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ORIGINAL ARTICLE

Suicide exposure experience screener for use in therapeutic settings: A validation report

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Abstract

Introduction: A brief screener assessing experience of exposure to suicide for use in therapeutic settings is warranted. To examine the concurrent validity of such a screening tool, labeled as the Suicide Exposure Experience Screener (SEES), the associations of the two SEES items: (i) reported closeness with the person who died by suicide and (ii) perceived impact of suicide death with psychological distress are presented.

Methods: Five separate datasets comprising surveys from Australia, Canada, and the United States ($N_{\text{combined}} = 7782$) were used to provide evidence of concurrent validity of closeness and impact of suicide exposure.

Results: Overall, closeness and impact were significantly correlated with measures of global distress across five different datasets, showing small to medium effect sizes. Closeness and impact were also intercorrelated demonstrating a large effect size across all surveys. This report used cross-sectional data and comprised varied sample sizes across different datasets that influenced statistical significance of obtained effects and did not tease apart the roles of cumulative exposure of suicide and prolonged bereavement in experiencing global distress.

Conclusion: The SEES has clinical utility in determining psychological distress in bereaved individuals and is recommended for use in therapeutic settings.

KEYWORDS

bereavement, closeness, impact, psychological distress, scale validation, suicide exposure, therapy

INTRODUCTION

With 3000 suicide deaths occurring in Australia each year and more than 700,000 suicides worldwide (World Health Organization, 2021), suicide is generally recognized as a

major public health issue. Until recently, accurate data examining exposure to suicide among the general population have been lacking. Emerging research indicates the prevalence of suicide exposure is far greater than the estimate of six previously offered (Shneidman, 1972),

Myfanwy Maple and Navjot Bhullar equally contributed to the overall manuscript.

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with up to 135 people affected by each death (Cerel et al., 2019). A meta-analysis based on population-based research indicated that past-year exposure to suicide was 4.31% and life time prevalence of exposure to suicide was 21.83% (Andriessen et al., 2017). Additionally, Feigelman et al. (2018) report 51% of a US representative sample reporting knowing at least one person who died by suicide in their lifetime, 35% of whom identified as “bereaved.” Australian data report similar population level exposure (Maple et al., 2019).

Given suicide is a rare and unpredictable event, continued methodological (Maple et al., 2014) and ethical issues (Moore et al., 2013) in designing prospective studies on impact following exposure to suicide exist. This is compounded by an ongoing interest in whether bereavement following suicide is similar or different to other forms of unexpected and/or traumatic death (Kolves & De Leo, 2018) even though researchers continue to report that while suicide bereavement is similar, it is qualitatively different (Jordan & McIntosh, 2011). While time since death does not appear to be strong indicator of distress (Bhullar et al., 2021), deleterious effects from exposure to suicide are numerous and well reported and include poor mental health outcomes, such as depression and anxiety (Cerel et al., 2016), and suicide risk in both kin (Pitman et al., 2014) and non-kin (Maple et al., 2017).

In the research literature, reported closeness and perceived impact related to the suicide exposure have been found to be important factors related to global distress experienced by bereaved individuals. To date, we are unaware of any brief screener to determine the likelihood of psychological distress that may lead to adverse outcomes following exposure to suicide. Research suggests that brief and/or single-item measures provide functional utility, efficiency, and valid reflection of constructs under investigation (Allen et al., 2022) as well as demonstrate evidence of moderate to high content validity (Matthews et al., 2022). Therefore, a brief screener assessing suicide exposure experience for health professionals to use in clinical settings where time and resources may be limited is much needed. In the present study, we provide evidence of concurrent validity of a brief Suicide Exposure Experience Screener (SEES), comprising two items (reported closeness and perceived impact of suicide exposure), in explaining variance in psychological distress, respectively, from five separate survey studies from Australia, Canada, and the United States: (i) Suicide Prevention Australia (SPA Survey), (ii) SANE Survey, (iii) Lifespan Community Survey, (iv) Canadian Suicide Exposure Survey, and (v) University of Kentucky Military Suicide Survey. In the present report, we focussed on suicide death exposure as these data were available across all five survey studies.

