al., 2018).

The research findings support the importance of palliative care education for appropriate care. The study by Kennedy et al. (2020) revealed that bereaved young people need to be listened to and have ongoing support that understands the impact of bereavement; they also need practical support and not to have assumptions made about their needs. Additionally, according to the researchers, teachers and principals want to provide options for bereaved children to feel safe and they need skilled support and specific training to respond appropriately to death and bereavement situations.

Teachers may also feel the need to be strong despite their grief and feel uncertainty about how to manage their pupils' grief, in addition to the fact that training and support for teachers in this area are uneven (Lowton and Higginson, 2003). The authors also state that there are few bereavement policies in schools, coupled with a lack of time and curriculum pressures, which increases the likelihood of mismanagement of incidents. More research is recommended to support bereaved children, families, and teachers. Not only is there a lack of preparation about the pedagogy of death, but there is also a great need for specialized teacher training and for professional development in the use of technological tools such as AIS or social robots, which poses a great logistical challenge (Máarell-Olsson et al., 2021).

4 Discussion

4.1 Supporting students with limiting illnesses

Analysis of the obtained documents supports the fact that schools play an important role in coping with illness, bereavement, and death. In line with Friesen et al. (2020), the association of illness and death with negative emotions is evident. For pupils with a serious, life-threatening or palliative illness, school is a very useful context that provides a sense of normality and distraction from their life situation, while providing long-term goals and a strong social connection. In the case of preparing for the possible death of the ill peer and the bereavement of peers left behind, schools must be equipped with the necessary resources and training to provide support and comfort to pupils and teachers. The need for technological tools, especially artificial intelligence (AI) and social

robotics, represents a great opportunity for accompaniment in these types of situations.

Prolonged absence from school could harm children, and it is necessary to provide teachers with tools and training to support their students and promote coping strategies during illness, loss, and bereavement. Additionally, all schools should implement a school reintegration program, as well as social actions and educational programs to raise awareness of palliative care (Bollig et al., 2020). Leadership in education about illness, death, and bereavement is important to influence policies and practices related to these issues, so it is essential to develop a specific program and curriculum on end-of-life care and bereavement in schools. Moreover, different tools should be made available to enable the presence, participation, and progress (Aragon, 2003) of the sick student through a physical and synchronous presence in class during hospitalization and/or grief period. This is possible through AIS and

social robotics (Turner et al., 2022) but, as Máarell-Olsson et al. (2021) mention, this is a major logistical challenge that should include an exhaustive study of ethical implications.

Concerning the aim of this article and its research question, 24 documents were analyzed in depth, and, based on the classification proposed by Gorosabel-Odriozola and León-Mejía (2016), the following guidelines with practical implications are mentioned in Table 4.

4.2 Preparing for death and bereavement in schools

In light of our findings, it becomes evident that the subject of death, while historically prevalent in literature, continues to be a

TABLE 4 Compilation of accompanying strategies and practical implications.

