

**Posttraumatic Growth Among Suicide-Loss Survivors:
An Updated Systematic Review and Meta-Analysis Protocol**

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Abstract

Background: Losing a loved one to suicide is an event which can have strong and potentially traumatic impacts on the lives of the bereaved survivors, especially regarding their grief which can be complicated. These bereaved individuals are also less likely to receive social support following their bereavement. However, besides these adverse impacts, there is growing evidence to support the concept of posttraumatic growth following suicide bereavement. Posttraumatic growth is personal improvement that occurs as a consequence of experiencing a traumatic or extremely challenging event or crisis. Only one systematic review and meta-analysis on posttraumatic growth following suicide bereavement has been conducted; this protocol is for the planned systematic review and meta-analysis update of the original systematic review and meta-analysis, as the original review collected its data in 2018.

Method: This protocol outlines the planned procedures of the updated systematic review and meta-analysis. This review and its protocol have been registered with PROSPERO (Registration Number: CRD42024485421). MEDLINE, PsycINFO, Embase, CINAHL, Scopus, and Web of Science (Core Collection) will be examined, and the search results will be imported to Covidence where title and abstract screenings, full text screenings, and data extraction will occur. The inclusion and exclusion criteria for this updated review match those in the original review: i) the study population must contain participants bereaved by suicide, ii) the study data must be quantitative, iii) the study must report data on posttraumatic or stress-related growth. The original review conducted its search prior to 2019; thus, this updated review searched databases for the timeframe of January 2019 to January 2024. The updated meta-analysis will synthesise data from both the original and updated reviews to examine trends over time.

Discussion: The results of this updated systematic review and meta-analysis will be used to examine key relationships and findings regarding posttraumatic growth in individuals bereaved by suicide. The discussion will also investigate the findings of this updated review in comparison to the findings of the original review. Any differences would be highlighted.

Keywords: *suicide, bereavement, posttraumatic growth, suicide-loss survivors, trauma, systematic review, meta-analysis*

Posttraumatic Growth Among Suicide-Loss Survivors: An Updated Systematic Review and Meta-Analysis

When someone dies by suicide, those who lose this individual in their lives often face significant stress. These feelings can be inundating and are often accompanied by a sense of complicated grief and, at times, depression (Levi-Belz & Hamdan, 2023). It is a tragic event that can generate negative emotions as well as many questions which may be left unanswered in the minds of these surviving individuals. Additionally, this population of people bereaved by suicide is at an increased risk of suicidal behaviour themselves (Pitman et al., 2014). Based on data that over 700,000 people die by suicide each year globally (WHO, 2021), and that for each suicide there are from six family members to 135 community members considered to be bereaved or exposed, respectively (Andriessen et al., 2017; Cerel et al., 2019), up to 94.5 million can be affected by suicide annually. Thus, many people affected by suicide loss each year are subsequently at increased risk of dying by suicide themselves.

There are commonalities between bereavement of suicide and that of other forms of death; however, some features of suicide bereavement are more pronounced, such as feelings of guilt, blame on self or others, or a longing for answers (Andriessen et al., 2017; Grad, 2011). While all bereaved people may experience feelings of grief, loss, and depression, people bereaved by suicide specifically can begin to develop symptoms of posttraumatic stress disorder (PTSD; Mitchell & Terhorst, 2017; Tal Young et al., 2012). However, some individuals show signs of posttraumatic growth (PTG) more so than symptoms of PTSD. PTG is personal improvement that occurs as a consequence of experiencing a traumatic or extremely challenging event or crisis. Literature has begun to show that, on average, posttraumatic growth (PTG) occurs more often than does the development of pathological disorders following exposure to a traumatic event (Tedeschi & Calhoun, 2004; Wu et al., 2019). This is, of course, not to say that PTG is always the result of trauma, but rather, psychological suffering allows the opportunity for a person to grow and for new meaning to flourish in the face of trauma. An inverted U-shaped curve best describes the relationship between developments of PTG – both too much and too little suffering are detrimental to the development of PTG (Mattson et al., 2018; Jian et al., 2022). This concept of PTG following a traumatic event (Tedeschi & Calhoun, 1996) has since been applied to learning more about the bereavement experiences of individuals bereaved by suicide. Some authors have also utilised the phrase *personal growth* (Feigelman et al., 2009) or *stress-related growth* (Park et al., 1996) in place of PTG. This current study will use the terminology of PTG rather than personal growth or stress-related growth.

