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Suicide postvention for staff and students on university campuses: A scoping review

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Suicide postvention for staff and students on university campuses: A scoping review

AUTHORS

Sophia-Lorraine Allie[1] Jason Bantjes[2,3] Karl Andriessen[4]

Corresponding author: Sophia-Lorraine Allie, email: sophialorraine.allie@gmail.com

1. Department of Psychology, Faculty of Arts and Social Sciences, Stellenbosch University, Stellenbosch, South Africa

2. Alcohol, Tobacco and Other Drug Research Unit, South African Medical Research Council.

3. Department of Global Health, Faculty of Medicine and Health Sciences, Stellenbosch University

4. Centre for Mental Health, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Australia

ABSTRACT

Objective: To examine current knowledge about suicide bereavement and postvention interventions for staff and students at universities.

Design: Scoping review

Data sources and eligibility: We conducted systematic searches in 12 electronic databases, hand searched citations and consulted with library experts during the period of September 2021 and August 2022. Eligible studies were screened independently by two reviewers for inclusion using a checklist developed for this purpose. Only studies published in English were included.

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Data extraction and synthesis: Screening was conducted by two independent reviewers following a 3-step article screening process. Biographical data and study characteristics were extracted using a data extraction form and synthesised.

Results: Our search strategy identified 7691 records from which 3170 abstracts were screened. We assessed 29 full texts and included 17 articles for the scoping review. All studies were from high-income countries (United Sates of America, Canada, United Kingdom). The review identified no postvention intervention studies on university campuses. Study designs were mostly descriptive quantitative, or mixed methods. Data collection and sampling were heterogeneous.

Conclusion: Staff and students are in need of support measures due to the impact of suicide bereavement and unique nature of the university context. There is a need for further research to move from descriptive studies to focus on intervention studies, particularly university campuses in low-and-middle-income countries.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This scoping review was based on robust methodology for conducting scoping reviews.
- The selection process of eligible articles was conducted independently by two researchers.
- The review focused on postvention interventions for both staff and students on university campuses globally.
- The review provides a synthesis and critical examination of the research and practice in the area of postvention
- The scoping review was limited to peer-reviewed articles and primary studies published in English.

INTRODUCTION

An estimated 700 000 people die by suicide each year, with suicide as the fourth leading cause of death among 15 to 29-year-olds globally (1). Death by suicide has a wide-reaching impact on the community. Meta-analysis has indicated that

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approximately one in five people have experienced a suicide of someone close during their lifetime, and one in 20 in any given year (2). Studies have found that between six and 135 people are exposed to a single suicide (3, 4). A suicide does not only negatively affect family members and friends, who are considered to be in the immediate circle, it also affects neighbours, acquaintances, passers-by or professionals who knew the person (3).

When a fellow student dies, it may be the first time a student encounters the death of a peer compared to the death of a family member. This is accompanied by a range of emotional responses such as shock, depression, fear, anger and loneliness (5). Internal and external factors such as gender, sociocultural background, religious factors and belief in the afterlife contribute to the emotional responses of students following the death of a friend or family member (5, 6). A suicide on campus is a community trauma due to the unique context of a university setting where students attend the same classes, extracurricular activities, and live together. The impact of the suicide on campus is therefore considered to be more widespread than a suicide in the general population (7, 8). Students bereaved by suicide face a heightened risk for mental disorders, substance abuse and suicide (9). It is important to note that suicide bereavement can have a negative impact on physical and psychological well-being over the life-course post the period of initial loss. (10).

Given that students spend most of their time at universities, staff can be considered among the bereaved who are affected by student suicide. Teachers bereaved by suicide reported significant distress and lack of support (11, 12). When a student dies, the place of work also becomes the place of loss for teachers who are now also responsible for teaching grieving students (13). Suicide bereavement significantly impacts the interpersonal relationships (partners, close friends and family) of bereaved staff and students. This includes feeling discomfort over the death due to stigma or taboo, and a loss of social confidence leading to social withdrawal. There is also the shared bereavement experience which creates closeness, although attachments are also influenced by the fear of further losses (12, 14).

Suicide prevention strategies recommend providing postvention, which is defined as the care and support activities offered to those who have been bereaved by suicide to promote recovery and prevent adverse outcomes regarding their grief and mental

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health (15-17). Five systematic reviews have been conducted on postvention interventions to date (18-22). McDaid and colleagues (20) found one study that looked at postvention interventions in three high schools and one study among undergraduate students. Szumilas and Kutcher (18) in their systematic review found six postvention intervention studies in both primary and secondary schools. The most recent systematic reviews have been by Andriessen and team both conducted in 2019 (22, 23). One of these reviews included controlled studies that evaluated the effectiveness of interventions for people bereaved by suicide (22).

Although the above reviews have evaluated postvention interventions in general, postvention interventions for university students on university campuses have not been studied. This scoping review aimed to answer the following question: *"What is known about suicide bereavement and postvention interventions for staff and students at universities?"* The term universities will be used to refer to all higher education institutions (HEI's). The objectives of the review were to: (i) describe the impact of suicide bereavement on staff and students at universities; (ii) identify institutional responses to suicide bereavement at universities; (iii) describe postvention interventions at universities.

METHODS

This scoping review was conducted using the Joanna Briggs Institute (JBI) guideline for scoping reviews (23) which builds on the seminal work of Arksey and O'Malley (24) as well as Levac and colleagues (25). The review is reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) checklist (26) which is congruent with the JBI guidelines. Studies were included or excluded based on the criteria in Table 1.

Table 1. Inclusion and exclusion criteria

Inclusion
i. The study population consists of university/HEI students and staff
ii. The study report data on suicide bereavement or postvention interventions for university/HEI students or staff
iii. The study used qualitative, quantitative or mixed methods as primary research
iv. The study was published in English as a peer-reviewed paper

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Exclusion
i. The study did not involve university/HEI students or staff
ii. The paper does not report data suicide bereavement or postvention interventions
iii. The study focuses on general bereavement which includes bereavement by suicide where it is not possible to extract information specific to suicide bereavement
iv. The study used other methods that were not primary research such as opinion pieces, posters, book chapters or systematic reviews

Patient and public involvement

Patients or the public were not involved in the design or conduct of this scoping review. The experiences of the authors working with university students informed the need to explore the review question.

Search Strategy

As recommended by the JBI guideline (23), a three-step search strategy was utilised. Firstly, the first author (SA) conducted a preliminary search of Academic Search Premier and PubMed to identify relevant articles in August 2021. SA consulted two expert librarians at [blinded for review] University, to develop a comprehensive search strategy using the words contained in the titles and abstracts of relevant articles and index terms used to describe articles. The search string comprised a variety of search terms connected by Boolean operators, MeSH terms, and synonyms and variant spellings. All identified keywords and index terms were included and this search string (see Table 2) was used across the following databases: Academic Search Premier, Africa-Wide Information, CINAHL, Health Source: Nursing/Academic Edition, MEDLINE, PsycINFO, PsycARTICLES, SocINDEX through the EBSCOHOST platform; Cochrane, PubMed, SCOPUS and Web of Science. In PubMed the following words were filtered using title/abstract: suicide[tiab], (postvention[tiab] , “psychosocial intervention”[tiab], "post suicide"[tiab]. The reference lists of included full-text articles as well as systematic reviews were hand searched for additional sources.

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Table 2. Search string used across databases

Search string
("college student" OR "university student" OR undergraduate OR postgraduate OR lecturer OR faculty OR "administrative staff" OR "administrative personnel" OR "support staff" OR "educational personnel") AND suicide AND (postvention OR intervention OR bereavement OR grief OR debrief OR debriefing OR "crisis intervention" OR "psychosocial intervention" OR "support after suicide" OR "survivors after suicide" OR "post suicide") AND (university OR college OR "institution of higher learning" OR campus OR "higher education").

Study selection

SA conducted the searches in September 2021 and updated them in August 2022. The searches were not limited by date of publication but to publications in English. We followed two independent screening levels for selecting studies for inclusion in the review. The first level was title and abstract review and the second level, a full-text review. For the first level of review, Researcher SA uploaded all identified citations from the database searches into EndNote (27) and removed duplicates. Thereafter, SA imported all citations into Rayyan QCRI (28) and removed duplicates. Two reviewers (SA and EB) screened and selected titles and abstracts independently according to the inclusion and exclusion criteria. Twenty-nine (n=29) full-texts articles were assessed against the inclusion and exclusion criteria with 17 articles included in the final review. Ten disagreements on study selection were resolved through a consensus discussion. Figure 1. summarises the search and selection process (29).

Data extraction

The researchers developed and piloted a Microsoft Excel data extraction form based on JBI data extraction template (23, 24), for extracting information from each study. Researcher SA extracted information on author, year, journal, affiliation, country of origin, country income group, aims, population characteristics, core data on

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methodology and key findings from each of the 17 included articles. In line with the review aims, information on postvention interventions, definitions of postvention, impact of suicide bereavement, institutional responses, practice implications and recommendations for further development were also extracted. Supplementary Table 1. provides an overview of the included studies.

Data synthesis

Data was summarised into a descriptive and narrative synthesis to answer the following questions from university settings: what postvention interventions were available, what was the impact of suicide bereavement and how universities responded suicide deaths and subsequent bereavement. Results are presented firstly as a descriptive numerical summary (25) (study characteristics) and then key findings from the different study designs.

RESULTS

Study characteristics

The included articles were published between 1989 and 2021 (Supplementary Table 1.). Most articles (n=8) were from the USA (31, 32, 41, 49, 58, 61, 64), seven articles from the UK (30, 34-37, 53, 55) and two articles from Canada (43, 70). The study designs included ten quantitative studies (41, 43, 49, 53, 55, 58, 61, 64, 68, 70) involving the use of surveys (53, 55, 61, 64, 68); two qualitative studies (30, 31) which collected data using semi-structured interviews and five mixed-methods designs using a combination of questionnaires,(32, 34-37) interviews, (32, 37) and open-ended qualitative questions (34-37). Studies that were quantitative or had a quantitative element, used a range of existing outcome measures or developed measures to capture data on grief reactions (32, 43, 53, 55, 58, 70), impact of suicide bereavement (34-37, 41, 43, 49, 53, 55, 58, 61, 64, 68, 70) and suicidal behaviours (49).

Most authors (n=13) identified participants bereaved by suicide through surveys. Two studies (32, 68) recruited students as participants to evaluate their personal responses to those bereaved by suicide. The other two studies (30, 31) were qualitative in nature and staff participants were purposively selected as those exposed to student suicide.

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All the participants in the studies, were adults at HEI's and ranged between 18 and 70 years in age. Most of the studies (n=14), except one, (32) had more female participants than male participants. Two of the studies (31, 58) did not state the gender profile of the participants. Not all studies reported on the participants' relationship to the deceased (31, 32, 41, 68). Studies described the participants' suicide bereavement as almost an even split between relatives and non-relatives (34-37, 49, 53, 55, 58), apart from one study, (30) where the participants were bereaved by non-relatives. In other studies where the relationship with the deceased was described, it was unclear if this was due to suicide bereavement (43, 61, 64, 70). Many of the articles focused on the perspectives of students (n=9) (32, 41, 43, 49, 58, 61, 64, 68, 70) or both staff and student perspectives (n=6) (34-37, 53, 55) with only two (30, 31) focusing exclusively on the perspectives of staff. Most of the articles (n=16) explored the concept of suicide bereavement. We found no published articles which investigated postvention interventions in university settings.

Key findings from included articles

Supplementary Table 1. provides a summary of the key findings of the 17 included articles. The findings are presented under the headings of: findings from qualitative studies, findings from quantitative studies and findings from mixed methods studies.

Findings from qualitative studies

The two qualitative studies focused on the experiences of staff (30, 31) using phenomenology (31) and grounded theory (30). Staff reported physical and psychological responses that impacted their personal and professional lives. Firstly, there were the practical tasks to take care of following the death of a student, such as packing up belongings, and initiating administrative processes. Some staff reported that they began to question themselves at perhaps having missed something with the students or not having done more to prevent the suicide (30). There were varying views on support both received and accessed with staff citing that institutional processes were unsupportive to staff in a culture that values student mental well-being over staff well-being (30). Challenges identified by university administrators in responding to student suicide was the lack of postvention training received as part of their role. They also reported that it was challenging to communicate to the university community about the student death by suicide in a timeous manner before this is

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communicated on social media platforms often before the family has been officially informed. University administrators spoke about their desire to honour the deceased student by having memorials on campus, while at the same time minimising the risk of suicide contagion on campus (31).

Findings from quantitative studies

Students bereaved by suicide experienced higher levels of general grief reactions compared to those bereaved by other means such as natural causes or accidents (58, 70). In one study, the suicide bereaved were rated with a poorer prognosis for overall recovery (61). Some participants had increased suicidal ideation or attempted suicide following their bereavement and most of them had not sought help for any episode of self-harm or suicidal ideation (55).

For students bereaved by suicide, there is a need to understand the death and the reasons that led up to the deceased not wanting to continue living (49, 58, 70). It is as if they needed this explanation to make sense of the suicide. They also felt responsibility that they could have done something to prevent the suicide, and this led to feelings of guilt (49, 53, 58, 70). Some respondents felt like the deceased was punishing them by dying and felt rejected by the deceased (58, 70). The suicide bereaved had a perception that others blamed them for the death of their loved one (49).

