



OPEN ACCESS

EDITED BY

Nazaret Martínez-Heredia,
University of Granada, Spain

REVIEWED BY

Manuel Capelas,
Catholic University of Portugal, Portugal
Hila Fuchs,
Gaia College for Academic Research, Israel
Eimear Mc Loughlin,
Aarhus University, Denmark
Giorgio Poletti,
University of Ferrara, Italy

*CORRESPONDENCE

Pere Mercadé-Melé
✉ pmercade@uma.es

RECEIVED 26 September 2024

ACCEPTED 10 December 2024

PUBLISHED 03 January 2025

CITATION

Ramos-Pla A, del Arco I and Mercadé-Melé P
(2025) Bibliometric analysis of pedagogy of
death. *Front. Educ.* 9:1502231.
doi: 10.3389/educ.2024.1502231

COPYRIGHT

© 2025 Ramos-Pla, del Arco and
Mercadé-Melé. This is an open-access article
distributed under the terms of the [Creative
Commons Attribution License \(CC BY\)](#). The
use, distribution or reproduction in other
forums is permitted, provided the original
author(s) and the copyright owner(s) are
credited and that the original publication in
this journal is cited, in accordance with
accepted academic practice. No use,
distribution or reproduction is permitted
which does not comply with these terms.

Bibliometric analysis of pedagogy of death

Anabel Ramos-Pla¹, Isabel del Arco¹ and Pere Mercadé-Melé^{2*}

¹Organizational Development Team (EDO-UdL), Chair for the Development of Healthy and Sustainable Organizations and Territories (DOTSS-UdL), Department of Education Sciences, Faculty of Education, Psychology and Social Work, University of Lleida, Lleida, Spain, ²Department of Applied Economics (Economic Structure), University of Málaga, Málaga, Spain

Introduction: The objective of the present study is to identify the main emerging trends and research lines with respect to pedagogy of death.

Methods: The methodology was based on a bibliometric analysis of the main international scientific contributions found in the Web of Science (WoS) database. A total of 276 articles published between 2010 and 2023 were revised. The data were analyzed with VosViewer and Bibliometrix R which are software tools for building and visualizing bibliometric networks.

Results: The main results show that the publications on pedagogy of death have increased through time, but decreased starting in 2020, both in the number of articles and citations.

Discussion: Scientific evidence is also presented on the need to continue working on pedagogy of death. This study contributes toward maximizing the visibility of pedagogy of death work in different contexts.

KEYWORDS

pedagogy of death, death, grief, didactics of death, death education

1 Introduction

Pedagogy of death is a relatively new field of study, which has attracted the attention of researchers, educators, and health professionals in the last few decades (Villacieros et al., 2016; Yang and Park, 2017). It is an educational approach that is centered on the teaching and reflection about death as an integral part of the human experience (Herrán, 2015; McAfee et al., 2020; Rodríguez Herrero et al., 2020a). Research in this field is centered on understanding how education and reflection on death can have a positive impact on the manner in which individuals face this inevitable aspect of life Ortego et al. (2016), Colomo and Cívico (2018), and Friesen et al. (2020) affirm that pedagogy of death advocates for creating a safe learning environment and that of support, in which students are able to openly explore and understand the concept of death, its cultural and social implications, and its impact on individuals and society. The addition of pedagogy of death in education study plans helps to create a more holistic and complete education system that prepares individuals to face the realities of life and death, with understanding, empathy, and emotional resilience (Renaud et al., 2015; Colomo, 2016; Campillo Ruiz and Ruiz Arriaza, 2017; Ramos-Pla et al., 2021). Rodríguez Herrero et al. (2020b) and Raccichini et al. (2022) point out that it is an essential aspect of education that helps students to learn about the inevitable reality of death, with knowledge, sensitivity, and emotional resilience. It should be noted that the COVID-19 pandemic may have enabled both educational centers and researchers to awaken in this emerging scientific reality (Herrán, 2020).

It is important to underline, as stated by Affifi and Christie (2019), Ramos-Pla and Camats (2018, 2019), Pedrero-García (2019), and Martínez-Heredia and Bedmar (2020), that pedagogy of death is a multi-disciplinary field that encompasses areas such as education, psychology, medicine, ethics, religion, and philosophy, so that research on the subject can be varied and diverse. Pedagogy of death can have various objectives and approaches (Guerra et al., 2018; Pedrero-García, 2020; Testoni et al., 2020; Ramos-Pla et al., 2023) which could include several aspects. First of all, work on grief (for people understand and deal with the process of mourning and loss), provides emotional and psychological tools to deal with the death of loved ones. Provide resources and emotional support for individuals who are dealing with the loss of a loved one, including the understanding of the process of mourning, and the search for professional help if necessary. In this regard, it is worth taking into account the recommendations offered by the Commission on the Value of Death (Sallnow et al., 2022) where they present different examples (such as the Kerala model) in which care and accompaniment for people who are about to die is enhanced. This fact has enacted a change in the narratives of death and mourning, as well as building a very powerful community response to these situations.

Secondly, it is possible to prepare for the end of life: Ease conversations about the wishes and preferences of people in relation with the end of their own life, such as decisions about palliative care, medical treatment, and disposal of assets. Moreover, can be promoted empathy and compassion: To promote a greater empathy toward individuals who are facing death and their loved ones, which can help in creating a society that is more compassionate and supportive. It should be added that it can conduct a philosophical and spiritual exploration. To address philosophical and spiritual matters related with death, such as the meaning of life, existence after death, and the individual and cultural beliefs about death.

It is possible to carry out funeral and legal planning. It can help individuals to understand the practical aspects of funeral planning, the legal documents, and the procedures after death. In addition, it can promote communication: Promote the starting of conversations about death between family members, friends, and health professionals, so that individuals can express their wishes and preferences at the end of life.

Pedagogy of death recognizes that the taboo and fear that very often surround the subject of death can be counterproductive for mental and emotional health of individuals and seeks to provide a space for education and open conversation about the subject (Ramos-Pla et al., 2018; Friesen et al., 2020; Herrán et al., 2021; Phan et al., 2023). It can be implemented in different contexts, such as schools, hospitals, palliative care centers, and religious communities, in order to enrich the understanding and coping against death in society (Testoni et al., 2020; Phan et al., 2023; Zhang et al., 2023). On the other hand, the pedagogy of Death is related to the new currents on Dark Pedagogy. Lysgaard and Bengtsson (2020) state that this pedagogy opens feelings of strangeness, depression, and alienation to children as part of educational processes. Dark Pedagogy aligns itself with these feelings and emotions as possibilities to normalize these processes, a fact that also occurs in the pedagogy of death. In addition, other currents trends relate the pedagogy of death

with environmental education and sustainability. Mc Loughlin (2023) highlights the role of animals in pedagogy and shows how anthropocentric conceptualizations of nature as a resource to be exploited, protected, and saved infuse the pedagogy of dissection. The same author states that zoo educators consider that encounters between school students and the death of animals contribute to a deeper environmental awareness.

Although an increasing interest in pedagogy of death has been observed, the authors did not find any articles on a bibliometric analysis of scientific articles in the Web of Sciences database during the 2010–2023 period. Thus, the objectives of the study were: To obtain the scientific information through statistical procedures applied to the review of the literature and the authors who had produced works related with pedagogy of death and to identify the trends and strategic lines of research with respect to pedagogy of death.

2 Materials and methods

2.1 Units of analysis

A descriptive and retrospective cross-sectional bibliometric analysis was conducted (Fauzi et al., 2023). This analysis is based on the review of scientific publications related with pedagogy of death, encompassing a period from 2010 until 2023. The main objective of the research was to study how the publications in this field have evolved. The main tool for data collection was bibliometry, through the use of statistical techniques applied to the review of the literature and the identification of the authors responsible for the publications (Pacheco-Mendoza and Alhuay-Quispe, 2019; del Arco et al., 2022; Selva-Pareja et al., 2022; Fauzi et al., 2023).

2.2 Procedure

In the present study, an exhaustive search was performed for articles related with pedagogy of death, through the use of the Web of Science database, with the search date ending on September 13th, 2023. The selection of this database was based on its prestige and its long trajectory in the collection of scientific data, aside from being the preferred one in bibliometric analyses (del Arco et al., 2022). The search equation used in Web of Science was as follows: Web of Knowledge: TS= (“PEDAGOGY OF DEATH” OR “DEATH EDUCATION” OR “DIDACTICS OF DEATH”).

The search results provided a total of 1,051,000 documents. The following inclusion criteria were taken into account: area (Education and Educational Research), language (English), time period (2010–2023) and type of document (scientific article). More specifically, the area of Education and Educational Research obtained a total of 11,244 articles. After, different filters were applied to refine the results, through the selection of only articles written in English published between 2010 and 2023. Other types of documents were excluded, such as book chapters, books, reviews, conference proceedings, duplicated articles, and restricted-access publications, as it was difficult to obtain the entire article for their review. According to the inclusion and exclusion criteria, an analysis was performed of 9,975 documents, as detailed in Table 1.

