Exposure to war-related traumatic experiences among civilians is associated with elevated prevalence rates of major depressive episode and post-traumatic stress disorder (PTSD). Yet, war-related experiences can comprise a broad variety of events and the very nature of certain events has received little scientific attention. Results from research on violent death of significant others and from bereavement in general suggest that war-related bereavement might constitute a significant risk factor for psychopathology above and beyond other war-related events. However, research on war-related bereavement has been very scarce and inconclusive given the limitations either related to not differentiating between deceased family members and friends or to very small samples. We investigated the incidence of mental disorders among a bereaved group of war survivors that has been reported to have high levels of psychopathology: widowed lone mothers who have experienced the war as civilians, have additionally lost their husband during war and have been lone mothers since. Further, we compared these findings with those in non-widowed mothers.

Results

Widowed lone mothers were significantly older (mean 50.1 years (s.d. = 7.9)) than both non-bereaved (mean 47.3 (s.d. = 6.4), t(169) = 2.58, P = 0.01) and bereaved married mothers (mean 46.3 (s.d. = 5.8), t(133) = 2.71, P < 0.001). Further, they reported a lower monthly income (mean €232.2 (s.d. = 163.3)) than non-bereaved married mothers (mean €331.7 (s.d. = 233.5), t(169) = −3.27, P = 0.001) and fewer years of education (mean 6.1 (s.d. = 3.5)) than bereaved married mothers (mean 7.5 (s.d. = 4.1), t(133) = −2.20, P = 0.03). Widowed lone mothers reported a higher number of war-related traumatic events (mean 30.7 (s.d. = 16.14)) than non-bereaved married mothers (mean 23.0 (s.d. = 18.85), t(169) = 2.25, P = 0.03), but not than bereaved married mothers (mean 26.6 (s.d. = 18.6)).

Among widowed mothers, 96% met criteria for major depressive disorder, an anxiety disorder or a substance use disorder, compared with 54.9% of non-bereaved and 60% of bereaved married mothers. None of the married mothers and only six widows met criteria for substance use disorders (dependence on sedatives). Widowed lone mothers reported higher prevalence rates of major depressive disorder (71%), PTSD (82%), generalised anxiety disorder (48%) and suicide risk (45%) than non-bereaved (18.3%, 29.6%, 9.9% and 16.9%, respectively) and bereaved married mothers (25.7%, 25.7%, 25.7% and 22.9%, respectively), all P<0.05. Among widowed lone mothers, 69% suffered from...
prolonged grief disorder. Rates for meeting criteria for PTSD or major depressive episode but not for prolonged grief disorder were 28.0% and 21.1%, respectively.

Sociodemographic, war-related and loss-related variables that differed significantly between groups were included in multivariate logistic regression analyses. Torture was included in the analyses in addition to number of war-related traumatic events as it has been reported as a significant predictor of psychopathology. Finally, group status (widowed lone mothers vs. comparison groups) was entered in the analyses. All variables were entered simultaneously. Widowed lone mothers maintained higher rates of major depressive episode and PTSD than both married groups (all \( P < 0.01 \)). Furthermore, they maintained significantly higher rates of generalised anxiety disorder and suicide risk than non-bereaved married mothers (all \( P < 0.01 \); online Table DS1).

**Discussion**

A decade after war, widowed lone mothers reported very high rates of major depressive episode, anxiety disorders, prolonged grief disorder and current suicide risk. These rates remained significantly higher among widowed lone mothers than among non-bereaved married mothers even after controlling for sociodemographic and trauma characteristics. Generalisation of the findings is limited because of the relatively small sample sizes and recruitment of participants in only one region. Underreporting of sexual abuse and substance use disorders might have occurred, as these may be perceived as unacceptable in the mostly Muslim Kosovo society. No power analysis was conducted prior to the study and some of the analyses might be underpowered. Findings might still be subject to unobserved confounding by war-related and post-war factors. Groups were recruited in different ways, which might have led to higher rates of mental disorders among widowed mothers than among mothers recruited using random sampling. To enhance participation rate, potential participants were contacted at home and thus the interviewers were not masked. However, given that psychopathology was assessed with a structured interview by trained professionals it is unlikely that potential observer bias accounts for the large differences among groups.

Our results indicate that war-related widowhood when paired with lone motherhood is associated with higher prevalence of depression, anxiety disorders and suicide risk than revealed by the general post-conflict literature. Emotional, functional and economic difficulties might influence psychopathology among widowed lone mothers. This population must cope with their own experiences of war, loss of the husband (which meant also the loss of the main breadwinner) and raising children on their own. The accepted norm in Kosovo society that a widowed mother should not remarry, resulting in forced lone motherhood, is likely to negatively affect coping mechanisms and to hamper attempts at mastering socioeconomic circumstances. Thus, lone motherhood is likely to constitute a significant factor in the elevated prevalence rates of mental disorders. Further factors that might influence mental health in this population are ongoing societal and political instability and unsatisfactory health and social care. Future research needs to address the extent to which lone parenthood is independently associated with psychopathology. The high mental morbidity rates among war-related widowed lone mothers call for long-term policies to meet their special mental health needs. Kosovo society as a whole should reconsider the cultural attitude that widowed mothers should not remarry.

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**References**

Data supplement

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<th></th>
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<th>Post-traumatic stress disorder</th>
<th>Generalised anxiety disorder</th>
<th>Suicide risk</th>
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<td>(n = 206)</td>
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<td>(n = 206)</td>
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<td>Age, years</td>
<td>0.96 (0.91–1.01)</td>
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<td>0.99 (0.94–1.04)</td>
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<td>Years of education</td>
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<td>1.02 (0.92–1.13)</td>
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<td>Number of war-related traumatic events</td>
<td>1.01 (0.99–1.03)</td>
<td>1.01 (0.99–1.03)</td>
<td>1.01 (0.99–1.04)</td>
<td>1.03 (1.01–1.05)*</td>
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<td>Torture (yes v. no)</td>
<td>1.13 (0.53–2.40)</td>
<td>0.74 (0.35–1.58)</td>
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<td>Post-war death of relatives</td>
<td>0.79 (0.26–2.37)</td>
<td>0.69 (0.18–2.69)</td>
<td>0.94 (0.35–2.55)</td>
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<td>Monthly income</td>
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<td>Non-bereaved married mothers</td>
<td>0.08 (0.03–0.18)**</td>
<td>0.10 (0.04–0.23)**</td>
<td>0.14 (0.06–0.37)**</td>
<td>0.26 (0.12–0.61)**</td>
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<td>Bereaved married mothers</td>
<td>0.12 (0.03–0.44)**</td>
<td>0.06 (0.01–0.28)**</td>
<td>0.34 (0.10–1.17)</td>
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OR, odds ratio.

*P<0.05, **P<0.01, ***P<0.001.
Mental health outcomes of widowed and married mothers after war
Nexhmedin Morina and Paul M. G. Emmelkamp
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