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Gender, Relationship Breakdown and Suicide Risk: A Review of Research in Western Countries

Rhiannon Evans, Jonathan Scourfield, and Graham Moore

Abstract

An association between divorce and suicide risk has been noted in numerous studies, but the gender profile of this risk has not been clearly established. This article reviews the evidence on gender differentials in suicide risk following the breakdown of an intimate relationship (including divorce and separation). Nineteen published papers that included individual-level data were identified. Twelve reported a greater risk of suicide in men following relationship breakdown, two indicated a greater risk in women, and a further five showed no clear gender differential. Although there are possible indications of increased risk for men, no definitive conclusion about gender differentials can be drawn. Furthermore, research is required which directly compares men with women for suicide risk following relationship breakdown.

Key Words: Divorce; Gender; Relationship Breakdown; Separation; Suicide;

Background

The social and cultural context of intimate relationships has seen substantial change in many countries in the last few decades. In the United Kingdom, for example, the divorce rate increased rapidly in the 1970s, though it has been fairly stable since 1985 (Wilson & Smallwood, 2008). Equally, there has been a rise in co-habitation, which now precedes 80% of all marriages in the UK (Beaujouan & Ní Bhrolcháin, 2011). Numerous sociologists have debated the changing cultural climate of relationships, with Giddens (1992) emphasising the radical nature of this social change; a “transformation of intimacy” in his terms. He describes a trend wherein people are less likely to accept lifetime marriage as their fate but instead seek a “pure relationship” based on emotional intimacy and mutual understanding. Giddens strikes an optimistic note about what he sees as the democratising of intimate relationships, though others, such as Jamieson (1998), emphasise the continuity of power dynamics (e.g. of gender) in relationships.

Irrespective of how contemporary relationship cultures are constructed, the central role that intimate relationships assume within most individuals’ lives is evident. A key indicator is the association between relationship breakdown and suicidal ideation, plans to engage in suicidal behaviours, and completed suicide. The link between marital status and suicide has been noted since the pioneering work of Durkheim (1897/2002), with studies consistently showing a higher prevalence of suicide in divorced individuals and elevated suicide rates in areas where divorce rates are highest (WHO, 1968; Stack, 2000). Indeed, in Stack’s (1995) review of 132 studies and 789 findings, 77.9% found a positive link between divorce and suicide.

Explanations of this relationship have primarily been underpinned by Durkheim's (1897/2002) concept of social integration, and domestic integration more specifically (Stack, 2000; Giddens, 2001; Wyder *et al.*, 2009). This thesis suggests that the integrating role of marriage can diminish the risk of egoistic suicide. Indeed, within marriage one's ego is arguably subordinated by a spouse, with the union providing a source of regulation and meaning while inhibiting unhealthy lifestyle behaviours (Gove, 1972; Stack, 2000). Equally, marriage integrates the individual into an emotionally supportive network (Gove, 1972; Trovato, 1991; Kposowa, 2000; Gibb *et al.*, 2011). Disintegration of such an intimate relationship serves as a vulnerability factor, as social bonds are broken and the dissolution of domestic regulation means that the individual comes to recognise no rules or activities beyond their own private interests (Durkheim, 1897/2002; Stack, 2000).

While relationship breakdown has been elicited as a cause of suicide, when examined through the lens of gender, it is apparent that suicidal behaviours may not be evenly distributed. Historically, suicide in response to relationship breakdown has been presented as a feminised act, and in resonance with a Freudian perspective, it has been explained by women's excessive identification with their love-object, and the resulting distress they experience when discarded or abandoned (Canetto, 1992-1993). The predominance of the partner for women is demonstrated during both the relationship breakdown and suicide. They are more likely than men to cite their partner's infidelity, substance misuse, and physical and mental abuse within divorce proceedings, while men are more likely to focus on their own actions (Amato and Prevetti, 2003). Equally, women are more inclined to attribute suicidal behaviour to interpersonal problems (Beck *et al.*, 1973). In contrast, men's suicide is contextualised by performance or pride, with the act often being a response to social or physical calamities (Canetto, 1992-1993). Yet contemporary gender theory might suggest that men are in fact at greater risk of suicide following relationship dissolution as it constitutes one of a number of

major life catastrophes that severely challenge pride and performance (Scourfield, 2005; Payne *et al.*, 2008; Cleary, 2012). Courtenay (2011) has been prominent in linking the culturally authorised 'hegemonic masculinity' (Connell, 1995) to men's health, noting that practices associated with the 'stronger sex' are linked with poorer health outcomes. The propensity for men to use more fatal methods than women when attempting suicide (Kposowa, 2000) is illustrative of the influence of normative gendered expectations, with strong cultural associations between some fatal means, e.g. firearms, and hegemonic masculinity. However, despite efforts to differentiate the role of relationship breakdown in suicide for men and women, Canetto (1992-1993, p.1) has sought to deconstruct the myth that 'women are said to be suicidal for love; men, for pride and performance' by suggesting the artificial construction of women's pathological dependence on relationships due to entrenched gendered beliefs about females' intrinsically weak nature.