METHOD

Participants and procedure

SPA survey

An online survey was distributed through existing networks by a national peak suicide prevention organization, Suicide Prevention Australia (SPA) from April through August 2016. A total of 3220 people responded to the survey, with a final sample of 2346 participants who reported exposure to suicide death and information about the nature and impact of the exposure. The mean age of participants exposed to suicide death was 44.58 years (age range = 18–86, $SD = 11.98$, women = 78.9%, 20.2% men; 0.7% other, and 0.2% preferred not to report their gender) (Maple & Sanford, 2020).

SANE carer survey (hereafter SANE survey)

An online survey was conducted with SANE Australia in 2018 to investigate the needs of carers and their experiences of providing support to people who cared for people who attempted suicide or went on to die. The survey targeted adults (18 years or older) who currently, or have in the past 10 years, provide post-suicide attempt care. A total of 834 people responded to the online survey; 76 cases were excluded for not meeting the inclusion criteria. This resulted in a sample of 666 participants providing data on demographic variables (Maple et al., 2021). For consistency with other survey datasets used here, we used a sample of 92 participants who provided care to the person who attempted suicide had subsequently died by suicide, of whom 89 provided complete data used in the present study. Average age of this sample of carers was 47.54 years (age range = 19–78 years), $SD = 14.51$, 83.7% women, 14.1% men, 2.2% reported as other.

Lifespan community survey (hereafter LifeSpan survey)

A baseline online survey was conducted from February 2017 to March 2018, with participants invited to complete a follow-up survey 12 months after the baseline survey. The purpose of the survey was to monitor changes in stigma and knowledge of suicide, psychological distress, exposure to suicide, suicidal ideation in the five regions which were implementing the LifeSpan suicide prevention framework. Survey participants were adults aged 18 years and over who resided in one of five regions in

New South Wales, Australia, or the Australian Capital Territory, Australia (Shand et al., 2020). The survey collected data on demographics, psychological distress, suicidal ideation, exposure to suicide, etc. Recruitment was through Facebook ads. This study used the baseline survey data ($N = 8987$), with just under half (47.20%) reporting lifetime exposure to suicide death (Mok et al., 2020). Data available for the variables of interest for this study are based on $N = 4189$ participants who reported lifetime exposure to data and responded to the psychological distress scale. Mean age was 44.04 years ($SD = 14.24$), 33.5% identifying as male, 66% identifying as female and 0.5% identifying as neither.

Canadian suicide exposure survey (hereafter CSE survey)

An online survey was conducted from May 2019 to July 2020 with adults in Canada to explore the nature and impact of exposure to suicide attempts and deaths, support needs and experiences following exposure to suicide, and coping. A total of 630 people provided complete or mostly complete responses to the survey with 557 participants reporting exposure to at least one suicide death, of whom 395 provided complete data used in the present study. The mean age of participants with at least one suicide death exposure was 45.12 ($SD = 13.59$; range = 18–76), with 85.3% of participants identifying as a woman, 12.9% identifying as a man, 0.7% identifying as non-binary, and 1.1% with no answer or other. Data from this study will be published elsewhere.

University of Kentucky military suicide survey (hereafter Kentucky survey)

A random digit dial telephone survey of adults in Kentucky, US, was conducted from July 2012 to June 2013. A dual-frame sample of landline and cell phone numbers weighted to reflect the true distribution of landline only, cell phone only, and dual-use households (full methods described elsewhere, Cerel et al., 2017). Slightly fewer than half (48.3%) reported lifetime exposure to suicide. Of those, full information on impact of the suicide was available on 807 participants. Of the 807 participants for whom impact data were available, 54.2% ($n = 442$) were female, age ranged from 19 to 94 with an average age of 53.55 ($SD = 14.76$) (Cerel et al., 2017). For the present study, complete data were available for 763 participants.

MEASURES

Suicide exposure experience screener (SEES)

Two existing items, used simultaneously across all datasets, comprise the Suicide Exposure Experience Screener (SSES):

Closeness with the person

We used 1-item to assess participants' reported closeness to the person who died by suicide, or where multiple deaths had occurred, on the person whose suicide death was most impactful (Cerel et al., 2017). Closeness was assessed on a 5-point Likert scale ranging from 1 = not close to 5 = very close in response to the question: "How close would you describe your relationship with the person who died?"

Impact of the suicide death exposure

We used 1-item to assess perceived impact for the most impactful suicide death exposure (Cerel et al., 2017). Impact was assessed on a 5-point Likert scale ranging from 1 = had little effect on my life to 5 = had significant/devastating effect on me that I still feel in response to the question: "What effect did this death have on your life?"