For those who lose someone to suicide, there can be variables that affect their desire or willingness to seek both formal and informal help and work towards the development of PTG. Each of these variables can influence how well someone bereaved by suicide copes with and grows following their loss. For example, some individuals who have experienced suicide bereavement have reported that their primary support came from non-professional sources, and that they were disappointed by their family and friends' responses to their bereavement (Pitman et al., 2018). Suicide and the survivors' grieving process can also be seen from a variety of perspectives depending on the culture from which someone comes, such as being seen as stigmatised, taboo, and isolating (Chapple et al., 2015; Barnes, 2006). Along with these

responses, some individuals have reported generally negative attitudes from professional support systems such as tactlessness and being unaligned in the grieving process (Peters et al., 2016). Unfortunately, these detrimental experiences can be an additional stressor on top of what can already be a tragic and intense time of grieving. These factors could contribute to why up to 25% of people bereaved by suicide receive neither informal nor formal support (Pitman et al., 2017). Each of these variables (i.e., poor support, stigmatisation, tactless professional help, etc.) can hinder PTG development.

This systematic review and meta-analysis is an update of a prior systematic review and meta-analysis conducted by Levi-Belz et al. (2021). Our searches have found that the latter is the only one to ever be conducted on this topic. As their original review gathered data from literature prior to 2019, this review will include data found from searches between the timeframe of January of 2019 to January of 2024. This updated meta-analysis will synthesise data from both the original and updated reviews to search for any new or consistent trends. With the paucity of understanding that exists on this subject, examining new literature, in conjunction with the prior review, could allow for a more in-depth understanding of which factors facilitate PTG in people bereaved by suicide. The aforementioned evidence suggests that PTG can and does occur following suicide bereavement; therefore, investigating which factors might facilitate, as well as detract from, PTG development could greatly benefit people bereaved by suicide.

Method

This systematic review will locate and summarise applicable data from the peer-reviewed literature (Gopalakrishnan & Ganeshkumar, 2013). The Joanna Briggs Institute (JBI) methodology and checklist for conducting systematic reviews will be followed (Santos et al., 2018). The findings will be reported using Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) formatting (Moher et al., 2010). A meta-analysis will be conducted using the data extracted from this update as well as the data from the original review.

Systematic Review Questions

- (a) Can PTG occur in the aftermath of a suicide loss?
- (b) What are the sociodemographic and psychological correlates of PTG among people bereaved by suicide?
- (c) What factors facilitate PTG in the aftermath of suicide bereavement?

Inclusion Criteria

Population

Study populations must include individuals bereaved by suicide. No limitations on age will be implemented.

Study Design

In accordance with the original review, only quantitative studies which report data on PTG will be included. While qualitative studies could offer a more comprehensive perspective on the topic, this update excluded them in order to follow the criteria of the original review. Gray

literature and dissertations will be excluded such that peer-reviewed studies will be the only data involved. This was also done to follow the parameters set by the prior review.

Concept

Studies must report data on PTG in individuals bereaved by suicide. Studies which report data on PTG following various forms of bereavement, but which do not separate effects of suicide bereavement from other forms of bereavement, will be excluded.

Context and Date of Publication

This systematic review and meta-analysis is an update of a prior systematic review and meta-analysis which gathered data prior to 01/01/2019. This update reviews literature published on or after 01/01/2019 and uses the same inclusion criteria as the first study. This updated meta-analysis will include the data from the 2019-2024 range as well as the initial study's findings so as to paint a full picture.

Language and Location

There are no restrictions of language or location.

Search Strategy

As this review is an update of a prior systematic review, the inclusion criterion for date range is publication on or after 01/01/2019. The initial systematic review, upon which this update is based, included all dates up to 31/12/2018 in its search.

Sources: MEDLINE, PsycINFO, Embase, CINAHL, Scopus, and Web of Science (Core Collection)

The search includes the following terms relating to PTG and suicide bereavement:

(Posttraumatic Growth, Psychological/OR posttraumatic growth OR post-traumatic growth OR post traumatic growth OR personal growth OR stress-related growth OR stress related growth) AND (Suicide/OR suicid* OR suicide loss OR suicide survivor* OR suicide bereave* OR suicide grief)

Data Extraction

Using Covidence (Covidence Systematic Review Software, 2024), a title/abstract screening will be done by two reviewers (SW, BM) to exclude articles outside the criteria as well as to remove duplicate search results. A further full text screening will be done in Covidence by the same two reviewers (SW, BM), and studies deemed inapplicable will be excluded; reasons for exclusion of these studies will be recorded. Any disagreements on inclusion or exclusion of an article by the two reviewers will be brought to the review team for further opinion to resolve the dispute. Data extracted will include: author(s), year, location (country), study design, sample size, participants' age and sex distribution, participants' time since onset of bereavement, participants' relationship to the deceased, outcome measures, names of the instruments used, and primary findings of the study. To allow for the analysis of subgroups,

we will also extract information related to demographic factors, loss-related factors, intrapersonal factors, and interpersonal factors (See Analysis of subgroups or subsets below). The authors of the original review have shared their data from the first review which will be used for the meta-analysis portion of this update.