Interacting with the influence of gender is age, as suicide following relationship breakdown does not remain stable across the life course. Wyder *et al* (2009) hypothesise that this variability may be due to the frequency of a marital status within a particular age group, which can lead to higher role conflict and more suicidal behaviours at some ages than others. Locating these occurrences within a life-course perspective, Luoma and Pearson (2002) term them "on course" and "off course" events. We might then anticipate the risk of suicide to be elevated amongst the married, divorced or widowed population under the age of 25, compared with the older population, as these are relatively rare relationship statuses within this age group (Luoma and Pearson, 2002). In contrast, marriage may be a notable protective factor for both genders within older age groups, as longer relationship duration is significantly associated with lower rates of depression, suicidal behaviours and substance misuse (Gibb *et al.*, 2011).

The cultural framing of ‘marriage’ and ‘divorce’ is also of relevance, as the consequence of an event such as relationship breakdown is contingent on the meaning given to that event, with this meaning being mediated by a combination of individual interpretations and the socio-cultural context (Braswell & Kushner, 2012). Understanding of cultural norms pertaining to different marital statuses may also offer insight into national or regional variations in suicide. Kposowa (2000) argues that within Western societies there is a strong cultural emphasis on achieving a strong and happy marriage, and consequently those who divorce may “experience a deep sense of disorientation, shame, guilt, and a generalized feeling of emotional hurt” (Stack 2000, p.167). This sense of shame may be particularly important, as individuals experiencing suicidal ideation have been shown to exhibit much higher levels of internalized shame than separated individuals who are not suicidal (Kolves *et al.*, 2010). Changes in the prevalence and acceptability of divorce may equally have an impact on suicide over time. For example, Cantor and Slater’s (1995) study of divorced and separated individuals in Queensland found an elevated risk of suicide for divorced females between 1990 and 1993, but this risk disappeared in Wyder *et al.*’s (2009) study in the same population between 1994 and 2004, reflecting a broader trend in Western countries of a reduction in the ratio of divorced suicides to married suicides. Additional contextual features may further temper the association between relationship breakdown and suicide, with Stack (2000) suggesting that when the economy and religion are strong the effect of divorce may be mitigated. However, in Fernquist’s (2003) ecological study, the association of divorce with suicide is more apparent in highly religious countries where the formal dissolution of marriage is likely to be met with disapproval.

There has been a range of research exploring the relationship between marriage, divorce and suicide. In alignment with Durkheim’s (1897/2002) seminal research, a number of ecological studies have been conducted (Lester, 1992; Lester, 1995; Gunnell *et al.*, 2003; Fernquist,

2003; Agerbo *et al.*, 2011). One of the most extensive reviews was carried out by the World Health Organisation (1968) which found a higher mortality rate from suicide for both divorced males and females compared to other relationship statuses in Europe, Australasia and North America. Evans, Scourfield and Moore (2012) present a review of ecological studies examining the association of relationship breakdown and suicide risk by gender, finding that of the ten studies identified, seven indicated an elevated risk for men, one suggested a higher risk for women, and two found no gender differential. Alongside these studies have been individual-level analyses, which will serve as the focus of the present review. Stack (1995) highlights the necessity of considering different research designs both collectively and independently. In his review, Stack (1995) found that although 77.9% of findings indicated a positive link between divorced and suicide, this depended on study design. For cross-sectional studies 78.6% found a positive link, while this percentage stood at 89.5% for longitudinal studies and 46.4% for longitudinal aggregate analyses.

Despite this burgeoning research, to date there remains no published synthesis of the existing evidence on individual suicide risk by gender following relationship breakdown. This paper addresses this research gap by answering the following question:

Is the association of relationship breakdown (including divorce and separation) with suicide risk differentiated by gender?

The term 'relationship breakdown' is used to frame the review, as while there is a propensity for studies to favour formal marital status (i.e. married, never married, divorced) as an indicator of relationship status, a broader category may be more pertinent. A relationship crisis may plausibly lead to a suicidal act, even in a formally intact couple. Also, the social significance of marriage has considerably changed in recent decades, with many couples co-habiting outside of formal marriage or in civil partnerships. Consequently, the definition of

“relationship breakdown” employed by the review includes the multiplicity of intimate relationships and the various ruptures to relationships, beyond the legal dissolution of a partnership, which may act as a trigger to suicide. Given that intimate relationships are social phenomena with potentially different meanings in different cultural contexts, it was important to ensure the review was specific to countries with broad cultural and economic similarities. Hence, the review is limited to those countries with a European cultural heritage.