Validation measures

Details of the different scales used to assess distress across all five survey studies are below:

Kessler-10 (K10; Kessler et al., 2002) was used to assess psychological distress in suicide exposed and bereaved participants. K10 asks participants to identify how often they experienced the problem (i.e., tiredness, nervousness, and hopelessness) in the last 30 days. Items are assessed on 5-point Likert scale ranging from 1 = none of the time to 5 = all of the time and are summed with higher scores indicating greater levels of distress. Scores on the K10 range from 10 to 50. Cronbach's α s for the three datasets used in the present study were 0.94 (SPA Survey), 0.95 (SANE Carer Survey), and 0.94 (CSE Survey¹).

Distress Questionnaire-5 (DQ5; Batterham et al., 2016) was used to assess psychological distress in the Lifespan survey. Participants are asked how frequently in the last 30 days they experienced distress symptoms, such as: "I felt

hopeless,” “Anxiety or fear interfered with my ability to do the things I needed to do at work or at home.” Items are rated on a 5-point Likert scale ranging from 1 = never to 5 = always and summed to create a composite score with higher scores indicating greater distress. For the present study, baseline data were used, with Cronbach's α of 0.90.

Patient Health Questionnaire (PHQ-9; Spitzer et al., 1999) comprises a depression module, which was used to assess depressive symptoms (as an indicator of distress) in the last 2 weeks in the Kentucky Survey. Items are assessed on a 4-point Likert scale ranging from 0 = not at all to 3 = nearly every day and summed to create a composite score with higher scores indicating severity of depressive symptoms. Cronbach's α was 0.85 in the present study.

Statistical analyses

To test concurrent validity, bivariate correlations (Pearson's r) were used to examine associations of the SEES two items (reported closeness and perceived impact of the suicide exposure) with psychological distress, respectively.

RESULTS

Descriptive statistics

Table 1 shows intercorrelations, means, and standard deviations of key study variables. As expected, reported closeness with the person who died by suicide was significantly associated with high impact and psychological distress, and the more impactful the suicide death, the greater the distress.

Across all surveys but one (SANE Survey), reported closeness with the person who died by suicide explained significant amount of shared variance in psychological distress ranging from <1% to 7% (SPA Survey explained 2%, LifeSpan Survey <1%, CSE Survey 2%, and Kentucky Survey 7%). For the SANE survey, the association between closeness and psychological distress was not significant. On the contrary, perceived impact of the suicide death significantly explained variance in psychological distress ranging from 2% to 14% across all surveys (SPA Survey 5%, SANE Survey 7%, LifeSpan Survey 2%, CSE Survey 5%, and Kentucky Survey 14%).

Both closeness and impact were also highly correlated explaining shared variance ranging from 31% to 52%. Therefore, we combined these two items by taking a sum to create a composite SEES score, with the total score ranging from 2 to 10 and internal consistency coefficients shown in Table 1. The correlations between SEES composite score and psychological distress were as follows:

$r(2344) = 0.20, p < .001$ for SPA Survey (4% shared variance); $r(87) = 0.22, p = 0.036$ for SANE Survey (5% shared variance); $r(4187) = 0.11, p < 0.001$ for LifeSpan Survey (1% shared variance); $r(398) = 0.19, p < 0.001$ for CSE Survey (4% shared variance); and $r(769) = 0.33, p < 0.001$ for Kentucky Survey (11% shared variance).

DISCUSSION

The present study is the first to provide evidence of concurrent validity of the Suicide Exposure Experience Screener (SEES) comprising two items (closeness and impact related to suicide exposure) with psychological distress. We used data from three separate surveys of Australian community members, one from Canada and one from the United States; all samples were adults aged 18 years or older exposed to suicide death. Although the relationships between two SEES items and psychological distress were modest across all studies, the small effects are to be expected due to variation in levels of exposure and the multitude of other factors that contribute to distress. Nevertheless, the consistency of the effects indicates that higher closeness and greater perceived impact of suicide death are associated with increased psychological distress. Such a brief screener may have functional utility in identifying those more affected by suicide death exposure and is efficient to use in clinical settings where time and resources are limited.