Students bereaved by suicide experience shame and embarrassment which sets them apart from other students who mourn non-suicidal deaths (58, 70) They have more perceived stigma (49, 53, 70) and often felt that the other people, especially friends, did not understand their feelings about the suicide death and did not want to talk to others about the death, putting a strain on relationships (49, 53). One study found that those bereaved by suicide were less likely to receive informal support compared to those bereaved by natural causes (55). Other respondents felt they did not receive support and that others were unhelpful (61, 64).

Findings from mixed-method studies

As a result of their bereavement experience, suicide became an option to alleviate distress for the participants (34). The participants suddenly had a new awareness that

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in a state of extreme distress, they, or anyone they knew, could be vulnerable to suicide (34). Due to what the respondents had experienced, some expressed a conviction that they would not die by suicide.

Participants reported that they avoided using the word 'suicide' as it made other people feel uncomfortable and concealed the cause of death for the same reasons. They also felt the social pressure to no longer be affected by the suicide and so they learnt to hide their expressions of grief (35, 37). Grief following suicide bereavement impacted on participants' abilities to function in the workplace. Participants reported feeling profound sadness, confusion, anxiety, and poor concentration. This led to poor work quality, difficulty working in a team and the loss of self-confidence (36). Within work settings, suicide bereaved staff and students described institutional practices that were unsupportive to their grieving process such as systems for taking compassionate leave, additional work responsibilities because of taking time off and difficulty catching up due to decreased work capacity (36). A small group of respondents in this study by Pitman and colleagues (36) cited a positive impact of suicide bereavement. They stated that they used work as a distraction to cope with their emotions and it was also a way to make the deceased proud of them. Furthermore, the experience of suicide bereavement motivated some to change careers to careers related to mental health or caring for vulnerable persons.

There are some respondents who reported that they received informal support from family and friends and said this support was valuable in coping with their grief (35). Aspects that participants found helpful were receiving emotional support, having an opportunity to talk about the deceased openly and not being treated differently. Responses that were helpful were those that offered reassurance, tangible support and stayed away from giving advice (35, 36). Participants also expressed the need for professional support, but very few accessed formal support (35).

Staff and students bereaved by suicide felt that the way that support efforts could be enhanced would be to offer support proactively and consistently over time, especially practical support. They were also able to outline their reasons for not seeking support. These include: fear of asking for support, negative experiences of previous attempts

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to access support, feeling that support would not benefit them and fearing judgement at their need for psychological support (35).

Discussion

We identified and appraised 17 articles that presented various aspects of suicide bereavement among university staff and students. Although we primarily sought out to explore both suicide bereavement and postvention interventions among staff and students at universities, we found literature that only focuses on suicide bereavement among staff and students conducted in high-income countries. What the results of this review mirror is the trend in postvention literature where 93% of research is concentrated in high-income countries particularly (USA, UK, Canada, Australia and Sweden) (71) when 77 percent of global suicides occur in low-and-middle-income countries (1). This indicates a gap in research and the need for more country specific studies to understand how people in different environments may experience the impact of suicide bereavement and what the needs for support may be in a specific context like a university. The experiences of staff and students within high-income country contexts, may vary vastly from experiences of staff and students in low-and-middle-income contexts and it cannot be assumed that these experiences and contexts are the same.

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A systematic mapping of postvention research over the last 50 years (71) has identified the need for more intervention studies within postvention research. This gap was also highlighted in this review as no studies on postvention interventions at universities were identified. Studies that have reviewed postvention interventions have been conducted among adolescents and schools (72-75). All the studies included in this review were descriptive in nature and most (n=15) were quantitative or mixed methods in nature. There was a gendered component to the studies that reported the gender profile of participants, as the majority had more female than male respondents which is well supported by the suicide bereavement literature (76, 77). Where the relationship to the deceased was described, there was very little difference between those bereaved by relatives versus those bereaved by non-relatives as the participants seemed to experience similar expressions of distress. Postvention literature has argued that further studies should look at the experiences of suicide bereavement of non-relatives (71).

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Staff and students bereaved by suicide experience higher levels of grief reactions when compared to bereavement by non-suicide deaths. This is further supported by Hay and colleague's (78) systematic review which found that grief symptoms can negatively impact on the academic and social life of bereaved students. Some participants had attempted suicide following their bereavement experience (53, 55). This is consistent with the recommendations to reduce student suicide by providing support for staff and students bereaved by suicide as with other populations (79, 80). The findings from this review demonstrate how staff have been marginalised from this research with a focus on university students. Only two studies (30, 31) focused exclusively on the experiences of staff. This bias towards studying the experiences of students is understandable, given that universities are set up for students, however, it is important to include staff as they have important support needs also.

An interesting finding was that not all impacts of suicide bereavement were negative. Some participants were motivated to have a career change into more helping professions (36). What was clear from these studies is that staff and students bereaved by suicide experienced support as both helpful and unhelpful. Informal support from family and friends seemed to be the most valuable type of support received. There was a feeling though, from those bereaved that they were a burden to family and friends and so wanted to access professional support but never did so. This suggests that although those bereaved by suicide need formal support, there are still some barriers in accessing this support. Some participants articulated a few of these barriers such as fear of asking for support, doubting the usefulness of support, and negative experiences when they tried to access support in the past (35). This creates an opportunity for support measures to be enhanced and access to support improved.

What seems significant to note about those bereaved by suicide is the heightened sense of the need to understand the death and reasons for the suicide to make sense of what had occurred (49, 58). There were many feelings of guilt whether they could have done something to prevent the suicide. Participants also felt that others blamed them for the death of the deceased. This was especially true for staff who felt that they had missed something or done something wrong (30, 31). This raises questions about the responsibilities and expectations placed on staff and whether these are realistic.

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The findings of this scoping review need to be considered in light of some limitations. The quality of individual studies included in the review was not assessed. Data synthesis was limited to full-text peer-reviewed articles available in English.

Conclusion

This review set out to examine suicide bereavement and postvention interventions on university campuses. The review identified studies with a focus on suicide bereavement but no studies on postvention interventions on university campuses. There is a need for postvention research to move beyond descriptive studies to focusing on interventions. All the studies included in the review highlighted the current trend where the majority of postvention research is concentrated in high-income-countries. More research is needed in low-and-middle-income countries, particularly in contexts like university campuses. This review highlights how support measures for staff and students bereaved by suicided need to be strengthened due to the significant impact suicide bereavement has on their physical and psychological health as well as occupational functioning.

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AUTHOR CONTRIBUTIONS

This scoping review was developed by the intellectual contributions of all the authors. All authors were involved in the developing of the review question and conceptualising the approach. SA developed and tested search terms in consultation with subject librarians. SA in consultation with JB, KA and EB developed the data extraction form. SA and EB reviewed all articles for inclusion and no discrepancies referred to third reviewer. KA and JB contributed to drafting and reviewing the manuscript prior to submission.

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COMPETING INTERESTS STATEMENT

The authors declare that they have no competing interests.

ETHICS APPROVAL

Not required

PATIENT CONSENT FOR PUBLICATION

Not required.

Word Count: 3833

Legend

Table 1. Inclusion and exclusion criteria

Table 2. Search string used across databases

Figure 1. PRISMA Diagram

Supplementary Table 1. Articles included in the review

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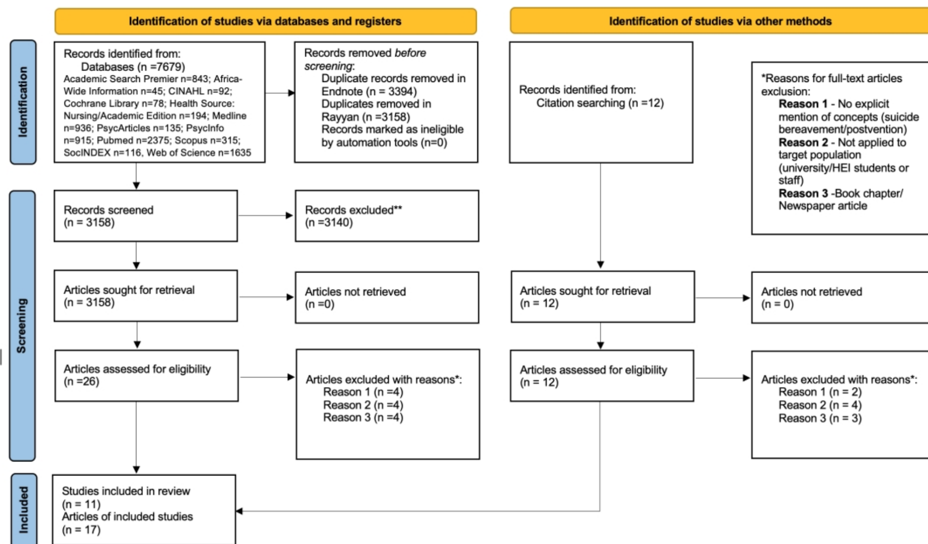

Figure 1. PRISMA Diagram

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Supplementary Table 1. Articles included in the review

Authors (year) Location	Design and methods	Participants	Instrument/Measures	Key Findings
		QUALITATIVE STUDIES		
Causer et al (2021) (30) UK	Qualitative Grounded theory	*N* = 19 Staff at HEI's: *n* = 8 Male (42%) *n* = 11 Female (58%)	Survey and Interviews developed and conducted by the authors.	Staff described how in "bearing witness" to student suicide that all subsequent experiences were shaped. This included practical tasks immediately following the death by suicide, physical, emotional and psychological changes and experiences of support.
Rompalo et al (2021) (31) USA	Qualitative Phenomenology	*N* = 8 student affairs administrators Gender not stated	Online interviews	Challenges around the lack of postvention training for HEI administrators, the difficulty of managing notifications about the student death before it gets announced on social media and the balance of remembering the student with a memorial while at the same time minimising the risk of suicide contagion.

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		MIXED METHOD STUDIES		
Allen et al (1993) (32) USA	Mixed methods	*n* = 30 male (50%) *n* = 30 female (50%) undergraduate university students. Mean age 21 years. 75% Caucasian, 15% African-American, 9% other ethnicity	State-Trait Anxiety Inventory and interview (33)	Those bereaved by suicide are perceived to be different from individuals bereaved by other causes of death. Individuals bereaved by suicide are also viewed as more psychologically disturbed and more able to prevent the deaths compared to accidental or natural deaths.
*Pitman et al (2017b) (34) UK	Mixed methods (Quantitative cross-sectional; Qualitative descriptive)	*N* = 429 staff and students at British HEI's bereaved by suicide: Male: not stated Female: 82% (number not stated) Mean age: 25.3 years	Online questionnaire developed by the authors with 119 closed quantitative questions and 20 open ended qualitative questions. one out of 20 questions were the focus of this report.	Following their experiences of suicide bereavement, the respondents saw suicide as a tangible option, identified their shared vulnerability to suicide and made personal determination to avoid dying by suicide.
*Pitman et al (2018a) (35) UK	Mixed methods (Quantitative cross-sectional; Qualitative descriptive)	*N* = 420 staff and students at British HEI's bereaved by suicide:	Online questionnaire developed by the authors with 119 closed quantitative questions and 20 open ended qualitative questions.	In the quantitative responses, the majority of the participants (75%) reported receiving informal support from friends. 41% of those who received

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		n = 71 Male(17%) *n* = 349 Female (83%)	2 out of 20 questions were the focus of this report.	support also received support from a mental health professional. The participants were also able to describe the experience of the support received, articulate specific support needs such as proactive support, and also outline reasons for not seeking support because they believed they would not find support valuable.
*Pitman et al (2018b) (36) UK	Mixed methods (Quantitative cross-sectional; Qualitative descriptive)	*N* = 460 staff and students at British HEI's bereaved by suicide: *n* = 76 Male (17%) *n* = 384 Female (83%)	Online questionnaire developed by the authors with 119 closed quantitative questions and 20 open ended qualitative questions. 2 out of 20 questions were the focus of this report.	The respondents bereaved by suicide noted specific aspects of grief which impacted on their work performance in particular sadness, poor concentration, confusion and anxiety. Respondents also cited structural challenges in work and educational settings such as lack of support. A small number of respondents described positive impacts on their work outputs as they had to re-evaluate their lives following suicide bereavement.

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*Pitman et al (2018c) (37) UK	Mixed methods (Quantitative cross-sectional; Qualitative descriptive)	*n* = 27 staff and students at British HEI's bereaved by suicide: *n* = 76 Male (17%) *n* = 384 Female (83%)	Following cross-sectional survey participants invited for face to face interview	Most of the respondents bereaved by suicide who were non-British perceived that others blamed them or their relatives and friends as being responsible for the decedent's suicide. They further described that they experienced a lack of support from both friends and professionals and this was experienced as stigmatising.
		QUANTITATIVE STUDIES		
Bailley et al (1999) (38) Canada	Quantitative Descriptive	*N* = 350 university students *n* = 259 bereaved by natural causes *n* =57 bereaved by accident *n* = 34 bereaved by suicide *n* = 90 Male (26.2%) *n* = 253 Female (73.8) *n* = 7 Other	Grief Experience Questionnaire (39) Impact of Event Scale Texas Revised Inventory of Grief (40) Questionnaire developed by the authors	Individuals bereaved by suicide reported feeling responsible for the person's death as compared to the other bereavements groups (accident and natural causes).