Methods

The study used systematic review methodology to identify relevant empirical articles. The electronic databases Applied Social Sciences Indexes and Abstracts (ASSIA), Medline, Medline in Process, and PsycINFO were searched for literature between 1970 and 2012. The year 1970 was selected in order to capture the rise of second wave feminism, combined with legislative changes to divorce laws, such as the Divorce Reform Act (1971) in the United Kingdom. The search returned English language articles that contained the relevant search terms: suicide risk measures (suicide; suicide behaviour; fatal behaviour; suicide attempt; suicidal ideation; suicide risk); and exposures (divorce; separation; relationship breakdown; marital problems; marital status). The titles and/or abstracts of 1066 articles were reviewed (including 18 articles identified through reference lists). Article abstracts were screened and appraised, with the full papers being accessed if they met the following selection criteria:

- 1) The study sample comprises the general population.
- 2) The study is conducted in “Western” countries, that is, those with roots in European culture.
- 3) The study’s independent variable focuses on relationship breakdown (divorce, separation, relationship problems) in relation to suicidal behaviour. Studies that categorise individuals according to the binary of married/non-married were

excluded, as they do not allow differentiation between individuals who are divorced, widowed, or have never been married.

- 4) The study's outcome measure focuses on suicide-related thoughts or behaviours. Eligible outcomes included suicide, suicide attempt, or suicidal ideation.
- 5) The study analyses the relationship between the independent variable and outcome measure in relation to gender (i.e. through gender-specific sub-group analysis or interaction terms).

The full texts of 52 articles were assessed. Fourteen studies were excluded for not answering the research question or for not including a relevant independent variable or outcome measure. The quality of the remaining papers was independently appraised by two reviewers. Articles were considered by a third reviewer in the event of discrepancy over interpretation of study quality. Nine papers were excluded as they provided insufficient detail on the methods of analysis (e.g. the sample size or statistical test used was not stated). Of the remaining studies, 19 presented individual level data and ten were ecological studies. This latter set of papers is not included in this review paper as different research designs tend to present different strengths of association (Stack, 1995). A summary of their results can be found in Evans, Scourfield and Moore (2012). A data extraction form was developed, and data were independently abstracted by two reviewers. Peer review comment provided further input on the categorisation of studies.

Study Description

Of the nineteen included studies, 10 papers were European, 6 were from North America, and 3 were from Australasia. Population inclusion criteria were predominantly defined by age, with studies setting lower age limits of between 15 (Kpowosa, 2000) and 35 (Trovato, 1991).

Upper age limits were not specified in all studies, but where indicated they ranged from 60 (Agerbo, 2005) to 90 (Fekete *et al.*, 2005). Studies tended to not limit the sample by ethnicity, with the exception of Cutright and Fernquist (2005), who restricted the population to white individuals.

Across the studies a number of definitions of relationship type were employed as the independent variable. Although it was important for the search strategy to encompass any breakdown in relationship, regardless of legal status, the majority of studies considered the formal categories of divorce (Zeiss *et al.*, 1981; Cantor & Slater, 1995; Kposowa, 2000; Agerbo, 2005; Cutright & Fernquist, 2005; Fekete *et al.*, 2005; Petrovic *et al.*, 2009; Corcoran and Nagar, 2010); separation (Cantor & Slater, 1995; Agerbo, 2005; Kolves *et al.*, 2010); or a combination of the two (Trovato, 1991; Rodriguez-Puילו *et al.*, 1992; Burgoa *et al.*, 1998; Masocco *et al.*, 2008; Masocco *et al.*, 2010; Denney *et al.*, 2009; Kovess-Masfety *et al.*, 2011). In contrast, three studies took a much broader reading of relationship breakdown, focusing on intimate partner problems and discord (Heikkinen & Lonnqvist, 1995; Cupina, 2009; Walsh *et al.*, 2009).

With regards to outcome measurements, four studies examined suicidal ideation following relationship breakdown. Study samples were derived from the random selection of individuals from courthouse files (Zeiss *et al.*, 1981); individuals registered as utilising specialist support or clinical provisions (Cupina, 2009; Kolves *et al.*, 2010) and a multi-stage random sample from a population-based, household survey (Kovess-Masfety *et al.*, 2011). Sample sizes ranged from 133 (Zeiss *et al.*, 1981) to 21425 (Kovess-Masfety *et al.*, 2011). Two of these studies also considered the association between relationship breakdown and suicide attempts (Cupina, 2009; Kolves *et al.*, 2010). A third study also addressed the

outcome measure of suicide attempts, generating cases from clinical files (Fekete *et al.*, 2005). Samples ranged from 470 (Cupina, 2009) to 21425 (Kovess-Masfety *et al.* 2011).

The majority of studies (n=14) looked at suicide as the outcome measure. Cases were sampled from general mortality databases (Trovato, 1991; Burgoa *et al.*, 1998; Kposowa, 2000; Agerbo, 2005; Cutright & Fernquist, 2005; Denney *et al.*, 2009; Petrovic *et al.*, 2009; Corcoran & Nagar, 2010; Masocco *et al.*, 2008; Masocco *et al.*, 2010) and specific mortality registers for violent deaths, including suicide (Cantor & Slater, 1995; Heikkinen & Lonqvist, 1995; Walsh *et al.*, 2009). One study generated cases from reviews of judicial proceedings (Rodriguez-Puילו *et al.*, 1992). The number of suicides ranged from 545 (Kposowa, 2000) to 9011 (Agerbo, 2005), with a median sample of 1275 (Denney *et al.*, 2005). The number of completed suicides was not specified in four studies (Trovato, 1991; Burgoa *et al.*, 1998; Cutright and Fernquist, 2005; Masocco *et al.*, 2010).