Figure 1 shows a flow diagram based on the PRISMA 2020 methodology (Page et al., 2021), that is commonly used in systematic reviews, to illustrate the stages of refinement performed in this study.

TABLE 1 Summary of the search protocol.

Study period	2010–2023
Database	Web of Science
Keywords	Death education, pedagogy of death, didactics of death
Inclusion criteria	a. Journal articles published between 2010 and 2023 b. Articles written in English c. de Web of Science category: Education and Educational Research
Exclusion criteria	d. Duplicated articles e. Restricted-access articles f. Conference proceedings, books, books chapters or other type of documents
Last date accessed	15th January 2024

Created by authors from the Web of Science.

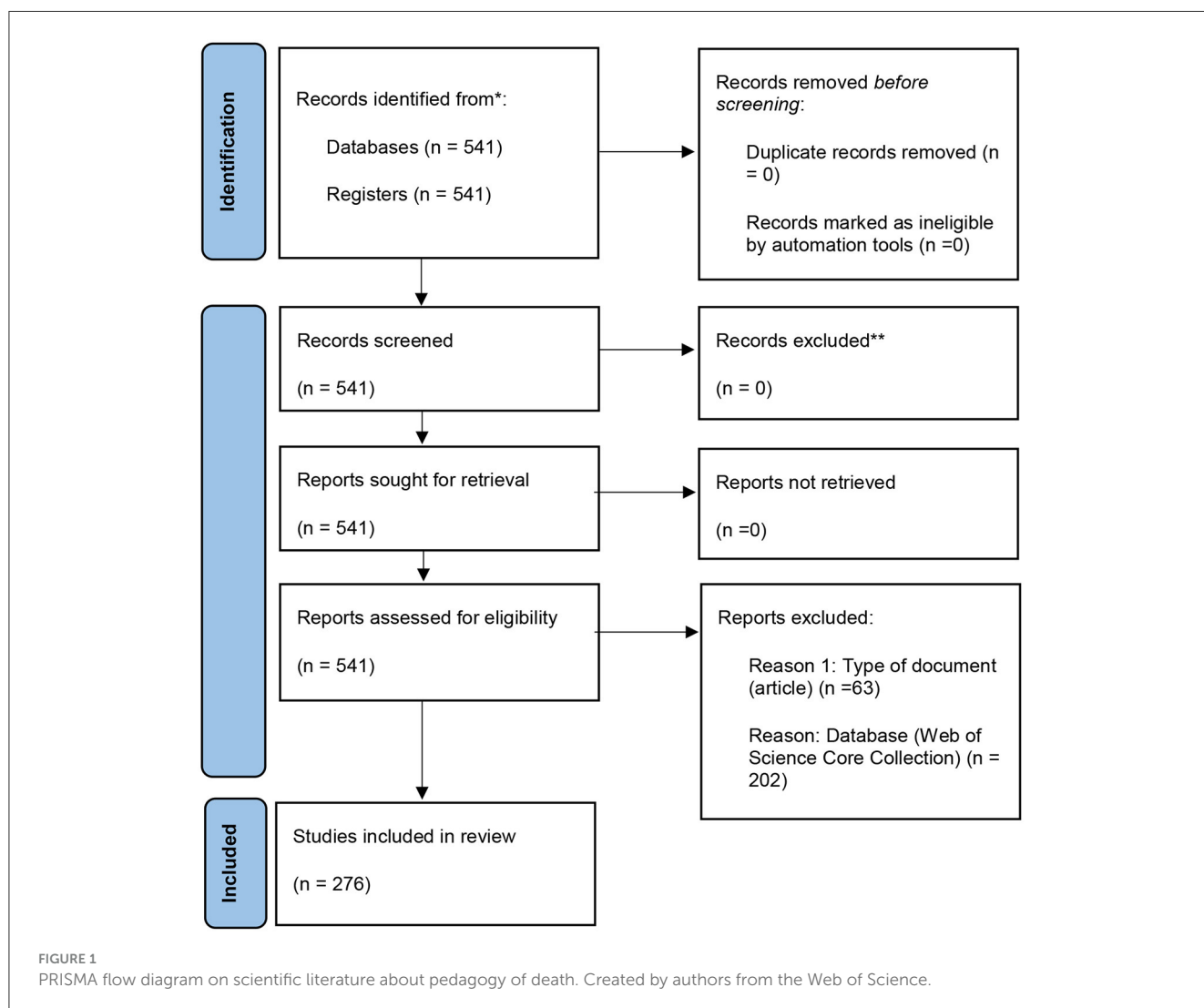
3 Results

3.1 Evolution of the publications and citations about the pedagogy of death in the 2010–2023 period

With respect to the number of publications throughout the years and the citations received, a significant increase was observed in the research related with pedagogy of death until the year 2021 (as shown in Figure 2 and Table 2). In that year, a total of 36 articles and 586 citations of publications on the subject were observed. However, it is important to underline that the number of publications has been increasing until 2023, reaching a total of 41 publications.

3.2 Journals with the highest number of publications on pedagogy of death and their geographical distribution

As shown in Table 3, the journal that occupies first place in this category is OMEGA: Journal of death and dying, with a total



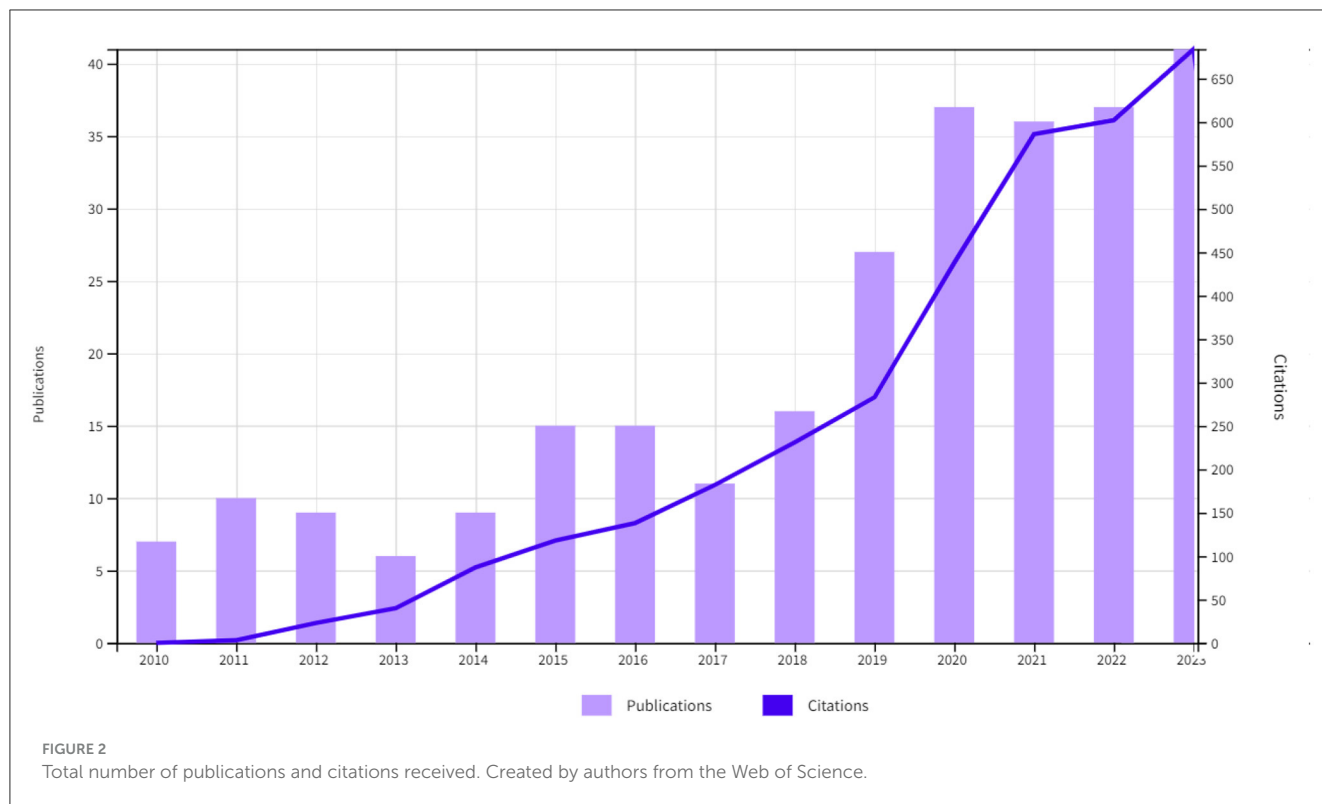


TABLE 2 Number of articles and citations on pedagogy of death from 2010 to 2023.