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		Mean age: 20.75 years 87.9% Caucasian		
Balk et al (2010) (41) USA	Quantitative Cross-sectional	*N* = 118 undergraduate university students: *n* = 31 bereaved by natural causes *n* = 8 bereaved by accident *n* = 6 bereaved by murder *n* = 4 bereaved by suicide Male: 41% (number not stated) Female: 59% (number not stated) 94% Protestants (number not stated) 69% Caucasian (number not stated)	Prigerson et al. (2008) revised and shortened the Inventory for Traumatic Grief into a 13-item questionnaire that can be used to measure complicated grief and diagnose prolonged grief disorder (42). Demographic and background questionnaire developed by the authors	In this sample of undergraduate students, four of the decedents died by suicide.
Bhaskaran et al (2021) (43) Canada	Quantitative Cross-sectional	*N* = 964 bereaved university students: *n* = 322 Male (33.4%) *n* = 632 Female (65.6%)	Patient Health Questionnaire (PHQ-9) (44) Generalized Anxiety Disorder Assessment-7 (GAD-7) (45)	75 out of 964 deaths were due to suicide. Suicide is categorised under sudden death bereavement. Sudden death bereavement was associated with increased likelihood of

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		n = 134 bereaved through accidents: *n* = 20 bereaved through homicide *n* = 75 bereaved through suicide *n* = 648 bereaved through illness *n* = 87 bereaved through unknown causes	Inventory of Complicated Grief (ICG) (46) National Stressful Events PTSD Short Scale (NSESS) (47) The alcohol use disorders identification test (AUDIT) (48)	complicated grief symptomatology and increased likelihood of generalised anxiety disorder.
McIntosh & Kelly (1992) (49) USA	Quantitative Cross-sectional	*N* = 174 university students: *n* = 63 bereaved by natural causes *n* = 71 bereaved by accidents *n* = 40 bereaved by suicide Mean age: 27.9 years *n* = 55 Male (32%) *n* = 119 Female (68%)	Demographic questionnaire developed by authors Suicidal Behaviors Questionnaire (50) Impact of Event Scale (51) Revised UCLA Loneliness Scale (52) Texas Revised Inventory of Grief (TRIG) (40)	Those bereaved by suicide and accidents felt a greater need to understand the death. 87 percent of those bereaved by suicide also indicated that they felt stigmatised by others. There was no difference to the guilt felt by those bereaved by suicide when compared to those bereaved by natural causes and accidents.
*Pitman et al (2016) (53) UK	Quantitative Cross-sectional	*N* = 3432 HEI staff and students who had experienced a sudden bereavement of a close contact.	Online questionnaire developed by the authors. 10-item stigmatization	The group of those bereaved by suicide had higher shame, stigma, guilt and responsibility scores

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		n = 2106 bereaved by natural causes *n* = 712 bereaved by sudden unnatural causes *n* = 614 bereaved by suicide *n* = 648 Males (19%) *n* = 2784 Females (81%)	subscale of the Grief Experience Questionnaire (GEQ) (54). Secondary measures three related GEQ subscales: shame, responsibility and guilt (39)	when compared to those bereaved by other means.
*Pitman et al (2017a) (55) UK	Quantitative Cross-sectional	*N* = 3432 HEI staff and students who had experienced a sudden bereavement of a close contact. *n* = 2106 bereaved by natural causes *n* = 712 bereaved by sudden unnatural causes *n* = 614 bereaved by suicide *n* = 648 Males (19%) *n* = 2784 Females (81%)	Online questionnaire developed by the authors to elicit quantitative data on sociodemographic and clinical characteristics. Composite International Diagnostic Interview screen for lifetime depression (56) Stigma subscale of the Grief Experience Questionnaire (57)	Individuals bereaved by suicide were significantly less likely to receive informal support compared to those bereaved by natural causes and likely to report delayed receipt of support. In this sample 25 percent (one in four) people bereaved by suicide had received no formal or informal support. 6 percent of the sample bereaved by suicide reported attempting suicide since the bereavement.
Silverman et al (1994) (58) USA	Quantitative Cross-sectional	*N* = 55 college students bereaved in the last 5 years	Grief Experience Questionnaires (39)	Those bereaved by suicide reported higher levels of general grief, loss of social support, stigma and feeling responsible for the death.

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		n = 12 bereaved by natural anticipated causes *n* = 9 bereaved by natural unanticipated causes *n* = 16 bereaved by accident *n* = 9 bereaved suicide n = 9 bereaved by homicide Gender not stated	Interpersonal Support Evaluation List (59) Impact of Event Scale (51) Grief Recovery Questions (60)	They also experienced a greater need for an explanation about the cause of death.
Thompson & Range (1990) (61) USA	Quantitative Yoked design	*N* = 92 undergraduate college students *n* = 10 death by suicide *n* = 11 death by accident *n* = 12 Death by anticipated natural causes *n* = 13 death by unanticipated natural causes Mean age: 20.25 years. *n* = 36 Male (39%) *n* = 56 Female (61%)	Impact of Event Scale (51) Scale for Prediction of Outcome after Bereavement (62) Perceived Social Support Scale (63)	Non-bereaved participants imagined those bereaved by suicide as receiving more support than actually occurred.

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Thompson & Range (1993) (64) USA	Quantitative Yoked design	*N* = 112 undergraduate college students *n* = 18 bereaved by suicide *n* = 13 bereaved by accident *n* = 10 bereaved by anticipated natural causes *n* = 10 bereaved by unanticipated natural causes *n* = 5 bereaved by homicide Mean age: 20.5 years old *n* = 32 Male (29%) *n* = 80 Female (71%) An Imagined Group (*n*=56 potential comforters) reported no bereavement within the past two years and no experience of comforting a bereaved person in the past year. Each person was individually matched on gender and age to a bereaved person.	Impact of Event Scale (51) Multiple Affect Adjective Check List-Revised Perceived Recovery (65) Interpersonal Support Evaluation List (59) Perceived Recovery (62) Perceived Social Support Scale (63) Helpful/Unhelpful Support (66) Theoretically based guidelines for scoring facilitativeness of support developed from interviews with bereaved persons (67)	Individuals bereaved by suicide remembered receiving support that was unhelpful and filled with blame while the non-bereaved individuals imagined giving more support.

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Thornton et al (1989) (68) USA	Quantitative Descriptive	*N* = 89 undergraduate university students *n* = 28 Male (31%) *n* = 61 Female (69%)	Personal and social role functioning questions adapted from Hammen and Peters (1979) (69)	When death was caused by suicide males were perceived better as a close friend or club member than females. When a child or adolescent died by suicide, more blame was attributed to the griever. The participants perceived the deceased was as having been more psychologically unstable when death was by suicide rather than by illness.

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***Note: these six articles are part of a single study by Pitman and colleagues**

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Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	1, 2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	2, 3, 4
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	4
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	NA
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	5
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	4, 5
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	4, 5
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	5
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	5, 6
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	5, 6
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	NA

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SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	6
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	6, 7
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	6, 7
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	7, 8, 9
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	7, 8, 9
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	7, 8, 9
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	10, 11
Limitations	20	Discuss the limitations of the scoping review process.	11,12
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	12
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	13

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.
* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.
† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).
‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.
§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.

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BMJ Open

Suicide postvention for staff and students on university campuses: A scoping review

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Primary Subject Heading:	Mental health
Secondary Subject Heading:	Public health, Health policy
Keywords:	Suicide & self-harm < PSYCHIATRY, EDUCATION & TRAINING (see Medical Education & Training), Adult psychiatry < PSYCHIATRY

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Suicide postvention for staff and students on university campuses: A scoping review

AUTHORS

Sophia-Lorraine Allie[1] Jason Bantjes[2,3,4] Karl Andriessen[5]

1. Department of Psychology, Faculty of Arts and Social Sciences, Stellenbosch University, Stellenbosch, South Africa.
2. Alcohol, Tobacco and Other Drug Research Unit, South African Medical Research Council.
3. Department of Global Health, Faculty of Medicine and Health Sciences, Stellenbosch University.
4. Dept of Psychiatry and Mental Health, University of Cape Town, South Africa.
5. Centre for Mental Health, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Australia.

Corresponding author: Sophia-Lorraine Allie, Department of Psychology, Faculty of Arts and Social Sciences, Stellenbosch University, Stellenbosch, South Africa. sophialorraine.allie@gmail.com/ 21725411@sun.ac.za

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ABSTRACT

Objective: To examine current knowledge about suicide bereavement and postvention interventions for university staff and students.

Design: Scoping review

Data sources and eligibility: We conducted systematic searches in 12 electronic databases (PubMed, PsycINFO, MEDLINE, CINAHL, Africa-Wide Information, PsycARTICLES, Health Source: Nursing/Academic Edition, Academic Search Premier, SocINDEX through the EBSCOHOST platform; Cochrane Library, Web of Science, SCOPUS), hand searched lists of references of included articles, and

consulted with library experts during September 2021 and June 2022. Eligible studies were screened against the inclusion criteria independently by two reviewers. Only studies published in English were included.

Data extraction and synthesis: Screening was conducted by two independent reviewers following a 3-step article screening process. Biographical data and study characteristics were extracted using a data extraction form and synthesised.

Results: Our search strategy identified 7691 records from which 3170 abstracts were screened. We assessed 29 full texts and included 17 articles for the scoping review. All studies were from high-income countries (United States of America, Canada, United Kingdom). The review identified no postvention intervention studies on university campuses. Study designs were mostly descriptive quantitative, or mixed methods. Data collection and sampling were heterogeneous.

Conclusion: Staff and students require support measures due to the impact of suicide bereavement and the unique nature of the university context. There is a need for further research to move from descriptive studies to focus on intervention studies, particularly at universities in low-and-middle-income countries.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- The review focused on postvention interventions for both staff and students on university campuses globally.
- This scoping review was based on a robust methodology for conducting scoping reviews.
- The selection process of eligible articles and data extraction was conducted independently by two researchers.
- The review provides a synthesis and critical examination of the postvention research and practice on university campuses.
- The scoping review was limited to peer-reviewed articles and primary studies published in English where grey literature was excluded.

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INTRODUCTION

Despite the decrease in suicide rates globally (1), there has been an increase in suicide among university students in recent years (2, 3). There is a growing concern over the mental health of university students, with various studies identifying that mental disorders and suicide are higher among university students than the general population (4-9). Suicide has been identified as the fourth leading cause of death among 15 to 29-year-olds globally (1). Pillay (2) identified that suicide risk is greatest among students when they face challenges in multiple areas. Some risk factors for student suicide include being black/belonging to a minority group; non-heteronormative sexual orientation; poor socio-economic background; mental disorders; academic pressure, and financial concerns (2, 5, 10, 11).

The transition to university life coincides with the transition into adulthood, which comes with various challenges and stressors for students, such as leaving home for the first time, financial concerns, including balancing employment with academic demands (3, 12, 13). Although changes to the higher education sector mean that not all students attend residential universities and live on campus (14, 15), some students spend most of their time on campus, especially if they are in residential accommodation (14, 15). Given this context, a suicide on campus can be experienced as a community trauma and may be the first time a student encounters a peer's death compared to a family member's death (14). Students may experience a range of emotional responses, such as shock, depression, fear, anger and loneliness (14). Internal and external factors such as gender, sociocultural background, religious factors and belief in the afterlife contribute to these emotional responses (14, 15).

Literature often refers to those bereaved by suicide as “suicide survivors” or “survivors of suicide” to describe those who have been bereaved by suicide (16-19). We intentionally chose to use the descriptor “students bereaved by suicide” and its variations to improve clarity. Students bereaved by suicide face a heightened risk for mental disorders, substance use and suicide (20). Suicide bereavement can have a negative impact on physical and psychological well-being over the life-course, such as increased risk of depression and death by suicide (21). The impact of suicide on

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campus is therefore considered more widespread than a suicide in the general population (22, 23).

Since students spend most of their time at universities, staff can be considered among the bereaved affected by student suicide. Although there is a dearth of research on the impact of suicide on university staff, research in schools shows that teachers bereaved by suicide reported significant distress and lack of support (24, 25). When a student dies, the place of work becomes the place of loss for teaching staff who are now also responsible for teaching grieving students (26). Suicide bereavement significantly impacts bereaved staff and students' interpersonal relationships (partners, close friends and family). This includes feeling discomfort over the death due to stigma or taboo, and a loss of social confidence leading to social withdrawal (25, 27).

Suicide prevention strategies recommend providing postvention, defined as the care and support activities offered to those who have been bereaved by suicide to promote recovery and prevent adverse outcomes regarding their grief and mental health (28-30). Five systematic reviews have been conducted on postvention interventions to date (31-35). These systematic reviews identify some elements of postvention that have been found useful such as proactive support immediately following a suicide, counselling, cognitive behavioural approaches, gate-keeper training and bereavement groups (31, 34-37). Szumilas (31) has asserted that schools should be a site for targeted postvention interventions, an argument which can be extended to university campuses. Although schools and universities share similar characteristics, in that they are both educational institutions, they also have unique needs. Due to the developmental stage (12, 13) and the prevalence of mental disorders and suicide among university students (6, 9, 38), it is important to identify postvention interventions specific to university students and with it, the impact of suicide bereavement on university students.

This scoping review aimed to answer the following question: *"What is known about suicide bereavement and postvention interventions for staff and students at universities?"*. The term universities will be used to refer to all higher education institutions (HEI's) throughout. The objectives of the review were to: (i) describe the impact of suicide bereavement on staff and students at universities; (ii) identify institutional responses to suicide bereavement at universities; (iii) describe

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postvention interventions at universities. Answering this question and objectives may provide a first step in developing recommendations for further research and guidelines that could assist universities in decision making and most appropriate action following a student suicide.