Included studies employed numerous analytical techniques in assessing the association between relationship breakdown and suicide, making comparison between results problematic and the drawing of conclusions difficult. Five studies employed simple tests for association (Zeiss *et al.*, 1981; Rodriguez-Puילו *et al.*, 1992; Heikkinen & Lonqvist, 1995; Cupina, 2009; Walsh *et al.*, 2009); one study calculated a suicide difference coefficient (Cutright & Fernquist, 2005); two studies provided simple relative risk ratios (Cantor & Slater, 1995; Petrovic *et al.*, 2009); and eleven studies presented a regression analysis (Trovato, 1991; Burgoa *et al.*, 1998; Kposowa, 2000; Agerbo, 2005; Fekete *et al.*, 2005; Masocco *et al.*, 2008; Masocco *et al.*, 2008; Denney *et al.*, 2009; Corcoran & Nagar, 2010; Kolves *et al.*, 2010; Kovess-Masfety *et al.*, 2011). In light of the heterogeneity of the study populations and analytical approaches, meta-analysis was not appropriate for this review and could have concluded with spurious results (Egger *et al.*, 1998).

Results

Table 1 presents a summary of the nineteen studies included in the review that examine the likelihood of suicide following relationship breakdown according to gender. Studies are presented by gender differential: studies indicating males are at a higher risk of suicide following relationship breakdown are presented first; studies indicating females are at a higher risk are presented second; and studies showing no consistent gender differential are presented third. Within these categories studies are grouped according to the dependent variable of suicidality: studies examining suicidal ideation are presented first; studies considering suicide attempts are presented second; and studies presenting completed suicide are presented last.

Insert Table 1 about here

The reviewed papers suggest that both men and women are at elevated risk of suicide after relationship breakdown, compared to people whose relationships are intact. There was some evidence of a gender differential, although the lack of interaction ensures that any conclusions are tentative. Twelve studies found males to be at greater risk of suicidal ideation, attempt, or completion following relationship breakdown (Zeiss *et al.*, 1981; Rodriguez-Puילו *et al.*, 1992; Cantor & Slater, 1995; Burgoa *et al.*, 1998; Kposowa, 2000; Cutright & Fernquist, 2005; Denney *et al.*, 2009; Petrovic *et al.*, 2009; Walsh *et al.*, 2009; Corcoran & Hagar, 2010; Kolves *et al.*, 2010; Kovess-Masfety *et al.*, 2011). However, evidence of this gender differential was not unequivocal across all 19 studies. Two studies found an elevated risk in females (Masocco *et al.*, 2008; Masocco *et al.*, 2010) and a further set of five studies indicated no clear gender differential (Trovato, 1991; Heikkinen & Lomqvist, 1995; Agerbo, 2005; Fekete *et al.*, 2005; Cupina, 2009).

Suicidal Ideation

Of the four studies that examined suicidal ideation as an outcome, two found that men were more at risk of experiencing suicidal feelings (Zeiss *et al.*, 1981; Kolves *et al.*, 2010). Kolves *et al.*'s (2010) analysis of individuals contacting counselling, helplines and support groups is the only study to offer a direct comparison of males and females. Findings indicate that following separation men were significantly more likely to have serious thoughts about suicide (OR=1.86, 95% CI=1.04-3.32) and more than twice as likely to have made plans for suicide (OR=2.06, 95% CI=1.02-4.14). Although the causal mechanisms remain largely unspecified within these studies, Zeiss *et al.* (1981) indicate the challenge of males adjusting to changes in relationship status. Two studies found that men and females were equally likely to identify relationship breakdown as a cause of suicidal ideation (Cupina, 2009; Kovess-Mastefy *et al.*, 2011). Cupina's (2009) study was limited by the sample (n=70), with a high incidence of relationship breakdown and conflict for both women (86%) and men (86%). Kovess-Mastefy *et al.*'s (2011) larger sample (n=21425) may offer slightly stronger evidence. This study found that the odds ratios for married/cohabiting cases relative to separated/widowed/divorced individuals did not reach significance for either males or females.

Attempted Suicide

Three papers considered the gender differential between men and women who attempt suicide (Fekete *et al.*, 2005, Cupina, 2009; Kovess-Masfety *et al.*, 2011). One of these studies indicated that men were at an elevated risk. Kovess-Masfety *et al.* (2011) found that separated widowed or divorced women in France and Spain were actually at lower risk than married or cohabiting females. Conversely, their male counterparts were at significantly higher risk in both France (OR=4.46, 95% CI=0.74-26.78) and Spain (OR=8.04 95% CI=0.17-

387.90), although the findings are limited by the wide confidence intervals. The authors offer no explanation of this finding. Two studies indicated no gender differential for attempts (Fekete *et al.*, 2005, Cupina, 2009). Fekete *et al.*'s (2009) study of suicide attempters, predominantly repeated attempters, in Hungary found that divorced women were at a higher risk than males but this did not reach statistical significance (OR=1.64, 95%CI=0.84-3.21). However, despite providing odds ratios, the absolute number of suicide attempts for each relationship status is not indicated, and thus the finding may suggest an analytical artefact.