Year of publication	Number of records	Number of citations
2023	41	684
2022	37	602
2021	36	586
2020	37	438
2019	27	283
2018	16	231
2017	11	182
2016	15	138
2015	15	118
2014	9	87
2013	6	40
2012	9	23
2011	10	3
2010	7	0

Extracted from Web of Science.

TABLE 3 Main journals with the highest number of publications on pedagogy of death.

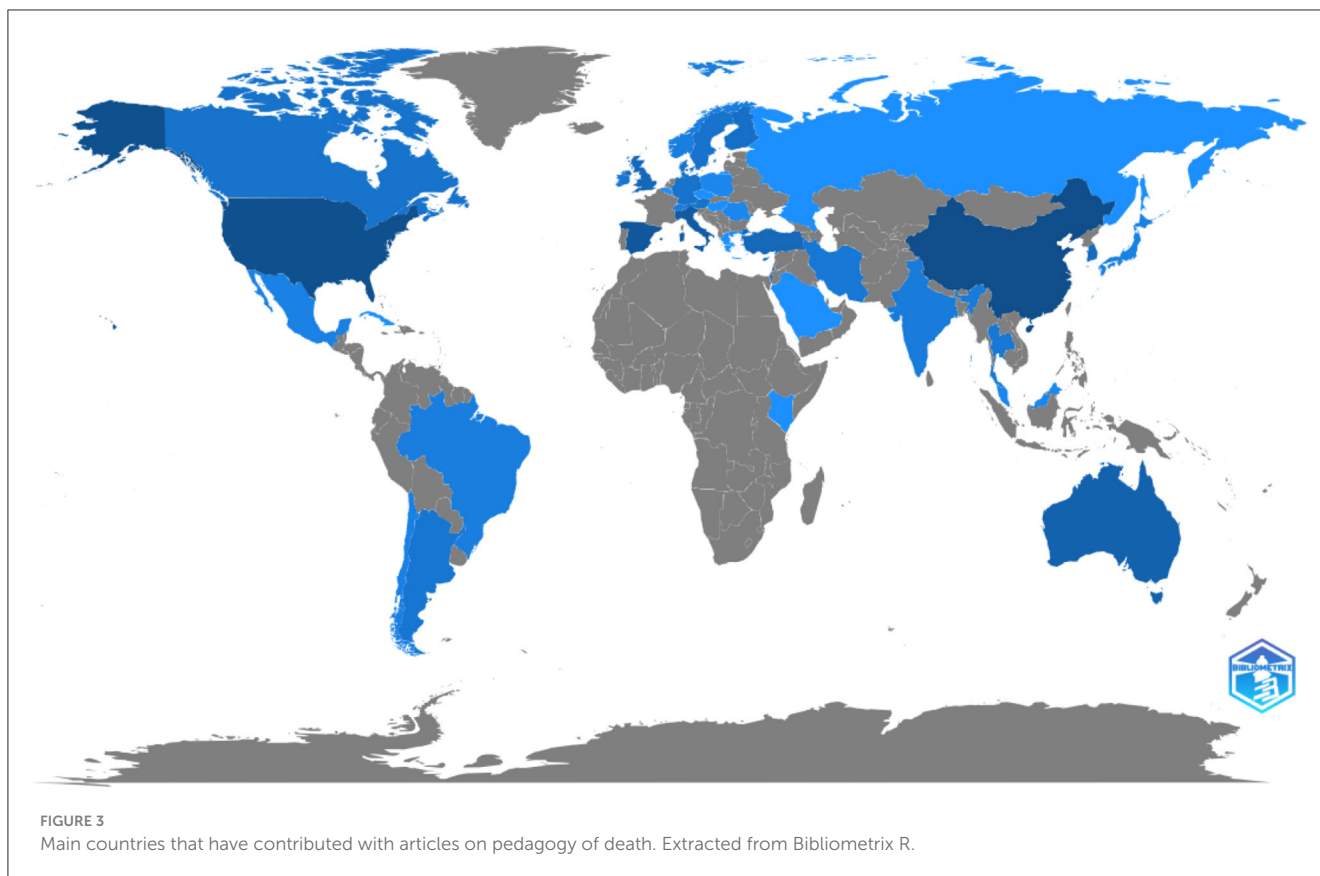
Journal titles	N. of records	% out of 9.975
OMEGA Journal of death and dying	38	14%
OMEGA	37	13%
Death Studies	29	11%
Frontiers in Psychology	8	3%
Nurse Education Today	8	3%
Behavioral Sciences	7	3%
Behavioral Sciences Basel Switzerland	7	3%
American Journal Of Hospice Palliative Medicine	5	2%
International Journal Of Environmental Research And Public Health	5	2%
The American Journal of Hospice Palliative Care	5	2%

Created by authors from the Web of Science.

of 38 articles (14%) related with pedagogy of death. It is followed by OMEGA, with 37 articles (13%), Death Studies with 29 articles (11%), and Frontiers in Psychology with eight articles (3%). Thus,

the publication of articles on pedagogy of death is diversified among different journals.

With respect to the geographical location of the publications (Figure 3), the countries that were leaders in research on the pedagogy of death were China, with a total of 177 articles, followed



far by USA, with 155 articles, and in third place, Spain, with 76 articles.

As shown in [Figure 4](#), the use of keywords has evolved and changed during the period from 2010 to 2013. Thus, while from 2010 to 2017 the use of keywords was concentrated on various terms related to death pedagogy (death anxiety, death education, mental health, bereavement, death and end-of-life-care), the latest uses in the period 2018–2023 have focused on three areas: death education, death, and China (the latter related to death pedagogy during COVID-19 in China).

3.3 Most important authors: citations and progress

With respect to the authors with the most publications on pedagogy of death, the following stood out: Ines Testoni with 28 articles, Pablo Rodríguez with 15 articles, and Luca Ronconi with 15 articles ([Table 4](#)).

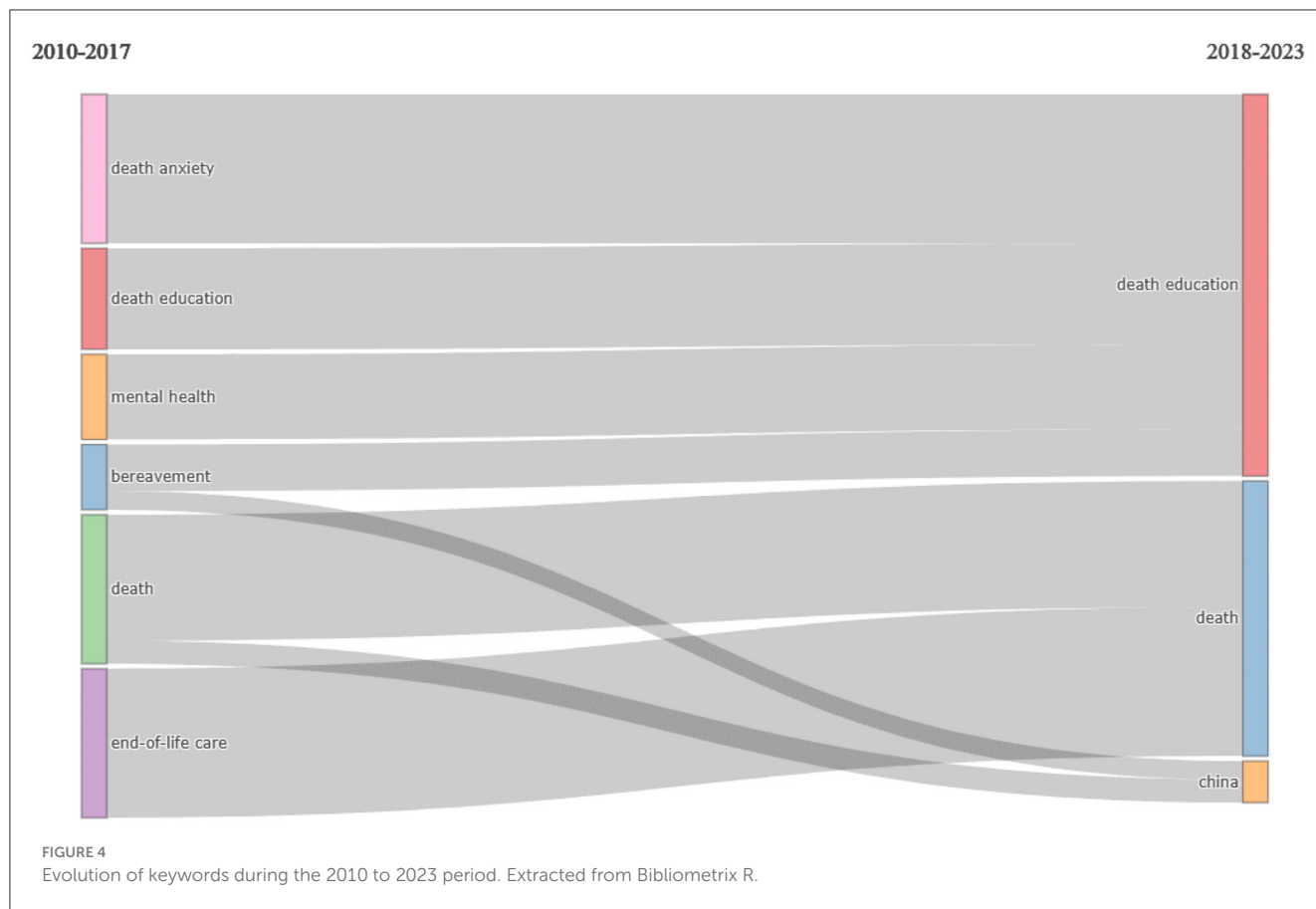
In addition, the authors who obtained the most citations were ([Table 5](#)): WenJun Ma (138 citations), Leonore Launer (134 citations), Pauline Gillan (123 citations), and Joanne Cacciatore (101 citations). In [Table 5](#), the articles with the most citations are displayed along with the main key idea of each.