METHODS

This scoping review was conducted using the Joanna Briggs Institute (JBI) guideline for scoping reviews (39), which builds on the seminal work of Arksey and O'Malley (40) as well as Levac and colleagues (41). The review is reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) checklist (26), which is congruent with the JBI guidelines. A review protocol was developed but not published. The research question and objectives were developed through an iterative process involving discussion and collaboration of the three authors (SA, JB, KA).

Patient and public involvement

Patients or the public were not involved in the design or conduct of this scoping review. The experiences of the authors working with university students informed the need to explore the review question.

Search Strategy

As recommended by the JBI guideline (39), a three-step search strategy was utilised. Firstly, the first author (SA) conducted a preliminary search of Academic Search Premier and PubMed to identify relevant articles in August 2021. SA consulted two expert librarians at Stellenbosch University, to develop a comprehensive search strategy using the words contained in the titles and abstracts of relevant articles and index terms used to describe articles. The search string comprised a variety of search terms, including MeSH terms, synonyms and variant spellings, connected by Boolean operators. All identified keywords and index terms were included, and this search string (see Table 1) was used across the following databases: PubMed, PsycINFO, MEDLINE, CINAHL, Africa-Wide Information, PsycARTICLES, Health Source: Nursing/Academic Edition, Academic Search Premier, SocINDEX (EBSCOHOST);

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Cochrane Library, Web of Science, SCOPUS. These databases were selected because they provide a wide range of interdisciplinary literature. In PubMed the following words were filtered using title/abstract: suicide[tiab], (postvention[tiab] , “psychosocial intervention”[tiab], "post suicide"[tiab]. The searches were not limited by date of publication or location, but were limited to publications in English. We elected to include only peer-reviewed articles to ensure credible studies were included. The reference lists of included full-text articles and systematic reviews were hand searched for additional references.

Table 1. Search string used across databases

Search string
("college student" OR "university student" OR undergraduate OR postgraduate OR lecturer OR faculty OR “administrative staff” OR “administrative personnel” OR “support staff” OR "educational personnel") AND suicide AND (postvention OR intervention OR bereavement OR grief OR debrief OR debriefing OR "crisis intervention" OR “psychosocial intervention” OR "support after suicide" OR "survivors after suicide" OR "post suicide") AND (university OR college OR "institution of higher learning" OR campus OR “higher education”).

Study selection

SA conducted the searches in September 2021 and updated them in June 2022. We followed two independent screening levels for selecting studies for inclusion. Table 2. outlines the inclusion criteria.

Table 2. Inclusion criteria

Inclusion
i. The study population consists of university/HEI students and staff
ii. The study report data on suicide bereavement or postvention interventions for university/HEI students or staff
iii. The study used qualitative, quantitative or mixed methods as primary research
iv. The study was published in English as a peer-reviewed paper

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The first level was a title and abstract review, and the second was a full-text review. For the first level of review, Researcher SA uploaded all identified citations from the database searches into EndNote (40) and removed duplicates. Thereafter, SA imported all citations into Rayyan QCRI (41) and removed further duplicates identified by Rayyan QCRI (41). Two reviewers (SA and EB) screened and selected titles and abstracts independently according to the inclusion criteria. Twenty-nine (n=29) full-text articles were assessed with 17 articles included in the final review. Ten disagreements on study selection were resolved through a consensus discussion. Reasons for disagreement included lack of clarity regarding the study population or whether a study was a peer-reviewed publication. Figure 1. summarises the search and selection process (42)

Data extraction

The researchers developed and piloted a Microsoft Excel data extraction form based on JBI data extraction template (39, 43). Researcher SA extracted information on author, year, journal, affiliation, country of origin, country income group according to the World Bank classification (44), aims, population characteristics, core data on methodology and key findings from each of the 17 included articles. In line with the review aims, information on postvention interventions, definitions of postvention, impact of suicide bereavement, institutional responses, practice implications and recommendations for further development were also extracted. An audit was done by EB on all the articles to ensure the accuracy of extracted data. No errors were identified. Supplementary Table 1 provides an overview of the included studies.

Quality assessment

SA conducted a quality assessment by using an adaptation of the JBI critical appraisal checklists (45). This quality assessment was audited by ZS. Each item on the checklist was given 1 if scored ‘yes’ or 0 if scored ‘no’(45). A total score was calculated for each study which resulted in an overall rating against set criteria of poor quality (less than 50%), moderate quality (50%-80%) and high quality (80%-100%). Most studies received a rating of moderate quality (n=15) and two were low quality. No studies were excluded due to study quality.

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Data synthesis

Data were summarised into a descriptive and narrative synthesis due to the variation in study designs to answer the following questions from university settings: describe the impact of suicide bereavement on staff and students at universities; identify institutional responses to suicide bereavement at universities and describe postvention interventions at universities. Results are presented firstly as a descriptive numerical summary (46) (study characteristics) followed by key findings from the included studies.

RESULTS

Study characteristics

The included articles were published between 1989 and 2021 (Supplementary Table 1). Most articles (n=8) were from the USA (47-53), seven articles from the UK (54-60) and two from Canada (61, 62). The article study designs included ten quantitative studies (48, 49, 51-53, 55, 57, 61-63) involving the use of surveys; two qualitative studies using grounded theory and phenomenological approaches (50, 54) which collected data using semi-structured interviews. Five mixed-methods studies used a combination of questionnaires,(47, 56, 58-60) interviews, (47, 59) and open-ended qualitative questions (56, 58-60). Studies that were quantitative or had a quantitative element, used a range of existing outcome measures or developed measures to capture data on grief reactions (47, 51, 55, 57, 61, 62), impact of suicide bereavement (48, 49, 51-53, 55-63) and suicidal behaviours (49) Supplementary Table 1 outlines the outcome measures in greater detail.

Most articles (n=13) identified participants bereaved by suicide through surveys. Two articles (47, 63) recruited students as participants to evaluate their personal responses to those bereaved by suicide. The other two articles (50, 54) were qualitative in nature and staff participants were purposively selected as those exposed to student suicide. All study participants were adults at HEI's and ranged between 18 and 70 years old. Most of the articles (n=14), except one, (47) had more female participants than male participants. Two articles (50, 51) did not state the gender profile of the participants. Many of the articles focused on the perspectives of students (n=9) (47-49, 51-53, 61-63) or both staff and student perspectives (n=6) (55-60) with only two (50, 54) focusing

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exclusively on the perspectives of staff. Most of the articles (n=16) explored the concept of suicide bereavement. We found no published articles which investigated postvention interventions in university settings.

Key findings from included articles

Supplementary Table 1 provides a summary of the key findings of the 17 included articles arranged methodologically. The findings presented below are organised around the review objectives under the headings of: the impact of suicide bereavement on staff and students at universities, institutional responses to suicide bereavement at universities and postvention interventions at universities.

The impact of suicide bereavement on staff and students at universities

Students bereaved by suicide experienced higher levels of general grief reactions compared to those bereaved by other means such as natural causes or accidents (51, 61). In one study, the Scale for Prediction of Outcome After Bereavement (SPOB) (64) was used to predict the outcome of bereavement on students. The SPOB predicted that those students who were suicide bereaved would have difficulty returning to baseline functioning (52). Staff and students had increased suicidal ideation or attempted suicide following their bereavement and most of them had not sought help for any episode of self-harm or suicidal ideation (57). As a result of their bereavement experience, for some staff and students (25%) who had never considered suicide as an option, suicide became more normalised. This fostered awareness that suicide could provide a way out of extreme distress for themselves or others (56). They suddenly had a new awareness that in a state of extreme distress they, or anyone they knew, could be vulnerable to suicide (56). In contrast, half of the staff and students expressed a conviction that they would prevent dying by suicide themselves due to the impact they had witnessed and experienced following a suicide death (56).

For students bereaved by suicide, there was a need to understand the death and the reasons that led to the deceased taking their own life (49, 51, 61). It is as if they needed this explanation to make sense of the suicide. They also felt responsibility that they could have done something to prevent the suicide, and this led to feelings of guilt (49, 51, 55, 61). Some respondents felt like the deceased was punishing them by dying

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and felt rejected by the deceased (51, 61). Students bereaved by suicide experienced shame and embarrassment which set them apart from other students who mourn non-suicidal deaths (51, 61) They had more perceived stigma (49, 55, 61) and often felt that other people, especially friends, did not understand their feelings about the suicide death, putting a strain on relationships (49, 55). Staff and students reported that they avoided using the word 'suicide' as it made other people feel uncomfortable and concealed the cause of death for the same reasons. They also felt the social pressure to no longer be affected by the suicide, so they learnt to hide their expressions of grief (59, 60).

Staff reported physical and psychological responses to student suicide that impacted their personal and professional lives. Firstly, there were the practical tasks to take care of following the death of a student, such as packing up belongings, and initiating administrative processes. Some staff reported that they began to question themselves at perhaps having missed something with the students or not having done more to prevent the suicide (54). Grief following suicide bereavement impacted on staff's abilities to function in the workplace. Staff reported feeling profound sadness, confusion, anxiety, and poor concentration. This led to poor work quality, difficulty working in a team and the loss of self-confidence (58). A small group of staff and students cited an unexpected impact of suicide bereavement in their work. They stated that they used work as a distraction to cope with their emotions and work was also used as a way to make the deceased proud of them (58). Furthermore, the experience of suicide bereavement motivated some of the staff and students to change to careers related to mental health or caring for vulnerable persons (58).

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Institutional responses to suicide bereavement at universities

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There were varying views on support received and accessed with staff citing that institutional processes were unsupportive to staff in a culture that values student mental well-being over staff well-being (58). Staff further described a lack of institutional support offered or available where managers were insensitive to their needs (58). Within work settings, both staff and students described institutional practices that were unsupportive to their grieving process such as systems for taking compassionate leave where one had to produce a death certificate, additional work responsibilities because of taking time off and difficulty catching up due to decreased work capacity (58). Furthermore, university administrators identified challenges to responding appropriately to student suicide on campus. These included a lack of postvention training received as part of their role and challenges around notification procedures communicating to the university community about the student death by suicide in a timeous manner before social media platforms shared the news, often before the family had been officially informed. Another challenge for university administrators was balancing their desire to honour the memory of the deceased student while minimising the risk of suicide contagion on campus (50).

Staff and students felt that the way that support efforts could be enhanced following suicide bereavement would be to offer support proactively and consistently over time, especially practical support (60). Practical support that was seen as valuable included childcare, help with housework and general administration. Employers and teaching staff could offer practical support by granting time off, extending deadlines and rescheduling exams (60). Staff and students could also outline their reasons for not seeking support. These included: fear of asking for support, negative experiences of previous attempts to access support, feeling that support would not benefit them and fearing judgement at their need for psychological support (60). One study found that students bereaved by suicide were less likely to receive informal support than those bereaved by natural causes (57). Another study reported that staff and students received informal support from family and friends and said this support was valuable in coping with their grief (60). Staff and students also expressed the need for professional support, but very few accessed formal support (60). Some students felt they did not receive any support and that others were unhelpful (52, 53).

Postvention interventions at universities

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Of the 17 articles included in this scoping review, none spoke directly to any postvention interventions at the respective institutions.

Discussion

The staff and students bereaved by suicide in this review experienced higher levels of grief reactions when compared to bereavement by non-suicide deaths impacting on their personal and occupational functioning. Despite this, the findings demonstrate how staff have been largely marginalised from this research with a focus on university students. Only two studies (50, 54) focused exclusively on staff experiences. This bias towards studying the experiences of students is understandable, given that universities are set up for students; however, it is important to include staff as they have important support needs also. The staff in this review were responsible for supporting students, attending to practical tasks and informing students following a suicide death (50, 54). This raises questions about the responsibilities and expectations placed on staff and whether these are realistic. There is increasing awareness of employer responsibilities for the health and well-being of staff and safety of students (65).

Following their bereavement experience, for some staff and students, suicide became more normalised and increased their awareness that suicide could be a way out of distress (56). This has some implications for suicide contagion among university students and staff. Mueller (66) describes the suicide contagion process where the suicide attempt of a friend can transform the distant idea of suicide into a way an individual can express themselves. Miklin and Mueller (67) further identify that suicide bereavement in itself is not inherently risky but it is how the bereaved person makes sense of the suicide that may contribute to the risk. Among the staff and students in this review, there was a need to make sense of the suicide (49, 51). This element for support may need to be considered in any potential interventions for staff and students. Recently, some evidence has pointed peer-led interventions as a way to support those bereaved by suicide or experiencing suicidality (68, 69). This creates an opportunity for these peer-led interventions to be used with university students and staff.

Staff and students experienced support as both helpful and unhelpful. This creates an opportunity for support measures to be enhanced and access to support improved

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especially through strategies that reduce the social stigma attached to accessing mental health services (2). One way to improve access is through using online support services such as online forums (70, 71) or remote services (72).

The articles that reported the gender profile of participants had more female than male respondents, a trend that has also been observed in suicide bereavement literature more broadly (73, 74). In published suicide research there is a gender imbalance with 60 percent to 90 percent of participants identifying as women (75). This introduces bias because only women are reporting on the suicide bereavement experience. Future research should explore the perspectives of males and gender nonconforming individuals to gain a diverse perspective on the suicide bereavement experiences.

A systematic mapping of postvention research over the last 50 years (76) has identified the need for more intervention studies within postvention research. This review also highlighted this gap as it did not identify studies on postvention interventions at universities. Although we primarily sought out to explore both suicide bereavement and postvention interventions among staff and students at universities, we found literature that only focuses on suicide bereavement among staff and students conducted in high-income countries. This mirrors a trend in postvention literature where 93% of research is concentrated in high-income countries particularly (USA, UK, Canada, Australia and Sweden) (76) when 77 percent of global suicides occur in low-and-middle-income countries (1).