Intuitively the closer the relationship someone has to a person who has died will contribute to greater emotional impact and psychological distress. Members of this team have reported this across multiple studies in recent years (c.f. Cerel et al., 2017; Maple & Sanford, 2020; Maple et al., 2019). Yet, there remains little evidence for, or attention to, developing an evidence base for suicide bereavement interventions (Andriessen et al., 2019; Maple et al., 2018). This is despite evidence that individuals bereaved by suicide are highly distressed and are at risk of suicide (Hill et al., 2020; Maple & Sanford, 2020; Pitman et al., 2014). These two SEES items, now used across a variety of studies, examined here in relation to five datasets, demonstrate that overall, those who report higher closeness and greater perceived impact of suicide death, are indeed those for whom psychological distress is also higher. Using the two SEES items in a therapeutic setting allows for a simple screening tool in clinical practice to assess for what may become problematic distress associated with suicide exposure with or without a bereavement response (Bhullar et al., 2021). Not surprisingly, the correlation with a global measure of psychological distress is consistently stronger for the perceived impact item than the closeness item across the five survey studies. Thus, in the

TABLE 1 Intercorrelations, Means and Standard Deviations (SD) of the Key Study Variables

Variables	Reliability index (r_{SB})	1.	2.	3.	4.	5.
SPA Survey ($N = 2346$)						
SEES	0.83					
1. Closeness		-	0.72***	0.14**	-	-
2. Impact			-	0.23***	-	-
3. Psychological distress (K10)				-	-	-
Mean (SD)		3.39 (1.46)	3.67 (1.26)	20.78 (8.78)	-	-
SANE Survey ($N = 89$)						
SEES	0.72					
1. Closeness		-	0.56***	0.14	-	-
2. Impact			-	0.26*	-	-
3. Psychological distress (K10)				-	-	-
Mean (SD)		4.15 (1.20)	4.26 (1.09)	26.67 (10.42)	-	-
LifeSpan survey ($N = 4189$)						
SEES	0.73					
1. Closeness		-	0.58***	-	0.06***	-
2. Impact			-	-	0.14***	-
4. Psychological distress (DQ5)				-	-	-
Mean (SD)		3.26 (1.21)	3.38 (1.23)	-	14.24 (4.82)	-
CSE survey ($N = 395$)						
SEES	0.80					
1. Closeness		-	0.63***	0.13**	-	-
2. Impact			-	0.23***	-	-
3. Psychological distress (K10)				-	-	-
Mean (SD)		3.48 (1.55)	4.05 (1.21)	22.45 (9.66)	-	-
Kentucky survey ($N = 763$)						
SEES	0.76					
1. Closeness		-	0.61***	-	-	0.27***
2. Impact			-	-	-	0.38***
5. Depressive symptoms (PHQ-9)						-
Mean (SD)		2.94 (1.39)	2.61 (1.16)	-	-	4.63 (4.99)

Note: SEES = Suicide Exposure Experience Screener comprising 2 items (closeness and impact). r_{SB} = Spearman-Brown coefficient used as an internal consistency index for 2-item scales. Psychological distress used as a validation measure.

Closeness, Impact, K10, and DQ5 are measured on a 5-point Likert scale (1–5), whereas PHQ-9 is assessed on 4-point Likert scale (0–3). Australian Bureau of Statistics (2012) psychological distress (assessed by K10) categories provide a population level comparison group as 10–15 = low levels of distress; 16–21 = moderate levels of distress; 22–29 = high levels of distress; and 30–50 = very high levels of distress.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

clinical setting only considering relational or emotional closeness is unlikely to be sufficient to understand psychological distress experienced by the bereaved individuals. Even though the reliability index of composite SEES score across five survey studies was satisfactory (ranging from 0.72 to 0.83), the strength of association with psychological distress did not improve after combining the two SEES items into a composite score. We recommend using both items, as part of SEES instead of a composite score of two items, to fully understand the suicide exposure experience

of closeness and perceived impact and their unique relationships with psychological distress for greatest therapeutic insights into an individual's wellbeing. Finally, the relationship between two SEES items, that is, more reported closeness and greater perceived impact of suicide exposure, and increased distress was modest but significant, respectively. This finding suggests that many people exposed to suicide death may not experience heightened distress, but that the exposure to suicide death is a clear risk factor for psychological distress levels.