Considering the above, an analysis was conducted and a summary written of the top four articles cited (which obtained more than 600 citations, as shown in [Table 6](#)).

3.4 Pedagogy of death groups during the 2010–2023 period

As can be observed in [Figure 5](#), the information contained in the 276 articles was examined with VosViewer. A co-occurrence analysis was performed, through the use of the author's keywords as the units of analysis. Among the main keywords identified in this analysis, we find: “death education,” “palliative care,” “death,” “attitudes,” “anxiety” and “education.”

As for the maps created by VosViewer, these were configured so that they would only show those in which the keywords had at least 10 mentions or co-occurrences in the articles. It must be added that a conglomerate analysis was also performed, which consisted on the classification of factors or elements with similar characteristics in the same group. These elements shared common characteristics that differentiated them from the other groups. From this process, different clusters emerged that provided information about different sets that had internal similarities. Thus, five key concepts or clusters were identified, which are described below. In group 1 we find the relationship between death education and health, especially in adolescents (in red). This cluster is composed of the following keywords: depression, adolescents, cancer, scale, care, health, communication, anxiety, and fear. In group 2 we can observe the approach to death education in children (in green). In this cluster, we can find the keywords: death education, end-of-life, death anxiety, children, bereavement, management, grief, COVID-19, and spirituality. In group 3, we find the approach and attitudes of death education among nurses



(in blue), in which the key concepts are: attitudes, experiences, experience, dying patients, impact, and nurses. In group 4, we can find the approach to death education at the end of life (in yellow). It is composed of the following concepts: palliative care, life, hospice, people, end of life care. Finally, in group 5 (purple), we can find aspects related to training students in death education: education, death, pedagogy of death, students, and pedagogy.

The four clusters are interlinked through the central theme of death education and how it is addressed in different contexts and age groups:

1. Group 1 (Adolescents and Health): This cluster focuses on how adolescents cope with death and mental health, addressing issues such as depression and anxiety. This establishes a foundation for the importance of education in this vulnerable group.
2. Group 2 (Children): Here we explore education about death in children, which complements the first group by focusing on an earlier stage of life. Grief management and death anxiety are key topics, suggesting that death education should start from an early age.
3. Group 3 (Nurses): This cluster focuses on nurses' attitudes and experiences in relation to death. The training and experience of health professionals are crucial to provide adequate support to patients and their families, connecting with the previous groups by highlighting the need for robust education in the management of death.

TABLE 4 Main authors on pedagogy of death.

Authors	Number of documents
Inés Testoni	28
Pablo Rodríguez	15
Lucia Ronconi	15
Agustín de la Herrán	14
Gianmarco Biancalani	8
Lorenza Palazzo	8
Michael Alexander Wieser	8
Ernesto Colomo	7
Adriano Zamperini	7
Erika Iacona	6
Hod Orkibi	6
Joanne Cacciatore	5

Extracted from Bibliometrix R.

4. Group 4 (End-of-Life Care): This group addresses education related to palliative care and end-of-life, which is essential to ensure that people receive the right support in their final moments. This relates to the other groups by emphasizing the importance of education at different stages of life and in the context of health care.

TABLE 5 Authors with the most citations.

Documents	Number of citations	Key ideas
Ma et al. (2015)	138	The lethal effects of heatwaves in China, and whether these are modified by individual and community-level characteristics.
Launer et al. (2011)	134	Cerebral microinfarcts and global cognitive function before death, and the role of brain weight and Alzheimer's lesions in this association.
Gillan et al. (2014)	123	End-of-life care education for nursing students.
Cacciatore (2013)	101	The ATTEND intervention model (tuning in, trust, therapeutic touch, egalitarianism, nuances, and death education) for psychosocial care during acute and chronic states of grief from fetal death.
Stone (2013)	95	A critical overview of the field of dark tourism studies.
Bronnum-Hansen and Baadsgaard (2012)	70	The trend in social inequality in life expectancy in Denmark.
Sliter et al. (2014)	61	Death anxiety and its relationship with occupational health.
Menzies et al. (2018)	54	The effect of psychosocial interventions on death anxiety.
Fonseca and Testoni (2011)	54	History and evolution of thanatology in Western society.
Cheng et al. (2019)	53	Exploring whether non-oncological patients in China with limiting illnesses are willing to sign their own do-not-resuscitate directives in a specialized palliative care clinic.
Noonan et al. (2016)	50	The concept of death literacy as a useful conceptual framework for palliative care within public health.
Mutto et al. (2010)	45	The lack of content related to palliative care in nursing higher education in Argentina.
Venkatasalu et al. (2015)	44	The effectiveness of high-fidelity simulation versus end-of-life care teaching for nursing students on how to cope with their first death experiences in clinical practice.
Malek-Ahmadi et al. (2016)	41	The presence of neuritic plaques and diffuse plaques is associated with cognitive decline in cognitively normal older individuals.
McClatchey and King (2015)	41	The relationship between receiving education about death and the decrease in anxiety toward it among humanitarian services students.
Cacciatore and Flint (2012)	41	The ATTEND model offers an interdisciplinary approach to mitigate negative effects and promote growth among those affected by traumatic grief.
Chan and Tin (2012)	39	Study and classification of the competencies required to work with experiences related to death.
Stylianou and Zembylas (2018)	36	How 10/11-year-old students in a classroom in Cyprus perceive the concepts of grief and mourning.
Testoni et al. (2018)	34	The relationship of 'before I die...' wishes, as well as the influence of religion, representation of death, and fear of death among social services and psychology students.
Arslan et al. (2014)	34	The attitudes of nursing students related to end-of-life care in Central Anatolia.

5. Group 5 (Student Training): Finally, this cluster focuses on training students in death pedagogy, which is critical to preparing future generations to face and teach about death effectively.

Ultimately, all of these clusters are connected by the need for comprehensive death education that addresses different age groups and contexts, ensuring that both individuals and health professionals are prepared to face death.

Without considering to which cluster each keyword belongs to, the concepts that were cited most frequently (Figure 6) were: death education (133 citations), attitudes (47 citations), death (46 citations), bereavement (141 citations), palliative care (39 citations), anxiety (38 citations), and education (37 citations).

3.5 New strategic research lines

When an analysis is conducted on the most-repeated words on pedagogy of death during the 2010–2023 period, the following stood out, with a frequency higher than 300: (Figure 7): “death” (1,350), “education” (583), “care” (329), “study” (302), and “students” (300). Thus, the current lines of research are related to the implications and consequences of addressing death education, and more specifically, during the COVID-19 pandemic.

4 Discussion

The objectives of the present study were to obtain scientific information through statistical procedures applied to a review of the literature and related authors who had produced works

TABLE 6 Analysis of the top four articles on pedagogy of death with the most citations.