The strength of this review was using a robust methodology to identify some critical gaps in the postvention literature. The findings of this review should be considered within the following limitations. The studies included in this review were limited to peer-reviewed in English, so potentially relevant articles may have been missed if they were available in another language. The inclusion of peer-review articles was to introduce a level of rigour in this scoping review. Grey literature was excluded and potentially relevant articles that could change the review's outcome could have been missed. Some higher education providers in other countries do not have the word “college” or “university” or “campus” or “higher education” in their descriptors. Therefore, there is the potential that some relevant studies have not been identified in this scoping review.

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Conclusion

This review set out to examine suicide bereavement and postvention interventions on university campuses. The review identified studies focusing on suicide bereavement but no studies on postvention interventions on university campuses.

Nonetheless, universities have the potential to be effective sites for interventions but there is not a universal solution that will meet the needs of all institutions. HEI's are not heterogeneous in nature, and this would need to be considered when designing interventions. Some HEI's have distance students, students off campus, some are small and others large. There is a need for postvention research to move beyond descriptive studies to focus on interventions.

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AUTHOR CONTRIBUTIONS

This scoping review was developed by the intellectual contributions of all the authors. All authors were involved in developing the review question and conceptualising the approach. SA developed and tested search terms in consultation with subject librarians. SA in consultation with JB and KA developed the data extraction form. SA reviewed all articles for inclusion, and no discrepancies were referred to a third reviewer. KA and JB contributed to drafting and reviewing the manuscript prior to submission.

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COMPETING INTERESTS STATEMENT

The authors declare that they have no competing interests.

ETHICS APPROVAL

Not required

PATIENT CONSENT FOR PUBLICATION

Not required.

DATA SHARING STATEMENT

All data relevant to the study are included in the article or uploaded as a supplementary file.

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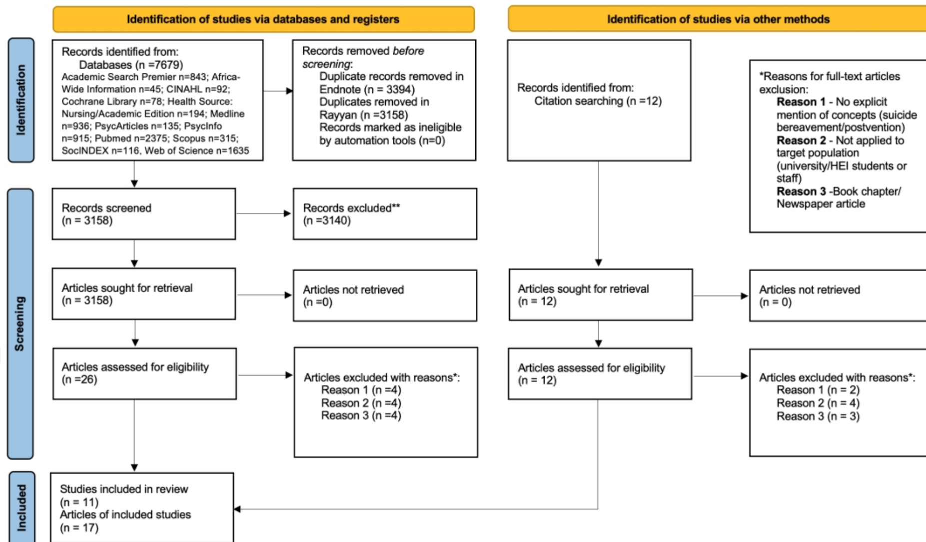

Figure 1. PRISMA Diagram

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Supplementary Table 1. Articles included in the review

Authors (year) Location	Design and methods	Participants	Instrument/Measures	Key Findings
		QUALITATIVE STUDIES		
Causer et al (2021) (43) UK	Qualitative Grounded theory	*N* = 19 Staff at HEI's: *n* = 8 Male (42%) *n* = 11 Female (58%)	Survey and Interviews developed and conducted by the authors.	Staff described how in "bearing witness" to student suicide that all subsequent experiences were shaped. This included practical tasks immediately following the death by suicide, physical, emotional and psychological changes and experiences of support.
Rompalo et al (2021) (44) USA	Qualitative Phenomenology	*N* = 8 student affairs administrators Gender not stated	Online interviews	HEI administrators identified three main challenges i) lack of postvention training ii) managing notifications about the student death before it gets announced on social media iii) balancing remembering the student with a memorial while minimising the risk of suicide contagion on

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				campus. HEI administrators also stated that there are those that felt that by having memorials one was "glorifying" the deceased student.
		MIXED METHOD STUDIES		
Allen et al (1993) (45) USA	Mixed methods	*n* = 30 male (50%) *n* = 30 female (50%) undergraduate university students. Mean age 21 years. 75% Caucasian, 15% African-American, 9% other ethnicity	State-Trait Anxiety Inventory and interview (46)	Those bereaved by suicide are perceived to be different from individuals bereaved by other causes of death. Individuals bereaved by suicide are also viewed as more psychologically disturbed and more able to prevent the deaths compared to accidental or natural deaths.
*Pitman et al (2017b) (47)	Mixed methods	*N* = 429 staff and students at British HEI's bereaved by suicide:	Online questionnaire developed by the authors with 119 closed quantitative questions and 20 open ended qualitative questions.	Following their experiences of suicide bereavement, the respondents saw suicide as a tangible option, identified their shared vulnerability to

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UK	(Quantitative cross-sectional; Qualitative descriptive)	Male: not stated Female: 82% (number not stated) Mean age: 25.3 years	one out of 20 questions were the focus of this report.	suicide and made personal determination to avoid dying by suicide.
*Pitman et al (2018a) (48) UK	Mixed methods (Quantitative cross-sectional; Qualitative descriptive)	*N* = 420 staff and students at British HEI's bereaved by suicide: *n* = 71 Male(17%) *n* = 349 Female (83%)	Online questionnaire developed by the authors with 119 closed quantitative questions and 20 open ended qualitative questions. 2 out of 20 questions were the focus of this report.	In the quantitative responses, the majority of the participants (75%) reported receiving informal support from friends. 41% of those who received support also received support from a mental health professional. The participants were also able to describe the experience of the support received, articulate specific support needs such as proactive support, and also outline reasons for not seeking support because they believed they would not find support valuable.
*Pitman et al (2018b) (49) UK	Mixed methods (Quantitative cross-sectional; Qualitative descriptive)	*N* = 460 staff and students at British HEI's bereaved by suicide: *n* = 76 Male (17%)	Online questionnaire developed by the authors with 119 closed quantitative questions and 20 open ended qualitative questions.	The respondents bereaved by suicide noted specific aspects of grief which impacted their work performance, particularly sadness, poor

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		n = 384 Female (83%)	2 out of 20 questions were the focus of this report.	concentration, confusion and anxiety. Respondents also cited structural challenges in work and educational settings, such as lack of support.
*Pitman et al (2018c) (50) UK	Mixed methods (Quantitative cross-sectional; Qualitative descriptive)	*n* = 27 staff and students at British HEI's bereaved by suicide: *n* = 76 Male (17%) *n* = 384 Female (83%)	Following cross-sectional survey participants invited for face to face interview	Most of the respondents bereaved by suicide who were non-British perceived that others blamed them or their relatives and friends as being responsible for the decedent's suicide. They further described that they experienced a lack of support from both friends and professionals and this was experienced as stigmatising.
		QUANTITATIVE STUDIES		
Bailley et al (1999) (51) Canada	Quantitative Descriptive	*N* = 350 university students *n* = 259 bereaved by natural causes *n* =57 bereaved by accident	Grief Experience Questionnaire (52) Impact of Event Scale Texas Revised Inventory of Grief (53) Questionnaire developed by the authors	Individuals bereaved by suicide reported feeling responsible for the person's death compared to the other bereaved groups (accident and natural causes).

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		n = 34 bereaved by suicide *n* = 90 Male (26.2%) *n* = 253 Female (73.8) *n* = 7 Other Mean age: 20.75 years 87.9% Caucasian		
Balk et al (2010) (54) USA	Quantitative Cross-sectional	*N* = 118 undergraduate university students: *n* = 31 bereaved by natural causes *n* = 8 bereaved by accident *n* = 6 bereaved by murder *n* = 4 bereaved by suicide Male: 41% (number not stated) Female: 59% (number not stated) 94% Protestants (number not stated)	Prigerson et al. (2008) revised and shortened the Inventory for Traumatic Grief into a 13-item questionnaire that can be used to measure complicated grief and diagnose prolonged grief disorder (55). Demographic and background questionnaire developed by the authors	In this sample of undergraduate students, four of the decedents died by suicide.

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		69% Caucasian (number not stated)		
Bhaskaran et al (2021) (56) Canada	Quantitative Cross-sectional	*N* = 964 bereaved university students: *n* = 322 Male (33.4%) *n* = 632 Female (65.6%) *n* = 134 bereaved through accidents: *n* = 20 bereaved through homicide *n* = 75 bereaved through suicide *n* = 648 bereaved through illness *n* = 87 bereaved through unknown causes	Patient Health Questionnaire (PHQ-9) (57) Generalized Anxiety Disorder Assessment-7 (GAD-7) (58) Inventory of Complicated Grief (ICG) (59) National Stressful Events PTSD Short Scale (NSESS) (60) The alcohol use disorders identification test (AUDIT) (61)	75 out of 964 deaths were due to suicide. Suicide is categorised under sudden death bereavement. Sudden death bereavement was associated with increased likelihood of complicated grief symptomatology and increased likelihood of generalised anxiety disorder.
McIntosh & Kelly (1992) (62) USA	Quantitative Cross-sectional	*N* = 174 university students: *n* = 63 bereaved by natural causes *n* = 71 bereaved by accidents *n* = 40 bereaved by suicide Mean age: 27.9 years	Demographic questionnaire developed by authors Suicidal Behaviors Questionnaire (63) Impact of Event Scale (64) Revised UCLA Loneliness Scale (65)	Those bereaved by suicide and accidents felt a greater need to understand the death. 87 percent of those bereaved by suicide also indicated that they felt stigmatised by others. There was no difference to the guilt felt by those bereaved by suicide when compared to those bereaved by natural causes and accidents.

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		n = 55 Male (32%) *n* = 119 Female (68%)	Texas Revised Inventory of Grief (TRIG) (53)	
*Pitman et al (2016) (66) UK	Quantitative Cross-sectional	*N* = 3432 HEI staff and students who had experienced a sudden bereavement of a close contact. *n* = 2106 bereaved by natural causes *n* = 712 bereaved by sudden unnatural causes *n* = 614 bereaved by suicide *n* = 648 Males (19%) *n* = 2784 Females (81%)	Online questionnaire developed by the authors. 10-item stigmatization subscale of the Grief Experience Questionnaire (GEQ) (67). Secondary measures three related GEQ subscales: shame, responsibility and guilt (52)	The group of those bereaved by suicide had higher shame, stigma, guilt and responsibility scores when compared to those bereaved by other means.
*Pitman et al (2017a) (68) UK	Quantitative Cross-sectional	*N* = 3432 HEI staff and students who had experienced a sudden bereavement of a close contact. *n* = 2106 bereaved by natural causes *n* = 712 bereaved by sudden unnatural causes *n* = 614 bereaved by suicide *n* = 648 Males (19%)	Online questionnaire developed by the authors to elicit quantitative data on sociodemographic and clinical characteristics. Composite International Diagnostic Interview screen for lifetime depression (69) Stigma subscale of the Grief Experience Questionnaire (70)	Individuals bereaved by suicide were significantly less likely to receive informal support compared to those bereaved by natural causes and likely to report delayed receipt of support. In this sample 25 percent (one in four) people bereaved by suicide had received no formal or informal support. 6 percent of the sample bereaved by

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		n = 2784 Females (81%)		suicide reported attempting suicide since the bereavement.
Silverman et al (1994) (71) USA	Quantitative Cross-sectional	*N* = 55 college students bereaved in the last 5 years *n* = 12 bereaved by natural anticipated causes *n* = 9 bereaved by natural unanticipated causes *n* = 16 bereaved by accident *n* = 9 bereaved suicide n = 9 bereaved by homicide Gender not stated	Grief Experience Questionnaires (52) Interpersonal Support Evaluation List (72) Impact of Event Scale (64) Grief Recovery Questions (73)	Those bereaved by suicide reported higher levels of general grief, loss of social support, stigma and feeling responsible for the death. They also experienced a greater need for an explanation about the cause of death.
Thompson & Range (1990) (74) USA	Quantitative Yoked design	*N* = 92 undergraduate college students *n* = 10 death by suicide *n* = 11 death by accident *n* = 12 Death by anticipated natural causes	Impact of Event Scale (64) Scale for Prediction of Outcome after Bereavement (75) Perceived Social Support Scale (76)	Non-bereaved participants imagined those bereaved by suicide as receiving more support than actually occurred.