Completed Suicide

Fourteen papers considered completed suicide as an outcome. Nine of these studies found that men were at an elevated risk following divorce or separation (Rodriguez-Puילו *et al.*, 1992; Cantor & Slater, 1995; Burgoa *et al.*, 1998; Kposowa, 2000; Cutright & Fernquist, 2005; Denney *et al.*, 2009; Petrovic *et al.*, 2009; Walsh *et al.*, 2009; Corcoran & Nagar, 2010). In Walsh *et al.*'s (2009) study of intimate partner problems, simple analysis of association found that these problems were cited as a causal factor in men's suicides significantly more frequently than in women's suicides ($p < 0.0001$). The majority of studies used risk ratios or incidence rate ratios as a measures of effect. Kpowosa's (2000) US study found a risk ratio of 2.38 (95% CI=1.77-3.20) in divorced men compared to married men, whilst the risk in divorced women, compared to married women, did not reach significance (RR=1.27, 95% CI=0.67-2.41). Equally, Petrovic's *et al.* (2009) analysis of suicides in Serbia found that the relative risk of suicide amongst divorced men compared to married males was 3.79 (95%CI=2.54-5.63), whilst the risk for divorced females compared to married females stood at 1.47 (95%CI=0.74-2.82). Whilst these studies predominantly combine the category of divorce and separation, or focus exclusively on divorce, Cantor and Slater's (1995) is the only paper to offer separate analyses and estimate the relative risk of separation and divorce.

For all ages of men, separation proved to be a higher risk factor, with males in the separation phase being twice as likely as divorced men to die by suicide. Conversely, divorced women were at higher risk than separated women, although the authors warn that evidence of the elevated risk of separated females aged 30-54 must be treated with caution due to small numbers.

Five studies offered a more complex conclusion regarding the impact of relationship breakdown on suicide. Two studies, both from the same authors, indicated that females may actually be at a higher risk (Masocco *et al.*, 2008; Masocco *et al.*, 2010). However, this conclusion is somewhat tenuous, as the studies highlight the changing risk across the life course. Interestingly this variability is much more prominent in females, whilst marriage consistently serves as a protective factor against suicide for males. For example in Masocco *et al.*'s (2008) analysis of risk by age, females were clearly at a much higher risk aged 25-44 (OR=2.77, 95%CI=1.95-3.94) than males (OR=1.63, 95%CI=1.25-2.13), but this disappeared between the ages of 45-65, before re-emerging age 65 and over. A further three studies indicate no clear gender differential (Trovato, 1991; Heikkinen & Lomnqvist, 1995; Agerbo, 2005). Findings in these studies were even more equivocal than those reported by Masocco *et al.*, (2008; 2010), reporting slightly higher relative risk for males than females in some subgroups or points of time, whilst the converse was observed for other subgroups. Notably, Agerbo's (2005) study of Danish suicides found that divorced men (IR=1.75, 95%CI=1.58-1.95) were at a slightly higher risk than females (IR=1.68, 95%CI=1.46-1.95), but that separated females (IR=1.97, 95%CI=1.58-2.45) were at a marginally higher risk than males (IR=1.93, 95%CI= 1.67-2.23). This author suggests that the similarity in suicide rates may be explained by Danish women's integration into the labour market, so they have the same social support and do not suffer a higher economic loss when divorced. However, regardless

of this similarity, there remain more than two male suicides for each female suicide in the study sample.

With regard to the broader cultural, social and material context, there was no clear pattern in gendered risk of suicide following relationship breakdown by countries or region. The twelve studies that reported a higher risk in males were conducted in the USA (Zeiss *et al.*, 1981; Kposowa, 2000; Cutright and Fernquist, 2005; Denney *et al.*, 2009; Walsh *et al.*, 2009) and Europe (Cantor and Slater, 1995; Burgoa *et al.*, 1998; Rodriguez-Puldo *et al.*, 1992; Petrovic *et al.*, 2009; Kolves *et al.*, 2010; Kovess-Masfety *et al.*, 2011; Corcoran and Nagar, 2010). Studies indicating an elevated risk for females were also conducted in Europe, namely Italy (Masocco *et al.*, 2008; Masocco *et al.*, 2010). Those studies finding no clear gender differential in suicide risk were also from North America (Trovato, 1991); Europe (Heikkinen and Lonnqvist, 1995; Fekete *et al.*, 2005) and Australasia (Cupina, 2009).

Discussion

In light of the studies discussed above, it is apparent that there is no definitive evidence of a gender differential in suicidal behaviours following the breakdown of a relationship; a fact that is further complicated by the disparate samples and analytical techniques utilised.