Proposed strategies	Practical implications
Educate and sensitise students and teachers in the pedagogy of death.	• Provide ongoing training and education in pedagogy of death for teachers to equip them with the necessary tools for action (Ramos et al., 2018). • Recognise and normalise the effects of bereavement on other aspects of life and education due to distress and loss (Lawhon, 2004).
To provide tools for emotional management and regulation.	• Consider the peculiarities of the class and the students in it and design a personalised intervention strategy based on certain aspects, such as age (Martins et al., 2018; Ramos et al., 2018). • Allowing for dismissal (Guillaumet et al., 2018) • Taking control of the narrative (Máarell-Olsson et al., 2021) • Offering social support to help understand the grieving process and act supportively (Ramos et al., 2016)
Normalising illness and death	• Communicate the death of a loved one with simple, sincere, and sweet phrases (Pla et al., 2018). • Not being afraid to use the words "death" or "has died" (Pla et al., 2018). • Conception of death as part of life. • Adapt understanding to group and individual characteristics (Pla et al., 2018). • Avoid euphemisms and explain biological death (Pla et al., 2018). • Talking and enquiring about palliative care (Martins et al., 2018) forming competences with students as active agents in the process of discovery.
Training and resourcing teachers and schools	• Follow Chilliwack Hospice's recommendations and resources for age-appropriate bereavement support (García and Bellver, 2019). • Visit schoolcrisiscenter.org for other useful resources. • Use different resources to present and address the topic such as film-video forum, children's literature, music, humour, role-playing, didactic projects, expert interviews, workshops, service-learning, drawing, narrative exercises, storytelling, time-out cards, school passport and others (Lowton and Higginson, 2003; Cortina and de la Herrán, 2008; Selfa et al., 2015; Ramos et al., 2016; Tresman et al., 2016; Ramos et al., 2018; Blake et al., 2020).
Design and implement an action protocol at the school to provide coordinated responses to situations of loss.	• Developing a model of critical reflection that includes transformative learning at preventive and curricular levels (Kennedy et al., 2020). • Carrying out coordinated and multidisciplinary actions with different professionals inside and outside the school (Powell et al., 2021). • Implement a protocol for monitoring and controlling well-being (Tresman et al., 2016). • Consider and integrate local culture (Lowton and Higginson, 2003)
Making accommodations for students in need (both sickness and bereavement)	• Explain or allow the student themselves, if their situation permits, to explain to the class why they are absent from the classroom (Gorosabel-Odriozola and León-Mejía, 2016).
Making use of the advantages of ICT for inclusion and presence	• Consider the use of socially intelligent agents (Máarell-Olsson et al., 2021). • Use the advantages of technology (Jones and Wilkie, 2010; A'Bear, 2014) and telepresence (Powell et al., 2021). • Implementing social bots (Newhart and Olson, 2017)

challenging topic within societal norms, particularly in educational settings. The results underscore the necessity of introducing death education into the curriculum from an early age, not merely as a means to break societal taboos but as a fundamental component of emotional and psychological development.

Our analysis reveals that children's understanding and coping mechanisms regarding death are significantly influenced by their developmental stage, temperament, and the social and emotional environments surrounding them. This highlights the pivotal role educators play in shaping these perceptions, not through the imposition of adult beliefs but through guided discussions that respect and acknowledge children's developmental capacities. Furthermore, the synergy between palliative care and health promotion, as indicated by our results, suggests a paradigm shift towards a more integrated approach in addressing death within educational frameworks. This approach not only aims at normalizing the concept of death but also at enhancing the competencies required to deal with loss and bereavement effectively.

The discussion extends to the importance of tailored support strategies within educational settings. Recognizing the diversity of experiences and needs among students, especially in the face of peer or staff losses, calls for a nuanced understanding and approach by educators. This personalized strategy ensures that the mourning and acceptance process is integrated as a natural aspect of development, rather than an external imposition fraught with adult anxieties. Moreover, the findings advocate for the inclusion of death education as a cross-cutting theme throughout various stages of growth. Such education should not only cover the factual aspects of death and bereavement but also encourage personal reflection and the development of sensitive support mechanisms for those experiencing loss. This comprehensive approach can significantly contribute to the holistic development of students, preparing them to face life's eventualities with resilience and empathy.

All of the above underscores the critical need for a paradigmatic inclusion of death education in the curriculum. It emphasizes the role of educators in facilitating this process and the overall impact of such education on students' emotional and psychological well-being. By addressing the societal taboo surrounding death in a constructive and educational manner, we can foster a generation more equipped to handle the complexities of life and loss.

4.3 Ensuring inclusion and progress through technology

Students with limiting illnesses, along with their classmates, face various challenges in their development and learning processes. The literature indicates that students with chronic illnesses often experience academic and social difficulties, including isolation, disrupted development, psychological distress, and reduced academic performance (Vignes et al., 2007). Effective collaboration between hospital and school staff is key to overcoming these challenges. The absence of support from teachers or schools can worsen these difficulties, affecting motivation, self-esteem, and overall performance.

Teachers play a significant role in supporting children, especially when dealing with sensitive topics like death. It's essential to approach death inclusively and encourage children's ideas without censorship. Technologies like AI systems and social bots have shown potential in

reducing loneliness and improving the quality of life for hospitalized or absent students. Technology can enhance inclusion and mitigate the negative effects of illness, even though there may be a lack of teacher preparation in this area.

Another inclusive solution offered by AI involves applications like emotion recognition and expression through robotics (Ramis et al., 2017, 2020; Ramis, 2019). These technologies enable both presence and active participation, but their integration requires appropriate didactic strategies and well-designed learning situations. Privacy, confidentiality, and ethical concerns related to new technologies in the classroom should also be considered.