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		n = 13 death by unanticipated natural causes Mean age: 20.25 years. *n* = 36 Male (39%) *n* = 56 Female (61%)		
Thompson & Range (1993) (77) USA	Quantitative Yoked design	*N* = 112 undergraduate college students *n* = 18 bereaved by suicide *n* = 13 bereaved by accident *n* = 10 bereaved by anticipated natural causes *n* = 10 bereaved by unanticipated natural causes *n* = 5 bereaved by homicide Mean age: 20.5 years old *n* = 32 Male (29%) *n* = 80 Female (71%) An Imagined Group (*n*=56 potential comforters) reported no bereavement within the past two years and no experience of comforting a bereaved person in	Impact of Event Scale (64) Multiple Affect Adjective Check List-Revised Perceived Recovery (78) Interpersonal Support Evaluation List (72) Perceived Recovery (75) Perceived Social Support Scale (76) Helpful/Unhelpful Support (79) Theoretically based guidelines for scoring facilitativeness of support developed from interviews with bereaved persons (80) Scale for Prediction of Outcome after	Individuals bereaved by suicide remembered receiving support that was unhelpful and filled with blame while the non-bereaved individuals imagined giving more support.

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		the past year. Each person was individually matched on gender and age to a bereaved person.	Bereavement adapted from Parkes (81)	
Thornton et al (1989) (82) USA	Quantitative Descriptive	*N* = 89 undergraduate university students *n* = 28 Male (31%) *n* = 61 Female (69%)	Personal and social role functioning questions adapted from Hammen and Peters (1979) (83)	When death was caused by suicide males were perceived better as a close friend or club member than females. When a child or adolescent died by suicide, more blame was attributed to the griever. The participants perceived the deceased was as having been more psychologically unstable when death was by suicide rather than by illness.

*Note: these six articles are part of a single study by Pitman and colleagues

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Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	1, 2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	2, 3, 4,5
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	4
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	A protocol exists but not published
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	5,6
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	6,7
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	6,7
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	6, 7
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	7
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	5, 6
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	7

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SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	8
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	2, 7, 8
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	2, 6, 7,8, 9
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	7
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	8-12
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	8-12
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	1, 12-14
Limitations	20	Discuss the limitations of the scoping review process.	1, 14
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	1, 14
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	15

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.
* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.
† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).
‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.
§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.

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BMJ Open

Suicide postvention for staff and students on university campuses: A scoping review

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Primary Subject Heading:	Mental health
Secondary Subject Heading:	Public health, Health policy
Keywords:	Suicide & self-harm < PSYCHIATRY, EDUCATION & TRAINING (see Medical Education & Training), Adult psychiatry < PSYCHIATRY

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Suicide postvention for staff and students on university campuses: A scoping review

AUTHORS

Sophia-Lorraine Allie[1] Jason Bantjes[2,3,4] Karl Andriessen[5]

1. Department of Psychology, Faculty of Arts and Social Sciences, Stellenbosch University, Stellenbosch, South Africa.
2. Alcohol, Tobacco and Other Drug Research Unit, South African Medical Research Council.
3. Department of Global Health, Faculty of Medicine and Health Sciences, Stellenbosch University.
4. Dept of Psychiatry and Mental Health, University of Cape Town, South Africa.
5. Centre for Mental Health, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Australia.

Corresponding author: Sophia-Lorraine Allie, Department of Psychology, Faculty of Arts and Social Sciences, Stellenbosch University, Stellenbosch, South Africa.
sophialorraine.allie@gmail.com/ 21725411@sun.ac.za

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ABSTRACT

Objective: To examine current knowledge about suicide bereavement and postvention interventions for university staff and students.

Design: Scoping review

Data sources and eligibility: We conducted systematic searches in 12 electronic databases (PubMed, PsycINFO, MEDLINE, CINAHL, Africa-Wide Information, PsycARTICLES, Health Source: Nursing/Academic Edition, Academic Search Premier, SocINDEX through the EBSCOHOST platform; Cochrane Library, Web of Science, SCOPUS), hand searched lists of references of included articles, and

consulted with library experts during September 2021 and June 2022. Eligible studies were screened against the inclusion criteria independently by two reviewers. Only studies published in English were included.

Data extraction and synthesis: Screening was conducted by two independent reviewers following a 3-step article screening process. Biographical data and study characteristics were extracted using a data extraction form and synthesised.

Results: Our search strategy identified 7691 records from which 3170 abstracts were screened. We assessed 29 full texts and included 17 articles for the scoping review. All studies were from high-income countries (United States of America, Canada, United Kingdom). The review identified no postvention intervention studies on university campuses. Study designs were mostly descriptive quantitative, or mixed methods. Data collection and sampling were heterogeneous.

Conclusion: Staff and students require support measures due to the impact of suicide bereavement and the unique nature of the university context. There is a need for further research to move from descriptive studies to focus on intervention studies, particularly at universities in low-and-middle-income countries.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- The review focused on postvention interventions for both staff and students on university campuses globally.
- This scoping review was based on a robust methodology for conducting scoping reviews.
- The selection process of eligible articles and data extraction was conducted independently by two researchers.
- The review provides a synthesis and critical examination of the postvention research and practice on university campuses.
- The scoping review was limited to peer-reviewed articles and primary studies published in English where grey literature was excluded.

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INTRODUCTION

Despite the decrease in suicide rates globally (1), there has been an increase in suicide among university students in recent years (2, 3). There is a growing concern over the mental health of university students, with various studies identifying that mental disorders and suicide are higher among university students than the general population (4-9). Suicide has been identified as the fourth leading cause of death among 15 to 29-year-olds globally (1). Pillay (2) identified that suicide risk is greatest among students when they face challenges in multiple areas. Some risk factors for student suicide include being black/belonging to a minority group; non-heteronormative sexual orientation; poor socio-economic background; mental disorders; academic pressure, and financial concerns (2, 5, 10, 11).

The transition to university life normally coincides with the transition into adulthood, which comes with various challenges and stressors for students, such as leaving home for the first time, financial concerns, including balancing employment with academic demands (3, 12, 13). Although changes to the higher education sector mean that not all students attend residential universities and live on campus (14, 15), some students spend most of their time on campus, especially if they are in residential accommodation (14, 15). Given this context, a suicide on campus can be experienced as a community trauma and may be the first time a student encounters a peer's death compared to a family member's death (14). Students may experience a range of emotional responses, such as shock, depression, fear, anger and loneliness (14). Internal and external factors such as gender, sociocultural background, religious factors and belief in the afterlife contribute to these emotional responses (14, 15).

Literature often refers to those bereaved by suicide as “suicide survivors” or “survivors of suicide” to describe those who have been bereaved by suicide (16-19). We intentionally chose to use the descriptor “students bereaved by suicide” and its variations to improve clarity. Students bereaved by suicide face a heightened risk for mental disorders, substance use and suicide (20). Suicide bereavement can have a negative impact on physical and psychological well-being over the life-course, such as increased risk of depression and death by suicide (21). The impact of suicide on

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campus is therefore considered more widespread than a suicide in the general population (22, 23).

Since students spend most of their time at universities, staff can be considered among the bereaved affected by student suicide. Although there is a dearth of research on the impact of suicide on university staff, research in schools shows that teachers bereaved by suicide reported significant distress and lack of support (24, 25). When a student dies, the place of work becomes the place of loss for teaching staff who are now also responsible for teaching grieving students (26). Suicide bereavement significantly impacts bereaved staff and students' interpersonal relationships (partners, close friends and family). This includes feeling discomfort over the death due to stigma or taboo, and a loss of social confidence leading to social withdrawal (25, 27).

Suicide prevention strategies recommend providing postvention, defined as the care and support activities offered to those who have been bereaved by suicide to promote recovery and prevent adverse outcomes regarding their grief and mental health (28-30). Five systematic reviews have been conducted on postvention interventions to date (31-35). These systematic reviews identify some elements of postvention that have been found useful such as proactive support immediately following a suicide, counselling, cognitive behavioural approaches, gate-keeper training and bereavement groups (31, 34-37). Szumilas (31) has asserted that schools should be a site for targeted postvention interventions, an argument which can be extended to university campuses. Although schools and universities share similar characteristics, in that they are both educational institutions, they also have unique needs. Due to the developmental stage (12, 13) and the prevalence of mental disorders and suicide among university students (6, 9, 38), it is important to identify postvention interventions specific to university students and with it, the impact of suicide bereavement on university students.

This scoping review aimed to answer the following question: *"What is known about suicide bereavement and postvention interventions for staff and students at universities?"*. The term universities will be used to refer to all higher education institutions (HEI's) throughout. The objectives of the review were to: (i) describe the impact of suicide bereavement on staff and students at universities; (ii) identify institutional responses to suicide bereavement at universities; (iii) describe

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postvention interventions at universities. Answering this question and objectives may provide a first step in developing recommendations for further research and guidelines that could assist universities in decision making and most appropriate action following a student suicide.

METHODS

This scoping review was conducted using the Joanna Briggs Institute (JBI) guideline for scoping reviews (39), which builds on the seminal work of Arksey and O'Malley (40) as well as Levac and colleagues (41). The review is reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) checklist (26), which is congruent with the JBI guidelines. A review protocol was developed but not published (see supplementary file). The research question and objectives were developed through an iterative process involving discussion and collaboration of the three authors (SA, JB, KA).

The scoping review parameters were determined using the "PCC" framework as outlined by the JBI guideline on scoping reviews (39):

Participants

The scoping review focussed on staff (both academic and non-academic) who were employed at universities or institutions of higher learning in any capacity. Students (undergraduate and postgraduate) at universities or institutions of higher learning were also be included.

Concept

The concept of interest for this scoping review was suicide bereavement and postvention interventions and activities that are related to support for staff and students following suicide on campus.

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Context

Studies where research was done on university campuses, or the focus of the research includes staff and students on university campuses or institutions of higher learning globally were included in this scoping review.

Patient and public involvement

Patients or the public were not involved in the design or conduct of this scoping review. The experiences of the authors working with university students informed the need to explore the review question.

Search Strategy

As recommended by the JBI guideline (39), a three-step search strategy was utilised. Firstly, the first author (SA) conducted a preliminary search of Academic Search Premier and PubMed to identify relevant articles in August 2021. SA consulted two expert librarians at Stellenbosch University, to develop a comprehensive search strategy using the words contained in the titles and abstracts of relevant articles and index terms used to describe articles. The two librarians and KA also conducted the searches independently to ensure that the search string was accurate and no errors were identified. The search string comprised a variety of search terms, including MeSH terms, synonyms and variant spellings, connected by Boolean operators. All identified keywords and index terms were included, and this search string (see Table 1) was used across the following databases: PubMed, PsycINFO, MEDLINE, CINAHL, Africa-Wide Information, PsycARTICLES, Health Source: Nursing/Academic Edition, Academic Search Premier, SocINDEX (EBSCOHOST); Cochrane Library, Web of Science, SCOPUS. These databases were selected because they provide a wide range of interdisciplinary literature. In PubMed the following words were filtered using title/abstract: suicide[tiab], (postvention[tiab] , “psychosocial intervention”[tiab], "post suicide"[tiab]. The searches were not limited by date of publication or location, but were limited to publications in English. We elected to include only peer-reviewed articles to ensure credible studies were included. The reference lists of included full-text articles and systematic reviews were hand searched for additional references.

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Table 1. Search string used across databases

Search string
("college student" OR "university student" OR undergraduate OR postgraduate OR lecturer OR faculty OR “administrative staff” OR “administrative personnel” OR “support staff” OR "educational personnel") AND suicide AND (postvention OR intervention OR bereavement OR grief OR debrief OR debriefing OR "crisis intervention" OR “psychosocial intervention” OR "support after suicide" OR "survivors after suicide" OR "post suicide") AND (university OR college OR "institution of higher learning" OR campus OR “higher education”).

Study selection

SA conducted the searches (with the assistance of the two librarians and KA) in September 2021 and updated them in June 2022. We followed two independent screening levels for selecting studies for inclusion. Table 2. outlines the inclusion criteria.

Table 2. Inclusion criteria

Inclusion
i. The study population consists of university/HEI students and staff. If a study included other populations such as secondary students, and we could not differentiate the results, it was excluded. If the differentiation of the results was clear that they belonged to university students, it would have been included
ii. The study report data on suicide bereavement or postvention interventions for university/HEI students or staff
iii. The study used qualitative, quantitative or mixed methods as primary research (no study design limitation imposed)
iv. The study was published in English as a peer-reviewed paper

The first level was a title and abstract review, and the second was a full-text review. For the first level of review, Researcher SA uploaded all identified citations from the database searches into EndNote (40) and removed duplicates. Thereafter, SA imported all citations into Rayyan QCRI (41) and removed further duplicates identified by Rayyan QCRI (41). Two reviewers (SA and EB) screened and selected titles and abstracts independently according to the inclusion criteria. Twenty-nine (n=29) full-text articles were assessed with 17 articles included in the final review. Ten disagreements

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on study selection were resolved through a consensus discussion. Reasons for disagreement included lack of clarity regarding the study population or whether a study was a peer-reviewed publication. Figure 1. summarises the search and selection process (42)

Data extraction

The researchers developed and piloted a Microsoft Excel data extraction form based on JBI data extraction template (39, 43). After piloting the tool, the researchers knew to include the three aspects which formed the basis of the three objectives (impact of suicide bereavement, postvention interventions at the university and institutional response). Researcher SA extracted information on author, year, journal, affiliation, country of origin, country income group according to the World Bank classification (44), aims, population characteristics, core data on methodology and key findings from each of the 17 included articles. In line with the review aims, information on postvention interventions, definitions of postvention, impact of suicide bereavement, institutional responses, practice implications and recommendations for further development were also extracted. An audit was done by EB on all the articles to ensure the accuracy of extracted data. No errors were identified. Supplementary Table 1 provides an overview of the included studies.