Neither was there a clear trend across age nor a pattern of results in relation to country or region. However, the weight of the reviewed studies would seem to tentatively support the view that men are at greater risk of suicide than women following relationship problems, divorce or separation. This evidence was strongest where the dependent variable was completed suicide.

If indeed men are at greater risk than are women, this would seem to fit with a range of sociological insights about the Western world in late modernity: men tend to struggle more

than women with changing gender roles; there is some evidence that marriage is a more positive experience for men than for women; some men are fixated on controlling their partners; the care of children has increasing cultural importance for men; and men's social networks are typically not used for support with emotional difficulties (see Scourfield and Evans, 2014).

Qualitative and mixed-methods research are particularly illuminating when exploring the psycho-social circumstances of individual suicides, while offering much needed departure points for theorising the risk factors and contextual features pertaining to suicidal behaviours. Fincham *et al.*'s (2011) study categorised suicidal responses to relationship breakdown as predominantly characterised by over-dependence, sexual jealousy, punishment, separation from children and murder or attempted murder. The last of these categories is rare. Only the first category, over-dependence, featured mostly women. The other categories were populated predominantly or exclusively by men. There are connections to be made with the domestic abuse of women, with some suicides in this study featuring a combination of jealous reactions to an ex-partner's new relationship, an attempt to punish her through suicidal acts and disputes over the custody of children. More research in this methodological vein is required.

However, it is important in considering this topic of suicide and relationship breakdown to consider causal direction and the problem of matrimonial selection (Gibb *et al.*, 2011). Essentially, this argument proposes that those who experience relationship breakdown are more likely to have pre-existing vulnerabilities, or what Stack (2000) terms "suicidogenic conditions", while those who form lasting relationships are both physically and mentally well. This suggests that divorced and separated individuals may already be at an elevated risk irrespective of such life events (Smith *et al.*, 1988). Wyder *et al* (2009), however, maintain

that the association between separation and suicide risk is largely independent from the presence of a psychiatric illness, providing some evidence to challenge the matrimonial selection argument. It is also possible that lower suicide rates in the married population relative to other marital status groups may reflect more the unique circumstances of divorce and widowhood, such as experiencing loss, rather than factors peculiar to married population (Smith *et al.*, 1988).

Limitations

One of the central limitations of this review is the difficulty of disentangling suicide risk according to relationship type. There is a propensity of studies to combine divorce and separation, despite some evidence that separation poses a higher risk (Cantor & Slater, 1995; Kolves *et al.*, 2010). Equally, a number of studies were excluded due to their combination of divorce/separation with widowhood and “never married” status, which may lead to the misrepresentation of the gender differential (Ide *et al.*, 2010). For example Masocco *et al.* (2008) found that unmarried men were at higher risk of suicide than unmarried women, but when this analysis was limited to a comparison of divorce/separation and marriage, women were at higher risk (OR=2.77, 95%CI=1.95-3.94) than men (OR=1.63, 95%CI=1.25-2.13). Furthermore, collapsing a range of relationship statuses into the binary categories of married and non-married results in an undue focus on formally recognised relationships, obscuring the fact that many intimate relationships take place outside of marriage.

Timing and initiation of relationship breakdown was also absent from the included studies, thus problematizing comparisons across research findings. Women have been found to instigate separation more frequently than men, and are more inclined to file for divorce (Brinig & Allen, 2000). Equally, Stack and Scourfield’s (2013) study of the association between timing of divorce and completed suicide finds that recent divorce increases the odds

of death by suicide 1.6 times, compared with 1.3 times for distal divorce. Omission of these contextual and temporal factors as subgroups within analysis may limit our understanding of the association between relationship breakdown and suicidal behaviours, suggesting the need for further research.

Methodological and analytical limitations were also inherent in the studies that were included in the review. Few studies formally tested whether the association of divorce with suicide was significantly greater for men than for women via inclusion of sex * relationship status interaction terms within regression models. Additionally, many studies did not use multivariate statistical models to adjust for social and economic factors which potentially confound the relationship between suicide and relationship breakdown.

Conclusion

Of the studies included in the review, twelve found a higher suicide risk for men than for women in the context of either divorce or separation. It is important to note, however, that seven studies found either no gender differential or found a higher risk for women, so there can be no decisive conclusion here.

One clear implication of the evidence that relationship breakdown is associated with heightened suicide risk is that when working with men and women already identified as at risk of suicide, practitioners need to be alert to the possibility that relationship breakdown can be a trigger to suicidal acts. There are also possible implications for a more population-based public health approach. One idea would be the promotion and greater free provision of services which mitigate the most damaging aspects of relationship breakdown, such as relationship counselling and mediation. There are relationships that could be maintained with some help from a counsellor or mediator. There are others which inevitably will come to an

end, but that ending could be eased with a skilled third-party mediator to help negotiate the process. This can be especially helpful when there are disputes over the care of children.

Further research is needed on this issue, to directly compare suicide risk in women and men after relationship breakdown and to move beyond the sometimes crude categories of married/separated/divorced. Studies exploring the psycho-social circumstances of suicidal acts should be an important priority for researchers. Such studies will inevitably necessitate mixed methods approaches.