Ultimately, students affected by bereavement need support and understanding from teachers who require training to respond effectively to death-related situations. The lack of bereavement policies in schools, along with curricular pressures and limited time, can lead to inappropriate handling of these situations. Teachers also need specialized training in using technologies like AI and social bots. However, teachers should not replace trained bereavement professionals, and additional resources should be offered to students and their families. Cultural differences, personal beliefs, and individual needs should be considered in addressing death and bereavement.

In conclusion, the implications of our findings for educational practice and policy are profound and necessitate a concerted effort to integrate the identified support strategies into curricula and teacher training programs. The strategies we have highlighted offer a blueprint for developing more inclusive and grief-sensitive educational environments. By embedding these approaches into the core of educational frameworks, we can foster a culture that acknowledges and addresses the complexities of illness, bereavement, and death within the school setting. Furthermore, the adoption of these strategies can significantly influence the formulation of educational policies, urging policymakers to recognize the importance of comprehensive support systems that cater to the emotional and psychological needs of students. However, the implementation of these strategies is not without challenges. Potential barriers such as cultural norms, resource constraints, and varying levels of awareness and acceptance among educators and policymakers must be addressed. Facilitators for successful integration include robust training programs, interdisciplinary collaboration, and the promotion of policy initiatives that prioritize mental health and well-being in schools. Ultimately, by navigating these barriers and leveraging facilitators, we can work towards an educational system that not only imparts knowledge but also compassionately supports the holistic development of its students in the face of life's inevitable challenges.

4.4 Limitations of the scoping review and areas for future research

Despite the valuable information obtained from this study, several limitations should be considered when interpreting the findings. Scoping reviews aim to provide a comprehensive overview but can result in a broad scope that limits in-depth analysis. While multiple databases were searched to capture relevant literature, grey literature was excluded, potentially missing some relevant information. Variability in the quality of included studies due to a wide range of study designs and methodologies may have influenced the robustness and generalizability of results. Strict criteria were applied to include only articles meeting standards, but some variability in findings may

persist. Some intervention proposals discussed in the papers lack ecological validity as they have not been evaluated in real contexts. Future research should implement and evaluate these support strategies to determine their effectiveness and applicability in different schools and contexts. Additionally, the analysis focused exclusively on chronic diseases, potentially overlooking other relevant material addressing death in different contexts.

In light of these limitations, there are several areas for future research. Researchers should explore how support strategies and training needs identified in this scoping review can help schools cope with pressing concerns beyond illness, such as bereavement due to war, climate change consequences, and gun violence. Investigate the effectiveness of specific support strategies like counseling, trauma-informed approaches, and peer support programs in various crisis situations. Furthermore, researchers should investigate the integration of Information and Communication Technology (ICT) in educational settings. Understand how technology can improve teaching and learning outcomes and support schools dealing with different types of loss and crises. Explore the effectiveness of online resources, virtual support groups, grief counseling, and mental health services, as well as the use of social media platforms for disseminating information and resources during and after crises.

5 Conclusion

Teachers' strategies for accompanying bereaved students should be sensitive and understanding, providing a safe and supportive environment. It is important to be aware of the limitations of teachers and schools to provide additional resources if necessary. One of the commonly used strategies is the use of ICT for distance learning. However, essential to acknowledge that not every student has.

access to ICT or the capacity to use them effectively. Additionally, distance learning may be less effective for learners who require close personal contact and follow-up with their teachers or for those who lack a stable learning environment at home due to financial or family reasons.

In this regard, teachers need to engage in a reflective process to effectively accompany learners with illnesses who are unable to attend the face-to-face classroom. This may involve identifying specific students who require closer monitoring, adapting teaching strategies

to meet the individual needs of each student, and collaborating with parents, family members, and health professionals to ensure that students receive the necessary support. Teachers should adopt a holistic and personalized approach to accompany learners with illnesses who cannot attend physical classrooms, taking into account the unique limitations and challenges faced by each student.

Author contributions

LR-N: Conceptualization, Data curation, Formal analysis, Methodology, Writing – original draft. PH-A: Methodology, Supervision, Validation, Writing – review & editing. MR: Funding acquisition, Supervision, Writing – review & editing. SV: Funding acquisition, Project administration, Writing – review & editing.

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