References	Citations	Summary
Ma et al. (2015)	138	The objective of the article is to examine the effects of heatwaves in China on mortality and explore whether these effects are modified by individual and community-level characteristics. <ul style="list-style-type: none"> - The heatwave increased the risk of mortality in 66 communities in China. - Mortality was higher among individuals with pre-existing conditions. - Adaptation plans targeting vulnerable populations in susceptible communities during heatwaves should be developed to reduce health risks.
Launer et al. (2011)	134	The objective of the study is to investigate the association of microinfarcts (MBI) with global cognitive function (FQ) antemortem, and whether brain weight (BW) and Alzheimer's lesions [neurofibrillary tangles (NFT) or neuritic plaques (NP)] mediate the association. <p>The article concludes that:</p> <ul style="list-style-type: none"> - Microinfarct pathology is an important and independent factor contributing to cerebral atrophy and cognitive decline. - The role of vascular damage as an initiator, stimulator, or additive contributor to neurodegeneration may differ depending on when in the trajectory toward dementia the lesions develop.
Gillan et al. (2014)	123	The objective of the article is to examine how end-of-life care education has been delivered to university nursing students and critically discuss research on delivery methods and teaching strategies. It is concluded that: <ul style="list-style-type: none"> - Issues related to end-of-life care pedagogy are highlighted. - End-of-life care simulation is a beneficial strategy to help prepare university students to implement end-of-life care pedagogy.
Cacciatore (2013)	101	The objective of this study is to explore the ATTEND intervention model (Tune in, Trust, Therapeutic touch, Equalitarianism, Nuances, and Death education), as a means to improve psychosocial care during both acute and chronic grieving states. The main conclusions are: <ul style="list-style-type: none"> - The death of a child is a traumatic experience for parents, who not only have to cope with grief but also with social support and psychosocial care. - The loss of a baby needs more social recognition than it currently receives. - Death education is necessary to underline the need for the social support that parents who have lost a child require.

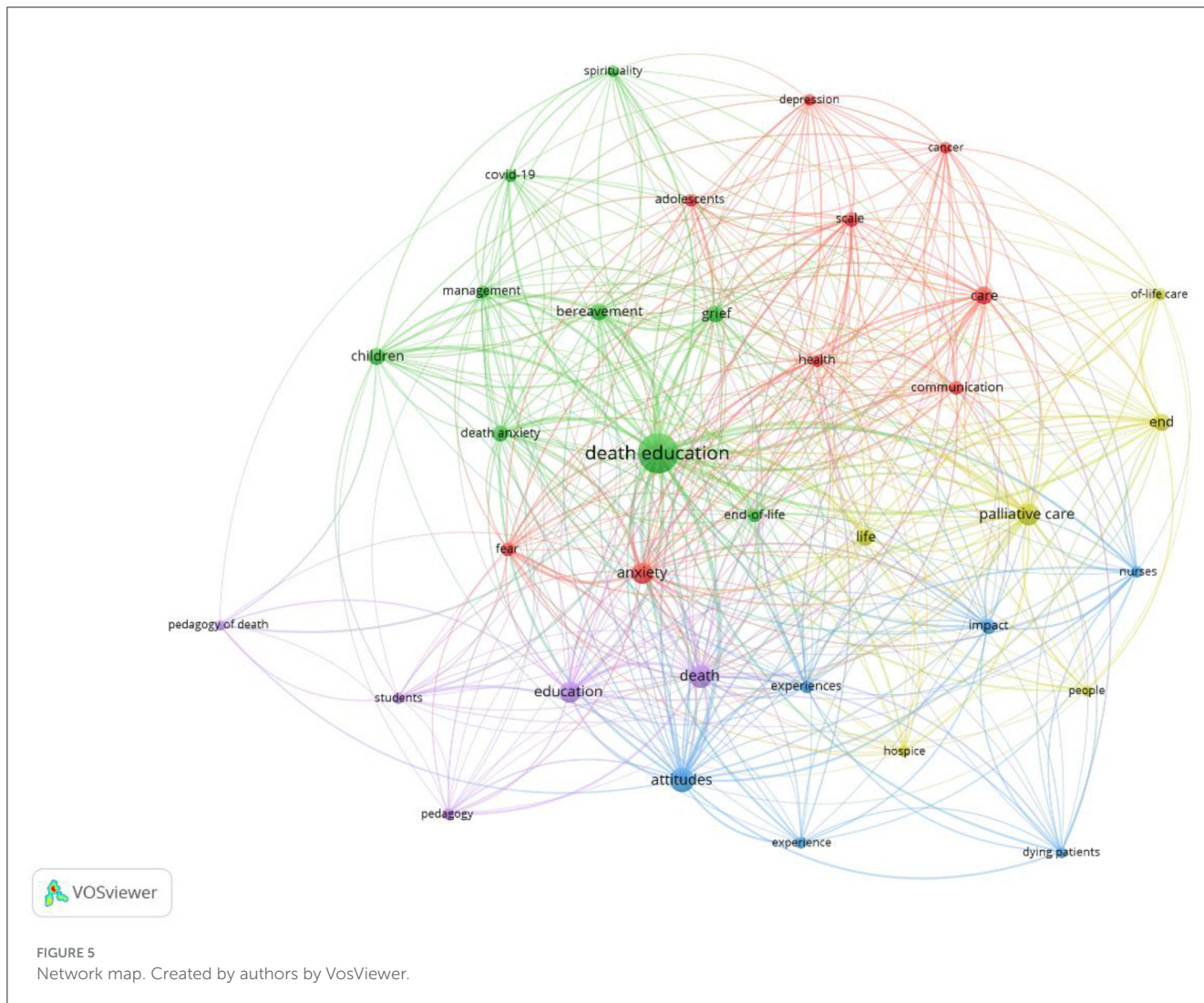
related with pedagogy of death, and to identify the main emerging trends and strategic lines of research with respect to pedagogy of death. The database selected was the Web of Science (WoS), as it has a more solid document background than other databases. Bibliometry, as stated by [Stahlschmidt and Stephen \(2020\)](#) and [del Arco et al. \(2022\)](#) allow us to define new strategic lines of scientific interest, as well as the progression of research on a specific subject, in this cases pedagogy of death in the area of Education and Educational Research. When the present study was conducted, this was the first bibliometric study on pedagogy of death based on the Web of Science database at the international level, and in the 2010–2023 period. Although similar studies exist ([Martínez-Heredia and Bedmar, 2020](#); [Sonbul, 2021](#); [Tsai, 2021](#); [Colomo et al., 2023](#)), the inclusion/exclusion criteria of the documents, the database, the period studied, the area, and the language are different.

One of the main results was that the number of articles on pedagogy of death, as well as the number of citations, increased until the year 2020 (37 publications and 438 citations). Also, different countries published on the subject, with the top three being: China (117), the United States (155), and Spain (76). This suggests that there is a greater interest or focus on this topic in the United States, China and Spain compared to the rest of the countries. In addition, the number of citations also indicates that the work done in these countries has been recognized and referenced by other scholars, which could reflect a greater influence or relevance of their research in the field. In short, the production and impact of the pedagogy of death vary significantly between these countries.

The journal OMEGA Journal of death and dying also stood out, as it contained the largest number of articles on pedagogy of death (38 publications). In addition, starting from 2018,

the subjects that were more interesting to researchers, and with the most publications, were: “death education,” “death,” and “China.”

Considering the analysis of the keywords that were most cited (aside from those that the authors utilized the most in their articles), five clusters were defined of the most interesting subjects with the greatest proliferation in the area of science. Firstly, the relationship between death education and health, especially in adolescents, is explored. Research studies focus on analyzing how to approach death education with adolescents, taking into account their developmental level, the anxiety and fear that death provokes, didactics, and effects. Here, we find studies such as those by [Herrán et al. \(2021\)](#) and [Testoni et al. \(2020\)](#). Secondly, the approach to death education in children is examined. The articles in this group analyze the impact of implementing death education in children, specifically addressing childhood grief processes (at different academic levels: Early Childhood Education and Primary Education). This was observed in studies such as those by [Colomo \(2016\)](#) and [Ramos-Pla and Camats \(2018\)](#). Thirdly, the approach and attitudes of death education among nurses are explored. In many publications, authors analyze the attitudes and experiences of implementing death education by nurses, both in their initial training ([Andersson et al., 2016](#)) and in their professional practice ([Harrad and Sulla, 2018](#)). Fourthly, the approach to death education at the end of life is investigated. In this regard, publications related to the role of healthcare personnel and educators in the face of a patient's death are found, as presented in articles such as those by [Bauchner and Fontanarosa \(2016\)](#) or [Holland and Prost \(2021\)](#). Finally, aspects related to training students in death education are discussed. The last cluster focuses on analyzing initial and ongoing training for educators, healthcare personnel, social workers, etc.,