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Table 1. Results from studies selected for review

Study	Country	Data source	Sample size/description	Outcome measure	Comparison	Statistical method	Male only analysis	Female only analysis	Male / female comparison / interaction	Covariates
Males at higher risk of suicide than females following relationship breakdown										
Zeiss, Zeiss and Johnson (1981)	USA (Oregon)	Cases randomly selected from courthouse divorce files and surveyed	N=133	Suicidal Ideation	Divorced men vs Divorced women	T-test	n/a	n/a	t=2.23 (p=0.05) Significantly fewer suicidal feelings amongst women	n/a
Kolves <i>et al.</i> (2010)	Australia	Contacted counselling, help-lines, support groups. 2006-2007.	N=370 Male (N=228) Female (N=142)	Suicidal Ideation	Separated Males vs Separated Females	Logistic regression	n/a.	n/a	Felt life was not worth living (OR=1.81, 95%CI=1.14-2.87); Wished I was dead OR=1.10, (95% CI=0.70-1.75); Thinking about taking own life even if would not really do it (OR=1.95, 95%CI=1.23-3.10); Thought serious about committing suicide (OR=1.86, CI=1.04-3.32); Made plans for committing suicide (OR=2.06, 95%CI=1.02-4.14); None of the above (OR=0.59, 95% CI=0.37-0.95); Attempted to take own life (Fisher's exact test=0.055)	Age, Education; Employment; Having children with previous partner.

Kovess-Masfety <i>et al.</i> (2011)	Spain and France	European Study of the Epidemiology of Mental Disorders (ESEMeD) 2001-2003	N=21425 Age=18+	Suicidal Ideation	Married vs Separated/Widowed/ Divorced	Logistic Regression	France: OR=1.43 (95%CI=0.39-5.32) Spain: OR=1.68 (95%CI=0.42-6.66)	France: OR=0.96 (95%CI=0.55-1.68) Spain: OR=1.14(95%CI=0.60-2.17)	n/a	Unclear
				Suicide Attempt			France: OR=4.46 (95%CI=0.74-26.78) Spain: 8.04 OR=1.68 (95%CI=0.17-387.90)	France: OR=0.78 (95%CI=0.29-2.15) Spain: 0.90 OR=1.68 (95%CI=0.24-3.38)		
Kposowa (2000)	USA	National Longitudinal mortality Study (NLMS) 1979-1989	N=545, Age=15+	Suicide	Married vs Divorced	Cox proportional hazards regression	RR=2.38 (95% CI=1.77- 3.20)	RR=1.27 (95%CI=0.67-2.41)	n/a	Age, Race, Sex, Education, Income, Region of residence
Cutright and Fernquist (2005)	USA	General Social Survey	N=54 clusters (age*sex*marital status) White population	Suicide rate	Married vs divorced (20-34 year olds)	Standardised suicide difference coefficient	-0.61 (1979) -0.64 (1992-94)	-0.61 (1979) -0.64 (1992-94)	n/a	n/a
					Married vs divorced (35-54)		-0.61 (1979) -0.60 (1992-94)	-0.49 (1979) -0.54 (1992-94)		
					Married vs divorced (55+)		0.51 (1979) -0.53 (1992-94)	-0.43 (1979) -0.50 (1992-94)		
Denney <i>et al.</i> (2009)	USA	National Health Interview Survey Linked Mortality File	N=1275 Aged 18+	Suicide	Married vs Divorced/separated	Cox hazards model	1.39 (p<0.05)	1.42 (p>0.05)	(X ² =36.0, df=3, p<0.01)	Race, family size, SES, Geographic area, Health status
					Married vs Never married		1.22 (p<0.05)	1.34 (p>0.05)		
					Married vs Widowed		1.60 (p<0.05)	1.18 (p>0.05)		
Walsh <i>et al.</i> (2009)	USA	Kentucky Violent Death Reporting System Database 2005	N=557 suicides Males=451 Females=106	Suicide	Intimate Partner Problems	Chi-square	n/a	n/a	Departure of an intimate partner cited as a factor in significantly more male than female suicides(p<0.0001)	None