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Quality assessment

SA conducted a quality assessment by using an adaptation of the JBI critical appraisal checklists (45). This quality assessment was audited by ZS. Each item on the checklist was given 1 if scored 'yes' or 0 if scored 'no'(45). A total score was calculated for each study which resulted in an overall rating against set criteria of poor quality (less than 50%), moderate quality (50%-80%) and high quality (81%-100%). Most studies received a rating of moderate quality (n=15) and two were low quality. No studies were excluded due to study quality.

Data synthesis

Data were summarised into a descriptive and narrative synthesis due to the variation in study designs to answer the following questions from university settings: describe the impact of suicide bereavement on staff and students at universities; identify

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institutional responses to suicide bereavement at universities and describe postvention interventions at universities. Results are presented firstly as a descriptive numerical summary (46) (study characteristics) followed by key findings from the included studies.

RESULTS

Study characteristics

The included articles were published between 1989 and 2021 (Supplementary Table 1). Most articles (n=8) were from the USA (47-53), seven articles from the UK (54-60) and two from Canada (61, 62). The article study designs included ten quantitative studies (48, 49, 51-53, 55, 57, 61-63) involving the use of surveys; two qualitative studies using grounded theory and phenomenological approaches (50, 54) which collected data using semi-structured interviews. Five mixed-methods studies used a combination of questionnaires,(47, 56, 58-60) interviews, (47, 59) and open-ended qualitative questions (56, 58-60). Studies that were quantitative or had a quantitative element, used a range of existing outcome measures or developed measures to capture data on grief reactions (47, 51, 55, 57, 61, 62), impact of suicide bereavement (48, 49, 51-53, 55-63) and suicidal behaviours (49) Supplementary Table 1 outlines the outcome measures in greater detail.

Most articles (n=13) identified participants bereaved by suicide through surveys. Two articles (47, 63) recruited students as participants to evaluate their personal responses to those bereaved by suicide. The other two articles (50, 54) were qualitative in nature and staff participants were purposively selected as those exposed to student suicide. All study participants were adults at HEI's and ranged between 18 and 70 years old. Most of the articles (n=14), except one, (47) had more female participants than male participants. Two articles (50, 51) did not state the gender profile of the participants. Many of the articles focused on the perspectives of students (n=9) (47-49, 51-53, 61-63) or both staff and student perspectives (n=6) (55-60) with only two (50, 54) focusing exclusively on the perspectives of staff. Most of the articles (n=16) explored the concept of suicide bereavement. We found no published articles which investigated postvention interventions in university settings.

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Key findings from included articles

Supplementary Table 1 provides a summary of the key findings of the 17 included articles arranged methodologically. The findings presented below are organised around the review objectives under the headings of: the impact of suicide bereavement on staff and students at universities, institutional responses to suicide bereavement at universities and postvention interventions at universities.

The impact of suicide bereavement on staff and students at universities

Students bereaved by suicide experienced higher levels of general grief reactions compared to those bereaved by other means such as natural causes or accidents (51, 61). In one study, the Scale for Prediction of Outcome After Bereavement (SPOB) (64) was used to predict the outcome of bereavement on students. The SPOB predicted that those students who were suicide bereaved would have difficulty returning to baseline functioning (52). Staff and students had increased suicidal ideation or attempted suicide following their bereavement, and most of them had not sought help for any episode of self-harm or suicidal ideation (57). As a result of their bereavement experience, for some staff and students (25%) who had never considered suicide as an option, suicide became more normalised. This fostered awareness that suicide could provide a way out of extreme distress for themselves or others (56). They suddenly had a new awareness that in a state of extreme distress, they, or anyone they knew, could be vulnerable to suicide (56). In contrast, half of the staff and students expressed a conviction that they would prevent dying by suicide themselves due to the impact they had witnessed and experienced following a suicide death (56).

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For students bereaved by suicide, there was a need to understand the death and the reasons that led to the deceased taking their own life (49, 51, 61). It is as if they needed this explanation to make sense of the suicide. They also felt responsibility that they could have done something to prevent the suicide, and this led to feelings of guilt (49, 51, 55, 61). Some respondents felt like the deceased was punishing them by dying and felt rejected by the deceased (51, 61). Students bereaved by suicide experienced shame and embarrassment which set them apart from other students who mourn non-suicidal deaths (51, 61) They had more perceived stigma (49, 55, 61) and often felt that other people, especially friends, did not understand their feelings about the suicide

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death, putting a strain on relationships (49, 55). Staff and students reported that they avoided using the word 'suicide' as it made other people feel uncomfortable and concealed the cause of death for the same reasons. They also felt the social pressure to no longer be affected by the suicide, so they learnt to hide their expressions of grief (59, 60).

Staff reported physical and psychological responses to student suicide that impacted their personal and professional lives. Firstly, there were the practical tasks to take care of following the death of a student, such as packing up belongings, and initiating administrative processes. Some staff reported that they began to question themselves at perhaps having missed something with the students or not having done more to prevent the suicide (54). Grief following suicide bereavement impacted on staff's abilities to function in the workplace. Staff reported feeling profound sadness, confusion, anxiety, and poor concentration. This led to poor work quality, difficulty working in a team and the loss of self-confidence (58). A small group of staff and students cited an unexpected impact of suicide bereavement in their work. They stated that they used work as a distraction to cope with their emotions and work was also used as a way to make the deceased proud of them (58). Furthermore, the experience of suicide bereavement motivated some of the staff and students to change to careers related to mental health or caring for vulnerable persons (58).

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Institutional responses to suicide bereavement at universities

There were varying views on support received and accessed, with staff citing that institutional processes were unsupportive to staff in a culture that values student mental well-being over staff well-being (58). Staff further described a lack of institutional support offered or available where managers were insensitive to their needs (58). Within work settings, both staff and students described institutional practices that were unsupportive to their grieving process, such as systems for taking compassionate leave where one had to produce a death certificate, additional work responsibilities because of taking time off and difficulty catching up due to decreased work capacity (58). Furthermore, university administrators identified challenges to responding appropriately to student suicide on campus. These included a lack of

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postvention training received as part of their role and challenges around notification procedures communicating to the university community about the student death by suicide in a timeous manner before social media platforms shared the news, often before the family had been officially informed. Another challenge for university administrators was balancing their desire to honour the memory of the deceased student while minimising the risk of suicide contagion on campus (50).

Staff and students felt that the way that support efforts could be enhanced following suicide bereavement would be to offer support proactively and consistently over time, especially practical support (60). Practical support that was seen as valuable included childcare, help with housework and general administration. Employers and teaching staff could offer practical support by granting time off, extending deadlines and rescheduling exams (60). Staff and students could also outline their reasons for not seeking support. These included: fear of asking for support, negative experiences of previous attempts to access support, feeling that support would not benefit them and fearing judgement at their need for psychological support (60). One study found that students bereaved by suicide were less likely to receive informal support than those bereaved by natural causes (57). Another study reported that staff and students received informal support from family and friends and said this support was valuable in coping with their grief (60). Staff and students also expressed the need for professional support, but very few accessed formal support (60). Some students felt they did not receive any support and that others were unhelpful (52, 53).

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Postvention interventions at universities

Of the 17 articles included in this scoping review, none spoke directly to any postvention interventions at the respective institutions.

Discussion

The staff and students bereaved by suicide in this review experienced higher levels of grief reactions when compared to bereavement by non-suicide deaths impacting on their personal and occupational functioning. Despite this, the findings demonstrate how staff have been largely marginalised from this research with a focus on university students. Only two studies (50, 54) focused exclusively on staff experiences. This bias

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towards studying the experiences of students is understandable, given that universities are set up for students; however, it is important to include staff as they have important support needs also. The staff in this review were responsible for supporting students, attending to practical tasks and informing students following a suicide death (50, 54). This raises questions about the responsibilities and expectations placed on staff and whether these are realistic. There is increasing awareness of employer responsibilities for the health and well-being of staff and the safety of students (65).

Following their bereavement experience, for some staff and students, suicide became more normalised and increased their awareness that suicide could be a way out of distress (56). This has some implications for suicide contagion among university students and staff. Mueller (66) describes the suicide contagion process where the suicide attempt of a friend can transform the distant idea of suicide into a way an individual can express themselves. Miklin and Mueller (67) further identify that suicide bereavement in itself is not inherently risky, but it is how the bereaved person makes sense of the suicide that may contribute to the risk. Among the staff and students in this review, there was a need to make sense of the suicide (49, 51). This element for support may need to be considered in any potential interventions for staff and students. Recently, some evidence has pointed to peer-led interventions as a way to support those bereaved by suicide or experiencing suicidality (68, 69). This creates an opportunity for these peer-led interventions to be used with university students and staff.

Staff and students experienced support as both helpful and unhelpful. This creates an opportunity for support measures to be enhanced and access to support improved, especially through strategies that reduce the social stigma attached to accessing mental health services (2). One way to improve access is through using online support services such as online forums (70, 71) or remote services (72).

The articles that reported the gender profile of participants had more female than male respondents, a trend that has also been observed in suicide bereavement literature more broadly (73, 74). In published suicide research there is a gender imbalance with 60 percent to 90 percent of participants identifying as women (75). This introduces bias because only women are reporting on the suicide bereavement experience.

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Future research should explore the perspectives of males and gender nonconforming individuals to gain a diverse perspective on the suicide bereavement experiences.

A systematic mapping of postvention research over the last 50 years (76) has identified the need for more intervention studies within postvention research. This review also highlighted this gap as it did not identify studies on postvention interventions at universities. Although we primarily sought out to explore both suicide bereavement and postvention interventions among staff and students at universities, we found literature that only focuses on suicide bereavement among staff and students conducted in high-income countries. This mirrors a trend in postvention literature where 93% of research is concentrated in high-income countries, particularly (USA, UK, Canada, Australia and Sweden) (76) when 77 percent of global suicides occur in low-and-middle-income countries (1).

The strength of this review was using a robust methodology to identify some critical gaps in the postvention literature. The findings of this review should be considered within the following limitations. The studies included in this review were limited to peer-reviewed in English, so potentially relevant articles may have been missed if they were available in another language. The inclusion of peer-review articles was to introduce a level of rigour in this scoping review. The review also captured articles from high-income countries with an inadvertent exclusion of low-middle-income countries. Grey literature was excluded and potentially relevant articles that could change the review's outcome could have been missed. Some higher education providers in other countries do not have the word “college” or “university” or “campus” or “higher education” in their descriptors. Therefore, there is the potential that some relevant studies have not been identified in this scoping review.

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Conclusion

This review set out to examine suicide bereavement and postvention interventions on university campuses. The review identified studies focusing on suicide bereavement but no studies on postvention interventions on university campuses.

Nonetheless, universities have the potential to be effective sites for interventions but there is not a universal solution that will meet the needs of all institutions. HEI’s are

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not heterogeneous in nature, and this would need to be considered when designing interventions. Some HEI's have distance students, students off campus, some are small and others large. There is a need for postvention research to move beyond descriptive studies to focus on interventions.

ACKNOWLEDGEMENTS

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AUTHOR CONTRIBUTIONS

This scoping review was developed by the intellectual contributions of all the authors. All authors were involved in developing the review question and conceptualising the approach. SA developed and tested search terms in consultation with subject librarians. SA in consultation with JB and KA developed the data extraction form. SA reviewed all articles for inclusion, and no discrepancies were referred to a third reviewer. KA and JB contributed to drafting and reviewing the manuscript prior to submission.

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10 ## COMPETING INTERESTS STATEMENT
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15 ## ETHICS APPROVAL
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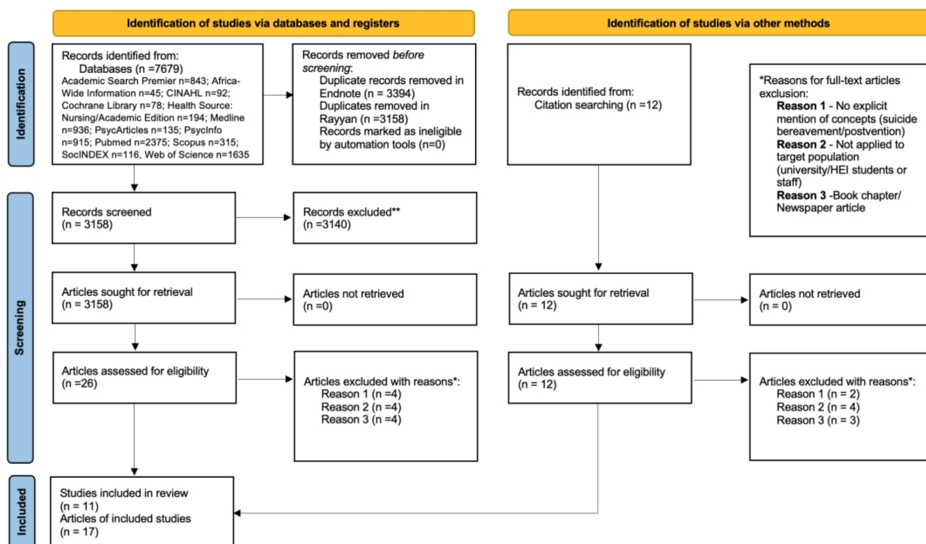

Figure 1. PRISMA Diagram

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Supplementary Table 1. Articles included in the review