Risk of bias (quality) assessment

Risk of bias will be assessed using the Downs and Black Checklist (Downs & Black, 1998). This tool allows for the overall quality of a study to be assessed via a 27-question checklist. The highest grade possible a study can receive is 28 points for randomised studies and 25 points for non-randomised studies. Scores are then used to determine a quality ranking for each study where quality levels range from poor (<14), fair (15-19), good (20-25), and excellent (26-28). Studies from all quality levels will be included as there is a paucity of literature on this topic; however, inclusion of any "poor quality" articles will be addressed in the limitations of this updated systematic review and meta-analysis.

Strategy for data synthesis

Analysis will be conducted in RStudio (RStudio Team, 2023). When studies were not reporting r coefficients, raw effects will be converted to r coefficients using the R package effect size 0.8.3 (Ben-Shachar et al., 2020). Prior to conducting the analysis, we will apply a Fisher's r -to- z transformation to the extracted effect sizes. Sampling variances and standard errors for the effect sizes will be calculated using the R package esc 0.5.1 (Lüdtke, 2022).

Random-effects meta-analyses will be conducted using the R package metafor 4.4.0 (Wolfgang, 2023). This approach posits that individual study effects deviate not solely due to sampling error but also stem from another source of variance (Hedges & Vevea, 1998). Heterogeneity will be assessed by Cochran's Q , I^2 statistics, τ^2 , and prediction intervals as recommended by Borenstein (2023). Publication bias will be assessed visually via a contour-enhanced funnel plot (Peters et al., 2008) and also via Egger's regression test. To identify and assess the impact of potential outliers on the pooled effect and heterogeneity, influential analysis will be conducted using the R package dmetar 0.1.0 (Harrer et al., 2019), utilizing the leave-one-out method and the Baujat plot.

Analysis of subgroups or subsets

In line with the original review, moderating factors will be categorised into four categories with effect sizes calculated for each subsequent variable. Examples below are from the original review:

Demographic factors (e.g., age, gender, race, religious affiliation, educational level, marital status, voting/civil involvement)

Loss-related factors (e.g., grief experience, time since loss, closeness to and type of relationship with the deceased)

Intrapersonal factors (e.g., resilience, coping, rumination, personality, optimism, emotional experience)

Interpersonal factors (e.g., self-disclosure, social support, help-seeking, suicide stigma and secrecy, interpersonal burdensomeness, lack of belonging, attachment style)

Details of original review of the same topic by the previous authors

Levi-Belz, Y., Krysinska, K., & Andriessen, K. (2021). 'Turning personal tragedy into triumph': A systematic review and meta-analysis of studies on posttraumatic growth among suicide-loss survivors. *Psychological Trauma: Theory, Research, Practice, and Policy*, 13(3), 322-332. <https://doi.org/10.1037/tra0000977>

Results

This updated systematic review and meta-analysis will extract data from the articles which are found via the searches. This data will then be analysed, and a meta-analysis will be conducted using the data from both the articles of this updated search as well as the articles from the original review's search. Doing so will allow for any varying or static trends to be revealed. Moderating factors will be examined to determine which variables may influence PTG development in people bereaved by suicide.

Discussion

A discussion will examine the key relationships and findings identified in the results section. These findings will then be discussed in relation to three research questions posed by this review. The discussion will also investigate the findings of this updated review in comparison to the findings of the original review. Any differences would be highlighted. We anticipate the moderating variables will have varying effects on PTG and will deliberate on any potential correlational relationships as this could emphasise which specific factors are correlated to greater PTG facilitation. Future work and subsequent research which could build upon the findings of this updated review will be discussed. The limitations of this review will be considered as well.

This article will be submitted for peer-reviewed publication. It will also be part of a thesis submitted to the University of Strathclyde.

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Conflicts of Interest

The authors declare no conflicts of interest.

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