Cantor and Slater (1995)	Australia	Queensland Suicide Research and Prevention Program's Suicide Register and Register General's Record 1990-1992	N=1375 suicides (denominator= Queensland population); Age= 15+	Suicide	Married vs Separated	Simple relative risk ratios (suicide rate/suicide rate for ref category)	Age= 15+: RR=6.2 Age=15-29: RR=6.1 Age=30-54: RR=7.6 Age=55+ RR=3.2	Age= 15+: RR=1.6 Age=15-29: RR=1.9 Age=30-54: RR=1.9 Age=55+ RR= -	n/a	None
					Separated vs Divorce		Age= 15+ RR=0.5 Age=15-29: RR=0.3 Age=30-54: RR=0.5 Age=55+ RR=0.5	Age= 15+: RR=2.0 Age=15-29: RR=0.8 Age=30-54: RR=1.6 Age=55+ RR= -		
Corcoran and Nagar (2010)	Northern Ireland	General Register Office (GRO for Northern Ireland 1996-2005	N=1398 suicides Age 20+	Suicide	Married vs Divorced	Poisson regression	Age=20+ IRR=2.61 (95% CI=1.39-4.88)	Age=20+ IRR=2.57, 95%CI=0.89-7.42)	n/a	None
Burgoa <i>et al.</i> (1998)	Spain	National Institute of Statistics (INE) Death Registry 1991	N=Unknown; Age 25+	Suicide	Married vs Divorced/Separated	Poisson regression	RR=2.99 (95% CI=2.26-3.97)	RR=1.50 (95% CI=0.84-2.67).	n/a	Unclear
Petrovic <i>et al.</i> (2009)	Serbia	Regional Statistics Centre, Nis 1995-2002	N=628 suicides Age=20+	Suicide	Married vs Divorced	Relative risk ratios (with 95% CI) and chi-Square	RR=3.79 (95%CI=2.54-5.63)	RR=1.47 (95%CI=0.74-2.82)	n/a	Unclear
Rodriguez-Pulido <i>et al.</i> (1992)	Canary islands	Review of judicial proceedings	N=775 suicides (denominator total population as of 1981)	Suicide rates	Single, Married, Widowed, Separated /Divorced	Chi-squared	Age adjusted indirect standardization of mortality rates Married men 7.71 suicides per 10,000 Divorced men 112.37 suicides per 10,000	Age adjusted indirect standardization of mortality rates Married females 2.82 suicides per 10,000 Divorced females 35.34 suicides per 10,000	n/a	n/a

Females at higher relative risk of suicide following relationship breakdown than males										
Masocco <i>et al.</i> (2008)	Italy	Italian Database on Mortality 2000-2002	N=2784 suicides Age= 25+	Suicide (compared to natural causes)	Married vs Divorced/Separated	Logistic Regression	Age 25-44 OR=1.63(95%CI=1.25-2.13) Age 45-64 OR=1.88(95%CI=1.59-2.26) Age 65+ OR=1.65 (95%CI=1.21-2.27) All OR=1.79 (95%CI=1.57- 2.05)	Age 25-44 OR=2.77(95%CI=1.95-3.94) Age 45-64 OR=1.69(95%CI=1.27-2.25) Age 65+ OR=1.79(95%CI=1.15-2.78) All OR=1.96 (95%CI=1.61- 2.39)	n/a	None
Masocco <i>et al.</i> (2010)	Italy	Italian Database on Mortality 2000-2002	N=Unclear Age= 25+	Suicide (compared to natural causes)	Married vs Divorced/Separated	Logistic Regression	OR=1.79 (95%CI=1.57-2.05)	OR=1.96 (95%CI=1.61-2.39)		Region of Residence
No consistent gender differential in suicide risk following relationship breakdown										
Cupina (2009)	New Zealand	Auckland Community Crisis Team Clinical File 2007	N=70 Age=18-65	Suicidal Ideation/ Attempts	Gender differences in reasons for suicidal behaviour (including separation from partner and relationship conflict)	Chi-Square	n/a	n/a	$\chi^2 =0.54, df=1, p=0.46$	None
Trovato (1991)	Canada	Mortality Data Base 1951-1981	N= unclear Age: 35+	Suicide	Married vs Divorced/Separated	Logistic regression	1951: RR=1.63 1961:RR=1.75 1971: RR=1.80 1981: RR=1.67	1951: RR=1.59 1961:RR=1.68 1971: RR=1.81 1981:RR=1.61	Difference Male –Female RR 1951 RR=0.04 1961: RR=0.07 1971: RR=-0.01 1981: RR=0.06	None
Fekete <i>et al.</i> (2005)	Hungary	University Clinics, Pecs Center 1997-2001	N=1158 suicide attempts Females: 63% Males:37% Age25-90	Gender (among suicide attempters)	Married vs Divorced	Logistic regression	n/a	n/a	OR=1.64(95%CI=0.84-3.21)	None

Agerbo (2005)	Denmark	The Danish Medical Register on Vital Statistics 1982-1997	N=9011 Age=25-60	Suicide	Married living with spouse vs Divorced	Logistic regression	IR=1.75 (95%CI=1.58-1.95)	IR=1.68 (95%CI=1.46-1.95)	n/a	Age; Time since last discharge from psychiatric inpatient care; Psychiatric disorder to latest discharge; Death amongst children; Number of children; Income; Labour market affiliation in previous year; Education
					Married living with spouse vs Separated		IR=1.93, (95%CI=1.67-2.23)	IR=1.97 (95%CI=1.58-2.45)		
Heikkinen and Lonnqvist (1995)	Finland	National Suicide Prevention Project 1987-1988	N=1022 Age=20-88	Suicide	Life Events (Separation; Family Discord)	Chi-Square	n/a	n/a	Male and female difference in frequency of separation or family discord during 3 months prior to suicide not significant for 20-59 yr olds or ≥60 yr olds.	None