Limitations & future research directions

This study is not without limitations. First, the present study used self-report measures, which are susceptible to social desirability bias, and the use of a cross-sectional design limits any causal inferences about the obtained effects or their direction. Second, the varying nature of sample sizes influenced statistical significance levels of some of the obtained findings. For example, the SANE Survey dataset is considered relatively small and showed a statistically non-significant association ($r = 0.14$) between closeness and distress (K10). Similarly, for large datasets (e.g., Lifespan Survey), the almost negligible correlation coefficient ($r = 0.06$) between closeness and distress (DQ5) was significant, despite explaining <1% of variance. Therefore, further replication with diverse population groups across different cultural contexts is needed. Third, some of the datasets asked specifically about one suicide death (e.g., SANE Survey participants were reporting specifically on a person they had cared for prior to their death), while the other surveys asked people how many suicide deaths they had experienced, and then, these two SEES items were asked specifically about the “most impactful” or “death that affected you the most.” How cumulative exposure to suicide is experienced in relation to closeness and impact is not yet known, nor is whether divergence across these two items may be present in this scenario which was not found in the datasets used in the present study that focused only on one death. However, there is evidence that those with cumulative impact are at greater risk of suicide, including in occupational settings where exposure to suicide is more common such as members of the national guard (Bryan et al., 2017), first responders (Kimbrel et al., 2016), and health workers (Sanford et al., 2020), and thus, this should be a priority for further examination. Fourth, the relationship of these two SEES items specifically in those experiencing problematic or prolonged bereavement has not been assessed, as our datasets are primarily drawn from community members volunteering to complete an online survey.

Future research should examine the role of bereavement specifically in relation to distress (Feigelman et al., 2017) to separate this from global distress. It may be that a global distress measure does not provide a nuanced distinction between those who may experience significant mental health concerns following exposure to suicide and those who are resilient despite experiencing bereavement. However, in the CSE Survey, where participants were asked to rate their distress related to the suicide exposure with the modified instruction to the K10, the effect sizes remain similar to the other samples. Other socioeconomic conditions also likely play a role and should be considered in future.

How people come to determine the impact they experience may also be related to the meaning they are able to make from the death, which has been shown across the suicide literature as being the main factor differentiating suicide bereavement from other sudden or traumatic losses (Miklin et al., 2019). This would further assist in explaining the high impact reported in those who do not report perceived closeness to the deceased as reported by Bhullar et al. (2021). Further, not all people who are exposed to suicide experience distress and thus resilience to these events is also important to understand (Levi-Belz et al., 2021). This would allow broader insight into how distressed the person is in relation to bereavement which may better inform clinical and non-clinical supportive interventions. Finally, we have only reported on exposure to suicide death. Future research could also examine the validity of SEES in explaining distress in those exposed to suicide attempt and carers of people who attempt suicide.

CONCLUSION

The present study provides the first evidence that closeness and impact items related to suicide death exposure demonstrate concurrent validity with experiencing psychological distress. Given the resource deficit often experienced in clinical practice, the SEES as a brief screening tool is recommended for use in therapeutic settings to understand the bereaved person's distress assessed via reported closeness and perceived impact of suicide death.

CONFLICT OF INTEREST

SPA Survey: Funding: No funding was received for this project. MM was a member elected director on the Board of Suicide Prevention Australia (SPA) when the SPA survey was distributed. Her role did not influence the survey. Enquires related to data availability to MM. Ethics approval was obtained through the University of New England (HE16-030). SANE Carer Survey: Funding: Funding was received from Ian Potter Foundation and Grenet Merrin Foundations. Enquires related to data availability to MM. The project received ethics approval via the University of New England ethics committee (HE17-210). LifeSpan Community Survey: Funding: Paul Ramsay Foundation and Australian Capital Territory Health. Enquires related to data availability to FS. The study received ethics approval from the HNELHD HREC (HREC/16/HNE/399). Canadian Suicide Exposure Survey: Funding: Thompson Rivers University Internal Research Fund. Enquires related to data availability to RS. The project received ethics approval from Thompson Rivers University (101939). University of Kentucky

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ENDNOTE

¹ In the CSE Survey the K10 was modified with instructions to focus on distress related to the suicide exposure. The instructions read: "As you think about the most significant suicide attempt or death you experienced, please use the following rating scale to identify how often you felt the following in the last 30 days"

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