Article

Adverse outcomes in bereaved mothers: The importance of household income and education

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ABSTRACT

Intense and enduring psychological distress has been well-documented in numerous studies on bereaved parents including anxious, depressive, and traumatic stress symptoms. A state of poverty is also known to increase the risk of psychological distress in the general population, yet this variable has not yet been sufficiently evaluated in outcomes specifically for bereaved parents. This study is the first to investigate poverty, education, and parental bereavement while examining the relative risk of other variables as informed by the literature. The findings reveal that poverty was the strongest predictor of psychological distress when compared to others factors which have traditionally been considered significant in parental bereavement. Bereaved parents living in poverty may be less likely to seek support and have fewer available resources. Practice and policy implications are discussed.

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Introduction

Intense and enduring psychological distress in bereaved parents is a well-documented phenomenon in the literature (Sanders, 1980; Thieleman & Cacciatore, 2014; Stroebe, Schut, & Stroebe, 2007). As many as four years after the child's death, nearly one-half of grieving parents report significant anxiety, traumatic stress, and grief-related depressive symptoms (Cacciatore, Lacasse, Lietz, & McPherson, 2014). In one study, bereaved mothers who reported increased health problems were 4.6 times more likely to also report traumatic stress (Murphy et al., 1999). These negative psychological effects can also impair interpersonal relationships. The death of a child family member seemed to increase the risk of marital dissolution (Shreffler, Hill, & Cacciatore, 2012) and higher rates of marital disruption (30.4%) than a comparison group (23.8%) (Rogers, Floyd, Seltzer, Greenberg, & Hong, 2008).

Methodological advances in bereavement research in recent years have improved the quality of research outputs, not least through the introduction of the Integrated Risk Factor Framework (IRFF) (Stroebe, Folkman, Hansson, & Schut, 2006). A key feature of this framework is that variables from a number of domains interact to influence outcomes following bereavement. These variables may include the circumstances of the death (e.g. whether the death was sudden or anticipated, violent, or as a result of the actions of another individual), interpersonal risk factors for the individual (e.g. social support, relationship status), intrapersonal risk factors (e.g. gender, age), nature of the relationship with decedent (e.g. child, young partner, elder parent), and coping mechanisms (e.g. avoidance, rumination). Stroebe et al. (2006) noted that the IRFF is derived largely from bereavement literature relating to the most common types of bereavement such as partner or parent loss and that the factors associated with different types of bereavement, including following the death of a child, merit specific investigation. Yet, to date, socioeconomic status and literacy level and their association with bereavement outcomes in parents have received little research interest.

While being a bereaved parent is considered to increase vulnerability to poor psychological outcomes for individuals and families (Cacciatore et al., 2014), so does low socioeconomic status and education. Clinical depression, anxiety (WHO, 2007) and posttraumatic stress (Parto, Evans, & Zonderman, 2011) are believed to be twice as common in people living in poverty. Lower levels of education have also been associated with all three of these distress states (CDC, 2012; Brewin, Andrews, & Valentine, 2000) in general, non-bereaved populations. Despite this, many studies which have considered the risk factors for psychological distress following bereavement have struggled to recruit participants from poorer backgrounds or with lower levels of education

(Sanders, 1988). Socioeconomic status has not been researched widely in general bereavement and is mentioned even less often in the specific experience of parental bereavement. The socioeconomic cost of bereavement is a new area of research (e.g. Socio-Economic Costs of Bereavement in Scotland Project Research Group, 2013) and this in turn is likely to lead to research in the area of poverty as a potential risk factor for socioeconomic impact, as well as health.

Bereavement research findings, therefore, often include a caveat that the results may be different for people who are not represented in the research, including those with low socioeconomic status or lower literacy levels. The importance of these factors in the adaptation to loss following bereavement therefore merits further investigation.

The present study is the first to specifically investigate poverty and parental bereavement while examining the relative risk of variables informed specifically by parental bereavement literature.

Method

This study is a retrospective, cross-sectional analyses of factors associated with clinical symptoms in an online support forum for bereaved parents. Ethical approval was granted by the Institutional Review Board of the principal investigator's academic institution and by the ethics committee of the non-profit organization which facilitated the online forum where email addresses were registered. All participants gave their informed consent to take part in the beginning of the survey. Details of the methods used are presented here in summary form, in compliance with the the the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): explanation and elaboration guidelines recommended for improving observational research (Vandenbroucke et al., 2007). This type of study predominates in bereavement research when identifying risk factors for bereavement outcomes. The guidelines strengthen such research outputs by providing checklists of information required in reports to give reviewers and readers of research the optimum information to appraise and evaluate research findings.