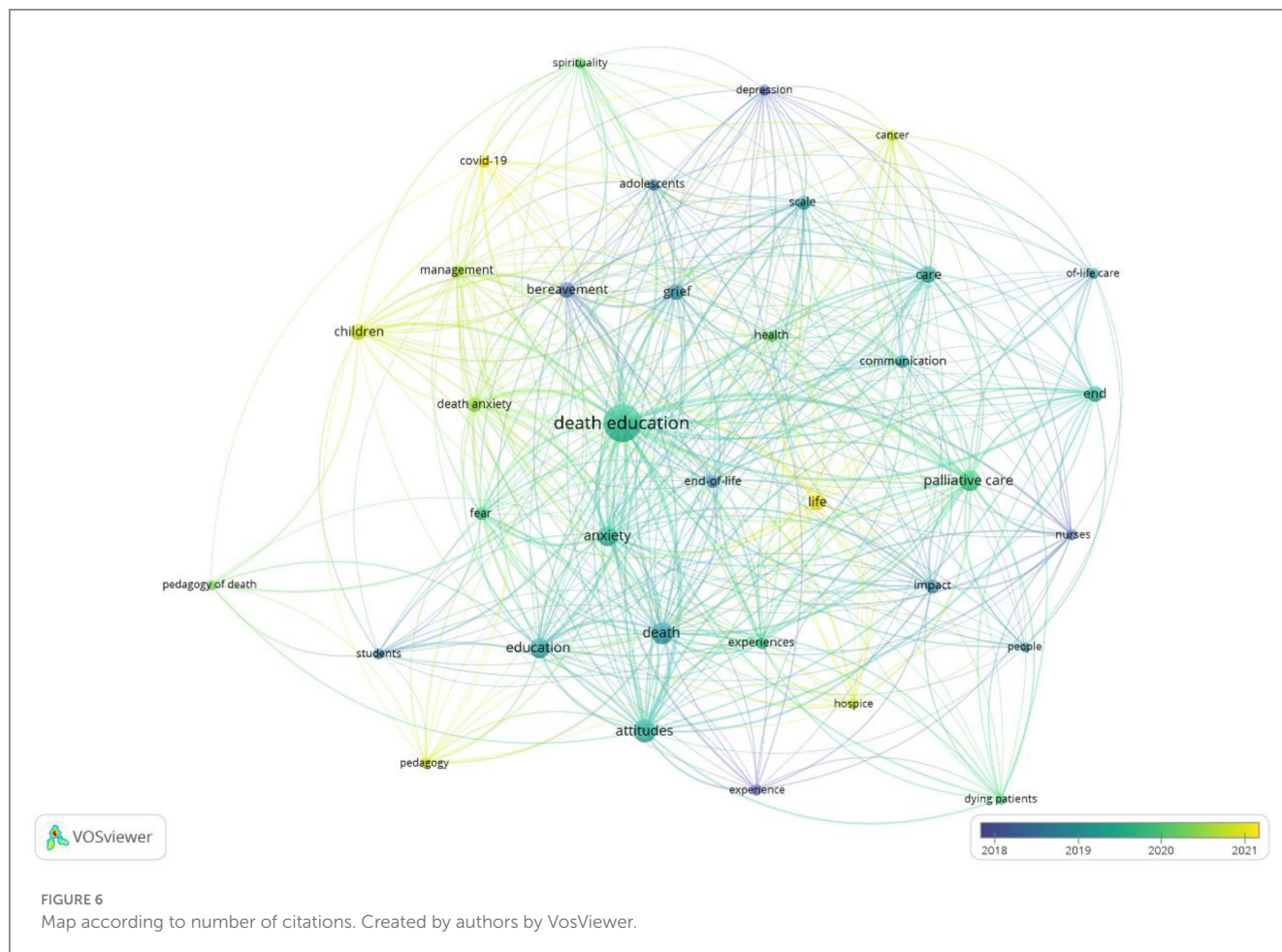
related to death education, as examined by Ramos-Pla et al. (2023) or Pedrero-García (2019).

It should be noted that the pedagogy of death has undergone a remarkable evolution during the COVID-19 pandemic, reflecting significant changes in the focus and topics of study. Between 2010 and 2017, terms related to the pedagogy of death focused on aspects such as death anxiety, death education, mental health and grief. However, from 2018 to 2023, a shift toward more specific areas has been observed, such as death education, the concept of death in general, and a particular focus in China, which relates to how death pedagogy has been addressed during the pandemic in that country. An interesting aspect is the focus on death education in children, where keywords such as “death education,” “death anxiety,” “grief” and “spirituality” have been highlighted. This suggests that there has been a conscious effort by educators and researchers to address the issue of death in a way that is more accessible and understandable to younger people, especially in a context as challenging as that of COVID-19. In other words, COVID-19 has driven an evolution in the pedagogy of death, highlighting the importance of education on this topic in contexts of grief and anxiety, especially in children, and opening new lines of research that seek to

better understand how to face and teach about death in times of crisis.

This study has some limitations. First, it relies solely on the Web of Science (WoS) database, which may limit the diversity of the literature reviewed. Other databases may contain relevant research that was not included. Second, although it is mentioned that there are similar studies, the criteria for inclusion and exclusion of documents vary. This can affect the comparability of the results and the completeness of the analysis. In addition, the study covers a specific period (2010–2023), which means that previous research that could have influenced the development of the pedagogy of death is not considered. It is also worth considering the lack of qualitative analysis, since statistical and bibliometric procedures may not capture the richness and complexity of experiences and pedagogical approaches to death, which could be better understood through qualitative methods.

The results obtained show researchers who wish to work on pedagogy of death, the current trends on the subject, as they provide important information for starting new studies. Thus, the new lines of work could be the level of transfer of knowledge on pedagogy of death by students to their corresponding realities. In this way, we could discover if the learning was significant.



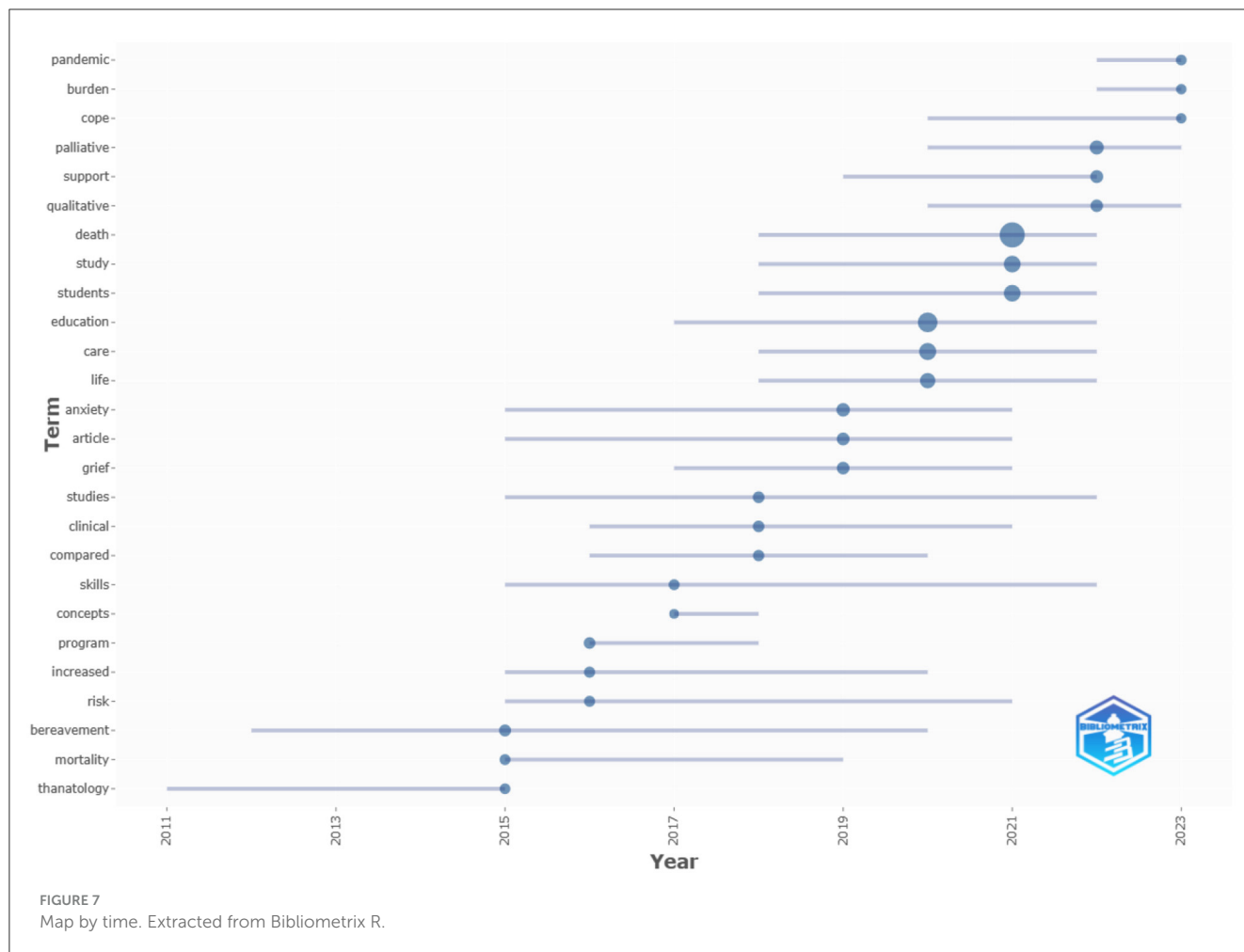
Also, an analysis could be performed to discover if having gone through a pandemic such as the COVID-19 pandemic, could have conditioned the perceptions on pedagogy of death, and its importance. The pedagogy of death is an educational field that still has a long way to go in terms of research. Therefore, it is an emerging line of work to be taken into account for future studies, such as Dark Pedagogy and its relationship with the pedagogy of death and the relationship of this discipline with education for sustainability.