Authors (year) Location	Design and methods	Participants	Instrument/Measures	Key Findings
QUALITATIVE STUDIES				
Causer et al (2021) (43) UK	Qualitative Grounded theory	*N* = 19 Staff at HEI's: *n* = 8 Male (42%) *n* = 11 Female (58%)	Survey and Interviews developed and conducted by the authors.	Staff described how in "bearing witness" to student suicide that all subsequent experiences were shaped. This included practical tasks immediately following the death by suicide, physical, emotional and psychological changes and experiences of support.
Rompalo et al (2021) (44) USA	Qualitative Phenomenology	*N* = 8 student affairs administrators Gender not stated	Online interviews	HEI administrators identified three main challenges i) lack of postvention training ii) managing notifications about the student death before it gets announced on social media iii) balancing remembering the student with a memorial while minimising the risk of suicide contagion on

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				campus. HEI administrators also stated that there are those that felt that by having memorials one was "glorifying" the deceased student.
		MIXED METHOD STUDIES		
Allen et al (1993) (45) USA	Mixed methods	*n* = 30 male (50%) *n* = 30 female (50%) undergraduate university students. Mean age 21 years. 75% Caucasian, 15% African-American, 9% other ethnicity	State-Trait Anxiety Inventory and interview (46)	Those bereaved by suicide are perceived to be different from individuals bereaved by other causes of death. Individuals bereaved by suicide are also viewed as more psychologically disturbed and more able to prevent the deaths compared to accidental or natural deaths.
*Pitman et al (2017b) (47)	Mixed methods	*N* = 429 staff and students at British HEI's bereaved by suicide:	Online questionnaire developed by the authors with 119 closed quantitative questions and 20 open ended qualitative questions.	Following their experiences of suicide bereavement, the respondents saw suicide as a tangible option, identified their shared vulnerability to

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UK	(Quantitative cross-sectional; Qualitative descriptive)	Male: not stated Female: 82% (number not stated) Mean age: 25.3 years	one out of 20 questions were the focus of this report.	suicide and made personal determination to avoid dying by suicide.
*Pitman et al (2018a) (48) UK	Mixed methods (Quantitative cross-sectional; Qualitative descriptive)	*N* = 420 staff and students at British HEI's bereaved by suicide: *n* = 71 Male(17%) *n* = 349 Female (83%)	Online questionnaire developed by the authors with 119 closed quantitative questions and 20 open ended qualitative questions. 2 out of 20 questions were the focus of this report.	In the quantitative responses, the majority of the participants (75%) reported receiving informal support from friends. 41% of those who received support also received support from a mental health professional. The participants were also able to describe the experience of the support received, articulate specific support needs such as proactive support, and also outline reasons for not seeking support because they believed they would not find support valuable.
*Pitman et al (2018b) (49) UK	Mixed methods (Quantitative cross-sectional; Qualitative descriptive)	*N* = 460 staff and students at British HEI's bereaved by suicide: *n* = 76 Male (17%)	Online questionnaire developed by the authors with 119 closed quantitative questions and 20 open ended qualitative questions.	The respondents bereaved by suicide noted specific aspects of grief which impacted their work performance, particularly sadness, poor

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		n = 384 Female (83%)	2 out of 20 questions were the focus of this report.	concentration, confusion and anxiety. Respondents also cited structural challenges in work and educational settings, such as lack of support.
*Pitman et al (2018c) (50) UK	Mixed methods (Quantitative cross-sectional; Qualitative descriptive)	*n* = 27 staff and students at British HEI's bereaved by suicide: *n* = 76 Male (17%) *n* = 384 Female (83%)	Following cross-sectional survey participants invited for face to face interview	Most of the respondents bereaved by suicide who were non-British perceived that others blamed them or their relatives and friends as being responsible for the decedent's suicide. They further described that they experienced a lack of support from both friends and professionals and this was experienced as stigmatising.
		QUANTITATIVE STUDIES		
Bailley et al (1999) (51) Canada	Quantitative Descriptive	*N* = 350 university students *n* = 259 bereaved by natural causes *n* =57 bereaved by accident	Grief Experience Questionnaire (52) Impact of Event Scale Texas Revised Inventory of Grief (53) Questionnaire developed by the authors	Individuals bereaved by suicide reported feeling responsible for the person's death compared to the other bereaved groups (accident and natural causes).

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		n = 34 bereaved by suicide *n* = 90 Male (26.2%) *n* = 253 Female (73.8) *n* = 7 Other Mean age: 20.75 years 87.9% Caucasian		
Balk et al (2010) (54) USA	Quantitative Cross-sectional	*N* = 118 undergraduate university students: *n* = 31 bereaved by natural causes *n* = 8 bereaved by accident *n* = 6 bereaved by murder *n* = 4 bereaved by suicide Male: 41% (number not stated) Female: 59% (number not stated) 94% Protestants (number not stated)	Prigerson et al. (2008) revised and shortened the Inventory for Traumatic Grief into a 13-item questionnaire that can be used to measure complicated grief and diagnose prolonged grief disorder (55). Demographic and background questionnaire developed by the authors	In this sample of undergraduate students, four of the decedents died by suicide.

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		69% Caucasian (number not stated)		
Bhaskaran et al (2021) (56) Canada	Quantitative Cross-sectional	*N* = 964 bereaved university students: *n* = 322 Male (33.4%) *n* = 632 Female (65.6%) *n* = 134 bereaved through accidents: *n* = 20 bereaved through homicide *n* = 75 bereaved through suicide *n* = 648 bereaved through illness *n* = 87 bereaved through unknown causes	Patient Health Questionnaire (PHQ-9) (57) Generalized Anxiety Disorder Assessment-7 (GAD-7) (58) Inventory of Complicated Grief (ICG) (59) National Stressful Events PTSD Short Scale (NSESS) (60) The alcohol use disorders identification test (AUDIT) (61)	75 out of 964 deaths were due to suicide. Suicide is categorised under sudden death bereavement. Sudden death bereavement was associated with increased likelihood of complicated grief symptomatology and increased likelihood of generalised anxiety disorder.
McIntosh & Kelly (1992) (62) USA	Quantitative Cross-sectional	*N* = 174 university students: *n* = 63 bereaved by natural causes *n* = 71 bereaved by accidents *n* = 40 bereaved by suicide Mean age: 27.9 years	Demographic questionnaire developed by authors Suicidal Behaviors Questionnaire (63) Impact of Event Scale (64) Revised UCLA Loneliness Scale (65)	Those bereaved by suicide and accidents felt a greater need to understand the death. 87 percent of those bereaved by suicide also indicated that they felt stigmatised by others. There was no difference to the guilt felt by those bereaved by suicide when compared to those bereaved by natural causes and accidents.

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		n = 55 Male (32%) *n* = 119 Female (68%)	Texas Revised Inventory of Grief (TRIG) (53)	
*Pitman et al (2016) (66) UK	Quantitative Cross-sectional	*N* = 3432 HEI staff and students who had experienced a sudden bereavement of a close contact. *n* = 2106 bereaved by natural causes *n* = 712 bereaved by sudden unnatural causes *n* = 614 bereaved by suicide *n* = 648 Males (19%) *n* = 2784 Females (81%)	Online questionnaire developed by the authors. 10-item stigmatization subscale of the Grief Experience Questionnaire (GEQ) (67). Secondary measures three related GEQ subscales: shame, responsibility and guilt (52)	The group of those bereaved by suicide had higher shame, stigma, guilt and responsibility scores when compared to those bereaved by other means.
*Pitman et al (2017a) (68) UK	Quantitative Cross-sectional	*N* = 3432 HEI staff and students who had experienced a sudden bereavement of a close contact. *n* = 2106 bereaved by natural causes *n* = 712 bereaved by sudden unnatural causes *n* = 614 bereaved by suicide *n* = 648 Males (19%)	Online questionnaire developed by the authors to elicit quantitative data on sociodemographic and clinical characteristics. Composite International Diagnostic Interview screen for lifetime depression (69) Stigma subscale of the Grief Experience Questionnaire (70)	Individuals bereaved by suicide were significantly less likely to receive informal support compared to those bereaved by natural causes and likely to report delayed receipt of support. In this sample 25 percent (one in four) people bereaved by suicide had received no formal or informal support. 6 percent of the sample bereaved by

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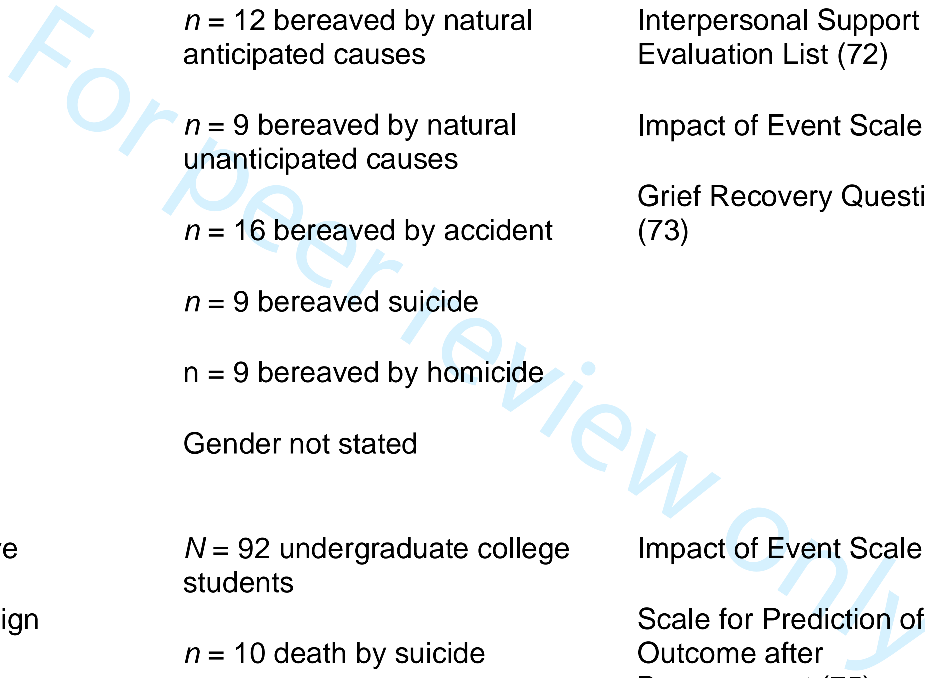
		n = 2784 Females (81%)		suicide reported attempting suicide since the bereavement.
Silverman et al (1994) (71) USA	Quantitative Cross-sectional	*N* = 55 college students bereaved in the last 5 years *n* = 12 bereaved by natural anticipated causes *n* = 9 bereaved by natural unanticipated causes *n* = 16 bereaved by accident *n* = 9 bereaved suicide n = 9 bereaved by homicide Gender not stated	Grief Experience Questionnaires (52) Interpersonal Support Evaluation List (72) Impact of Event Scale (64) Grief Recovery Questions (73)	Those bereaved by suicide reported higher levels of general grief, loss of social support, stigma and feeling responsible for the death. They also experienced a greater need for an explanation about the cause of death.
Thompson & Range (1990) (74) USA	Quantitative Yoked design	*N* = 92 undergraduate college students *n* = 10 death by suicide *n* = 11 death by accident *n* = 12 Death by anticipated natural causes	Impact of Event Scale (64) Scale for Prediction of Outcome after Bereavement (75) Perceived Social Support Scale (76)	Non-bereaved participants imagined those bereaved by suicide as receiving more support than actually occurred.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		n = 13 death by unanticipated natural causes Mean age: 20.25 years. *n* = 36 Male (39%) *n* = 56 Female (61%)		
Thompson & Range (1993) (77) USA	Quantitative Yoked design	*N* = 112 undergraduate college students *n* = 18 bereaved by suicide *n* = 13 bereaved by accident *n* = 10 bereaved by anticipated natural causes *n* = 10 bereaved by unanticipated natural causes *n* = 5 bereaved by homicide Mean age: 20.5 years old *n* = 32 Male (29%) *n* = 80 Female (71%) An Imagined Group (*n*=56 potential comforters) reported no bereavement within the past two years and no experience of comforting a bereaved person in	Impact of Event Scale (64) Multiple Affect Adjective Check List-Revised Perceived Recovery (78) Interpersonal Support Evaluation List (72) Perceived Recovery (75) Perceived Social Support Scale (76) Helpful/Unhelpful Support (79) Theoretically based guidelines for scoring facilitativeness of support developed from interviews with bereaved persons (80) Scale for Prediction of Outcome after	Individuals bereaved by suicide remembered receiving support that was unhelpful and filled with blame while the non-bereaved individuals imagined giving more support.

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		the past year. Each person was individually matched on gender and age to a bereaved person.	Bereavement adapted from Parkes (81)	
Thornton et al (1989) (82) USA	Quantitative Descriptive	*N* = 89 undergraduate university students *n* = 28 Male (31%) *n* = 61 Female (69%)	Personal and social role functioning questions adapted from Hammen and Peters (1979) (83)	When death was caused by suicide males were perceived better as a close friend or club member than females. When a child or adolescent died by suicide, more blame was attributed to the griever. The participants perceived the deceased was as having been more psychologically unstable when death was by suicide rather than by illness.

*Note: these six articles are part of a single study by Pitman and colleagues

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Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	1, 2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	2, 3, 4,5
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	4
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	A protocol exists but not published
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	5,6
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	6,7
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	6,7
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	6, 7
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	7
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	5, 6
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	7

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SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	8
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	2, 7, 8
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	2, 6, 7,8, 9
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	7
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	8-12
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	8-12
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	1, 12-14
Limitations	20	Discuss the limitations of the scoping review process.	1, 14
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	1, 14
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	15

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.
* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.
† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).
‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.
§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.

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