Instruments

The HSCL-25 (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974; Derogatis, 1992) is a 25-item self-report instrument that contains both anxiety and depression subscales. Respondents were asked to identify the degree to which they had experienced each symptom on a 4-point scale ranging from "not at all" (1) to "extremely" (4). In order to classify clinical cases, we used a cut-off of > 1.75 (average score). This has performed well in identifying depression; research with women found a sensitivity of 0.81 and a specificity of 0.70, and for panic and generalized anxiety disorder, a sensitivity of 0.67 and specificity of 0.73 (Sandanger et al., 1998). The IES-R is a self-report measure which asks respondents to rate 22 difficulties (for example "I felt irritable and angry") to gauge how distressing each particular area has been over the past seven days. Answers are recorded on a 5-point scale ranging from "not at all" (0) to "extremely" (4), and the IES-R is scored by averaging item responses. While there is no agreed upon clinical threshold for the IES-R (Weiss, 2004), it is still used to identify clinical cases (e.g., Samuelson, Lundberg, & Fridlund, 2007). The commonly recognized total sum of 33 (average score of 1.5) had "…a sensitivity of 0.91, a specificity of 0.82, positive predictive power of 0.9, and negative predictive power of 0.84" (Creamer, Bell, & Failla, 2003, p. 1494).

The percentage of the sample who met probable clinical diagnostic criteria for depression was more than one-half (58.0%,

$n=253$) scoring > 1.75 on the overall HSCL-25, while 64.7% ($n=282$) scored > 1.75 on the depression subscale, and 37.8% ($n=165$) scored > 1.75 on the anxiety subscale. For the IES-R, the mean average score was 1.49 ($SD=.88$) for the overall instrument; for the subscales measuring intrusion, avoidance, and hyperarousal, subscale means were, respectively, 1.95 ($SD=1.00$), 1.09 ($SD=0.85$), and 1.40 ($SD=1.16$). Less than half of respondents (44.3%, $n=193$) scored above the clinical cut-off of 1.5. The relationship between prior mental health was assessed using an influence analysis, removing respondents diagnosed with a mental disorder ($n=76$) prior to loss and then reanalyzing data, finding no clinically significant change in any of the results (Cacciatore et al., 2014). Internal consistency was confirmed for the HSCL with Cronbach's $\alpha=0.961$ and for the IESR-R scale with Cronbach's $\alpha=0.945$.

Predictive variables

The characteristics of the sample were measured by collecting information about the loss as well as demographic information relating to the respondents. Demographic factors included age, gender, race/ethnicity, relationship status, religion, education level (options ranging from "did not complete high school" to "graduate degree"), current level of household income including all spousal or partner contributions (options ranging from under $14,000 per year to more than $125,000) and level of household income at the time of the child's death. Participants were asked whether they had a mental health diagnosis prior to the death and if so, what treatment they had received. Relating to the loss, participants were asked if the death was expected, whether they witnessed or were present at the death, whether they saw or held the child after death, the age of the child at the time of their death (gestation if less than full-term), cause of death (open text) and time since the death occurred. The cause of death being violent or non-violent was extrapolated from the parent's textual description of the cause of death. A dummy variable were created for education level higher (some college or technical, bachelor's degree, graduate degree) or lower (did not complete high school diploma or equivalent or completed high school diploma or equivalent.

Procedure

Statistical analysis

Bivariate correlation analyses compared all continuous predictor variables with each outcome variable. Independent t-tests compared the mean anxiety, depressive and PTS symptoms for each categorical predictor variable. Factors found to be univariately significant at $p < 0.05$ were then included in a regression with forward entry method, the recommended method to use with large numbers of predictor variables in an exploratory analysis (Field, 2009). This process tests each factor in the model, selecting the one which explains the greatest variation in outcome scores. The factor which explains the greatest variation is added to the model and then the process is repeated until no more factors can improve the model. The final model demonstrated the relative importance of each factor and how much variance in outcome scores each factor explains. There was a low proportion of missing data (5% for HSCL-25 and IES-R and 10% for PTGI). Only seven respondents failed to answer every item (16 respondents missed one item on the IES-R scale). Missing values were replaced using mean imputation to generate scale-subscale totals. In the overwhelming majority of cases, only one item was replaced. No other missing data were replaced, and available-case analyses were presented. The 'years-since-loss' variable was highly positively skewed and thus was normalized through logarithmic transformation.