In addition, this research provides practical implications for educators. First, they should consider the inclusion of death pedagogy in the curriculum, providing students with tools to handle the topic of death and grief from an early age and even during adolescence. In addition, it is essential that both educators and health personnel receive continuous training in death pedagogy, so that they can address this issue with sensitivity and knowledge, especially given its impact on the emotional wellbeing of students. Finally, integrating death pedagogy into the programming of education, health, and social work schools can help create a more holistic and coordinated approach to addressing the issue of death in different contexts.

This research is relevant for several reasons. First, the pedagogy of death is a field that has been historically neglected, and early research suggests a growing interest. This study lays the foundations for the legitimization and development of this field

within formal and informal education. Second, since death is an inevitable aspect of life, educating about this topic can contribute significantly to students' emotional wellbeing, helping to destigmatize the conversation around death and foster a culture of openness. Finally, the use of statistical and bibliometric procedures contributes to the creation of a solid evidence base that can be used by future researchers, educators and policy makers to inform changes in education and vocational training.

Finally, the study allows us to conclude that the pedagogy of death has begun to receive significant attention in the academic literature, indicating a change in the interest of researchers. This study is a pioneer in its database (Web of Science) and establishes a framework for future research in this field. In addition, five main areas of focus have been identified in death pedagogy: education on death in adolescents, education in childhood, educational attitudes among health professionals, end-of-life education, and the continuous training of educators on this topic. This suggests a need for diversification in teaching approaches and methods in different educational contexts. The pandemic has driven a remarkable evolution in the pedagogy of death, highlighting the importance of death education in the treatment of grief and anxiety, especially in children. This highlights the relevance of addressing these critical issues in times of crisis. Finally, the production and citations on the pedagogy of death vary significantly between countries, with China, the United States and Spain being the most active in this research.



This international recognition can influence cooperation and the comparison of pedagogical approaches at the global level.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

AR-P: Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. IA: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. PM-M: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

Acknowledgments

Thanks to the DOTS Chair of the University of Lleida for their support in carrying out this study.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declare that no Gen AI was used in the creation of this manuscript.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated

organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

- Affifi, R., and Christie, B. (2019). Facing loss: pedagogy of death. *Environ. Educ. Res.* 25, 1143–1157. doi: 10.1080/13504622.2018.1446511
- Andersson, E., Salickiene, Z., and Rosengren, K. (2016). To be involved - a qualitative study of nurses' experiences of caring for dying patients. *Nurse Educ. Today* 38, 144–149. doi: 10.1016/j.nedt.2015.11.026
- Arslan, D., Akca, N. K., Simsek, N., and Zorba, P. (2014). Student nurses' attitudes toward dying patients in central Anatolia. *Int. J. Nurs. Knowl.* 25, 183–188. doi: 10.1111/2047-3095.12042
- Bauchner, H., and Fontanarosa, P. B. (2016). Death, dying, and end of life. *JAMA* 315, 270–271. doi: 10.1001/jama.2015.19102
- Bronnum-Hansen, H., and Baadsgaard, M. (2012). Widening social inequality in life expectancy in Denmark. A register-based study on social composition and mortality trends for the Danish population. *BMC Public Health* 12:994. doi: 10.1186/1471-2458-12-994
- Cacciatore, J. (2013). Psychological effects of stillbirth. *Semin. Fetal Neonat. Med.* 18, 76–82. doi: 10.1016/j.siny.2012.09.001
- Cacciatore, J., and Flint, M. (2012). ATTEND: toward a mindfulness-based bereavement care model. *Death Stud.* 36, 61–82. doi: 10.1080/07481187.2011.591275
- Campillo Ruiz, E., and Ruiz Arriaza, J. (2017). Educar para la muerte a través de la didáctica de la literatura. *Publ. Didácticas* 82, 648–653.
- Chan, W. C., and Tin, A. F. (2012). Beyond knowledge and skills: self-competence in working with death, dying, and bereavement. *Death Stud.* 36, 899–913. doi: 10.1080/07481187.2011.604465
- Cheng, H. B., Shek, P. K., Man, C. W., Chan, O. M., Chan, C. H., Lai, K. M., et al. (2019). Dealing with death taboo: discussion of do-not-resuscitate directives with chinese patients with noncancer life-limiting illnesses. *Am. J. Hospice Palliat. Care* 36, 760–766. doi: 10.1177/1049909119828116
- Colomo, E. (2016). Pedagogía de la Muerte y proceso de duelo. Cuentos como recurso didáctico. *REICE Revista Iberoamericana sobre Calidad, Eficacia y Cambio en Educación* 14, 1–15. doi: 10.15366/reice2016.14.2.004
- Colomo, E., and Cívico, A. (2018). La necesidad de formación del profesorado en pedagogía de la muerte. *Revista Electrónica Interuniversitaria de Formación del Profesorado* 21, 83–94. doi: 10.6018/reifop.21.1.279961
- Colomo, E., Cívico, A., and Poletti, G. (2023). Analysis of scientific production on pedagogy of death in the scopus. *Electron. J. Res. Educ. Psychol.* 21, 223–250. doi: 10.25115/ejrep.v21i59.7226
- del Arco, I., Mercadé-Melé, P., Ramos-Pla, A., and Flores-Alarcía, Ò. (2022). Bibliometric analysis of the flipped classroom pedagogical model: trends and strategic lines of study. *Front. Educ.* 7:1022295. doi: 10.3389/feduc.2022.1022295
- Fauzi, M. A., Abdul Rahman, A. R., and Lee, C. K. (2023). A systematic bibliometric review of the United Nation's SDGs: which are the most related to higher education institutions? *Int. J. Sustain. High. Educ.* 24, 637–659. doi: 10.1108/IJSHE-12-2021-0520
- Fonseca, L. M., and Testoni, I. (2011). The emergence of thanatology and current practice in death education. *Omega* 64, 157–169. doi: 10.2190/om.64.2.d
- Friesen, H., Harrison, J., Peters, M., Epp, D., and McPherson, N. (2020). Death education for children and young people in public schools. *Int. J. Palliat. Nurs.* 26, 332–335. doi: 10.12968/ijpn.2020.26.7.332
- Gillan, P. C., van der Riet, P. J., and Jeong, S. (2014). End of life care education, past and present: a review of the literature. *Nurse Educ. Today* 34, 331–342. doi: 10.1016/j.nedt.2013.06.009
- Guerra, J. R., Zeballos, J., Angulo, C. H., Goosdenovich, C. H., Borja, M. A., and Campoverde, P. R. (2018). Educación emocional. Abordaje del proceso de la muerte en la escuela. *Rev. Cubana Investig. Bioméd.* 37, 1–9.
- Harrad, R., and Sulla, F. (2018). Factors associated with and impact of burnout in nursing and residential home care workers for the elderly. *Acta Biomed.* 89, 60–69.
- Herrán, A. (2015). *Pedagogía radical e inclusiva y educación para la muerte*. Salamanca: Fahrenheit.
- Herrán, A. (2020). La Pedagogía de la muerte en el contexto de la pandemia: Una mirada radical e inclusiva. *Rev. Electrón. Educ.* 24(Suppl. 1), 12–15. doi: 10.15359/ree.24.S.4
- Herrán, A., Herrero, P. R., González, J. J. C., and Jiménez, R. (2021). Do adolescents want death to be included in their education? *Soc. Psychol. Educ.* 24, 857–876. doi: 10.1007/s11218-021-09635-w
- Holland, M. M., and Prost, S. G. (2021). The end of life within social work literature: a conceptual review. *Omega* 82, 668–691. doi: 10.1177/0030222819835650
- Launer, L. J., Hughes, T. M., and White, L. R. (2011). Microinfarcts, brain atrophy, and cognitive function: the Honolulu Asia Aging Study Autopsy Study. *Ann. Neurol.* 70, 774–780. doi: 10.1002/ana.22520
- Lysgaard, J. A., and Bengtsson, S. (2020). Dark pedagogy – speculative realism and diffuse plaque associations with memory in non-cognitively impaired elderly. *J. Alzheimers Dis.* 53, 1641–1652. doi: 10.3233/JAD-160365
- Martínez-Heredia, N., and Bedmar, M. (2020). Impacto de la producción científica acerca de la educación para muerte: Revisión bibliométrica en Scopus y Web of Science. *Revista Iberoam. Educ.* 82, 65–79. doi: 10.35362/rie8223553
- Mc Loughlin, E. (2023). Dissecting the ethics of choreographed encounters with animal death in the zoo: a posthumanist lens on dark pedagogy. *Environ. Educ. Res.* 30, 1061–1075. doi: 10.1080/13504622.2023.2286931
- McAfee, C. A., Jordan, T. R., Cegelka, D., Polavarapu, M., Wotring, A., Wagner-Greene, V. R., et al. (2020). COVID-19 brings a new urgency for advance care planning: implications of death education. *Death Stud.* 91–96. doi: 10.1080/07481187.2020.1821262
- McClatchey, I. S., and King, S. (2015). The impact of death education on fear of death and death anxiety among human services students. *Omega* 71, 343–361. doi: 10.1177/0030222815572606
- Menzies, R. E., Zuccala, M., Sharpe, L., and Dar-Nimrod, I. (2018). The effects of psychosocial interventions on death anxiety: a meta-analysis and systematic review of randomised controlled trials. *J. Anxiety Disord.* 59, 64–73. doi: 10.1016/j.janxdis.2018.09.004
- Mutto, E. M., Errázquin, A., Rabhansl, M. M., and Villar, M. J. (2010). Nursing education: the experience, attitudes, and impact of caring for dying patients by undergraduate Argentinian nursing students. *J. Palliat. Med.* 13, 1445–1450. doi: 10.1089/jpm.2010.0301
- Noonan, K., Horsfall, D., Leonard, R., and Rosenberg, J. (2016). Developing death literacy. *Prog. Palliat. Care* 24, 31–35. doi: 10.1080/09699260.2015.1103498
- Ortego, C., Aparicio, M., Paz, M., Torres, B., Sarabia, R., Álvarez, L., et al. (2016). Tales: a tool to address death with children. *J. Hospice Palliat. Nurs.* 18, 429–435. doi: 10.1097/NJH.0000000000000268
- Pacheco-Mendoza, J., and Alhuay-Quispe, J. (2019). Unidades de Bibliometría, espacios necesarios para el monitoreo de producción científica en la universidad moderna. *Rev. Habanera Cienc. Méd.* 18, 376–380.
- Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., et al. (2021). PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews. *BMJ* 372:160. doi: 10.1136/bmj.n160
- Pedrero-García, E. (2019). Educación para la Salud y pedagogía de la muerte: percepciones y demandas del profesorado universitario en España. *Interface* 23:e180404. doi: 10.1590/interface.180404
- Pedrero-García, E. (2020). Pedagogía de la muerte: propuesta de normalización en el sistema educativo español. *Espacios* 41, 25–37.
- Phan, H. P., Chen, S. C., Ngu, B. H., and Hsu, C. S. (2023). Advancing the study of life and death education: theoretical framework and research inquiries for further development. *Front. Psychol.* 14:1212223. doi: 10.3389/fpsyg.2023.1212223

- Raccichini, M., Biancalani, G., Franchini, L., Varani, S., Ronconi, L., and Testoni, I. (2022). Death education and photovoice at school: a workshop with Italian high school students. *Death Stud.* 47, 279–286. doi: 10.1080/07481187.2022.2052206
- Ramos-Pla, A., and Camats, R. (2018). Fundamentos para una pedagogía preventiva sobre la muerte en la escuela. *Rev. Comp. Educ.* 29, 527–538. doi: 10.5209/RCED.53448
- Ramos-Pla, A., and Camats, R. (2019). Consideraciones generales respecto a la necesidad de practicar una pedagogía sobre la finitud humana en la educación formal. *Estudio Caso Educ.* 55, 273–290. doi: 10.5565/rev/educar.950
- Ramos-Pla, A., del Arco, I., and Espart, A. (2023). Pedagogy of death within the framework of health education: the need and why teachers and students should be trained in primary education. *Heliyon* 9:e15050. doi: 10.1016/j.heliyon.2023.e15050
- Ramos-Pla, A., del Arco, I., and Flores, Ò. (2021). University professor training in times of COVID-19: analysis of training programs and perception of impact on teaching practices. *Educ. Sci.* 11:684. doi: 10.3390/educsci11110684
- Ramos-Pla, A., Gairín, J., and Camats, R. (2018). Principios prácticos y funcionales en situaciones de muerte y duelo para profesionales de la educación. *Rev. Iberoam. Sobre Calidad Eficacia Cambio Educ.* 16, 21–33. doi: 10.15366/reice2018.16.1.002
- Renaud, S. J., Engarhos, P., Schleifer, M., and Talwar, V. (2015). Children's earliest experiences with death: circumstances, conversations, explanations, and parental satisfaction. *Infant Child Dev.* 24, 154–174. doi: 10.1002/icd.1889
- Rodríguez Herrero, P., Herrán, A., Pérez Bonet, G., and Sánchez-Huete, J. C. (2020a). What do teachers think of death education? *Death Stud.* 46, 1518–1528. doi: 10.1080/07481187.2020.1817176
- Rodríguez Herrero, P., Herrán, A., and Yubero, V. M. (2020b). The inclusion of death in the curriculum of the Spanish Regions. *Compare* 52, 37–55. doi: 10.1080/03057925.2020.1732192
- Sallnow, L., Smith, R., Ahmedzai, S. H., Bhadelia, A., Chamberlain, C., Cong, Y., et al. (2022). Report of the Lancet Commission on the Value of Death: bringing death back into life. *Lancet* 399, 837–884. doi: 10.1016/S0140-6736(21)02314-X
- Selva-Pareja, L., Ramos-Pla, A., Mercadé-Melé, P., and Espart, A. (2022). Evolution of scientific production on health literacy and health education—a bibliometric analysis. *Int. J. Environ. Res. Public Health* 19:4356. doi: 10.3390/ijerph19074356
- Sliter, M. T., Sinclair, R. R., Yuan, Z., and Mohr, C. D. (2014). Don't fear the reaper: trait death anxiety, mortality salience, and occupational health. *J. Appl. Psychol.* 99, 759–769. doi: 10.1037/a0035729
- Sonbul, Z. F. (2021). A bibliometric analysis of death education research: 1970–2021. *J. Theory Pract. Educ.* 17, 98–113. doi: 10.17244/eku.916222
- Stahlschmidt, S., and Stephen, D. (2020). *Comparison of Web of Science, Scopus and Dimensions Databases*. Report to Kompetenzzentrum Bibliometrie. Hannover: DZHW.
- Stone, P. (2013). Dark tourism scholarship: a critical review. *Int. J. Cult. Tour. Hosp. Res.* 7, 307–318. doi: 10.1108/IJCTHR-06-2013-0039
- Stylianou, P., and Zembylas, M. (2018). Dealing with the concepts of “grief” and “grieving” in the classroom: children's perceptions, emotions, and behavior. *Omega* 77, 240–266. doi: 10.1177/0030222815626717
- Testoni, I., Iacona, E., Fusina, S., Floriani, M., Crippa, M., Maccarini, A., et al. (2018). “Before I die I want to . . .”: An experience of death education among university students of social service and psychology. *Health Psychol. Open* 5:2055102918809759. doi: 10.1177/2055102918809759
- Testoni, I., Palazzo, L., De Vincenzo, C., and Wieser, M. A. (2020). Enhancing existential thinking through death education: a qualitative study among high school students. *Behav. Sci.* 10:113. doi: 10.3390/bs10070113
- Tsai, H. L. (2021). Bibliometric analysis of publications on death education from the web of science core collection® published from 2003 to 2020. *Lingdong J. Gen. Educ. Res.* 9, 1–20.
- Venkatasalu, M. R., Kelleher, M., and Shao, C. H. (2015). Reported clinical outcomes of high-fidelity simulation versus classroom-based end-of-life care education. *Int. J. Palliat. Nurs.* 21, 179–186. doi: 10.12968/ijpn.2015.21.4.179
- Villaceros, M., Bermejo, J. C., and Magaña, M. (2016). Duelos familiares o colectivos. Diseño de una escala de actitudes hacia los niños en procesos de duelo. *Rev. Psicoterapia* 27, 167–179. doi: 10.33898/rdp.v27i104.64
- Yang, S., and Park, S. (2017). A sociocultural approach to children's perceptions of death and loss. *Omega* 1, 1–25. doi: 10.1177/0030222817693138
- Zhang, X., Xie, X., and Xiao, X. (2023). Effects of death education interventions on cancer patients in palliative care: a systematic review and meta-analysis. *Death Stud.* 16, 99–111. doi: 10.1080/07481187.2023.2233450