The relationship between mortality and time since divorce, widowhood or remarriage in Norway

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ARTICLE INFO

ABSTRACT

The chance of dying within any given year probably depends not only on marital status in that year but also on earlier partnership history. There is still not much knowledge about such effects, however. Our intention is to see how mortality is associated with time since divorce, bereavement and remarriage and time between marital disruption and remarriage. We use register data that include the entire Norwegian population aged 40—89 from 1970 to 2008 (70,701,767 person-years of exposure and 1,484,281 deaths). The excess mortality of divorced men compared to their married counterparts increases with time since divorce, while there is no such trend among divorced women. The pattern is opposite for the widowed, among whom there are indications of a more sharply positive association with time since bereavement for women than for men, though the association is rather weak for both sexes. The remarried have higher mortality than the first-time married, with one surprising exception: men who have remarried after a period of less than 10 years as divorced or widowed have the same mortality as the married. There is no clear association between mortality and time since remarriage. We discuss possible reasons for these patterns.

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Introduction

Individuals who have a partner tend to have a healthier lifestyle than those who live alone, because of for example the economic contributions from the spouse or cohabitant, sharing of knowledge about good health behaviour, and the social control exerted by the partner (Hemström, 1996). A spouse or cohabitant can also be an important source of support in case of illness. Such beneficial effects of current partnership contribute to the lower mortality among the married than the non-married that has been shown in a large number of studies over many years (Manzoli, Villari, Pirone, & Boccia, 2007; Roelfs, Shor, Kalish, & Yogev, 2011; Shor, Roelfs, Bugyi, & Schwartz, 2012; Shor, Roelfs, Curreli, et al., 2012), including a recent contribution from Norway (Berntsen, 2011). The healthier lifestyle and better access to care among the partnered also have long-term effects on health, of course. Thus, an individual's mortality in any given year depends not only on whether he or she is married or lives in a consensual union at that time, but also on partnership in earlier years. More specifically, the number of years lived alone in the past may matter, and it may also be

important whether a period outside partnership occurred quite recently or many years earlier (e.g. Brockmann & Klein, 2004).

In addition to such effects of current and former partnerships on lifestyle and the availability of care, it is possible that a *change* in partnership situation itself has implications for an individual's health, at least in the short term, though there may also be more persistent effects. Most importantly, marital or union dissolution — and especially if it is caused by the death of the partner — may cause a severe stress reaction (Martikainen & Valkonen, 1996).

Because of such mechanisms, as well as various types of selection that we elaborate on below, the mortality of the divorced or widowed may depend on time since the marriage dissolution. Further, it is likely that mortality differs between individuals who live in a first marriage and those who have remarried after divorce or widowhood, and it may vary with time since remarriage and time between remarriage and the foregoing dissolution. Our intention is to contribute to the knowledge about these associations, which there is still much uncertainty about.

Some authors have concluded that the divorced have a relatively poor health and high mortality (compared to the married) only the first years after dissolution, presumably because of a crisis reaction (Brockmann & Klein, 2004; Dupre, Beck, & Meadows, 2009). Others have found that the excess mortality is higher the longer one has been divorced (Blomgren, Martikainen, Grundy, & Koskinen, 2012;

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Lund, Holstein, & Osler, 2004). The association between mortality and time since divorce is not the same for women and men in all these studies, but there is no clear overall pattern in the sex differences (Blomgren et al., 2012; Dupre et al., 2009; Grundy & Tomassini, 2010). See summary of existing literature in Table 1. There is also uncertainty about how health status and mortality vary with duration since widowhood. Some authors have argued that the excess mortality of the widowed is highest shortly after the death of the spouse, and declines or even disappears over time (Brockmann & Klein, 2004; Martikainen & Valkonen, 1996; see also meta-analysis by Shor, Roelfs, Curreli, et al. (2012)), while others have found that mortality increases with time spent as widowed (Blomgren et al., 2012). Here also, there is some unsystematic variation in the estimates across sexes. The few studies of the importance of time since remarriage suggest an increasing disadvantage compared to those in first marriage: Brockmann and Klein (2004) concluded that the excess mortality among previously divorced men increased by 4% every year since remarriage, and Grundy and Tomassini (2010) found a significant mortality disadvantage only among men after 20 years of remarriage, not at shorter durations (except among previously divorced women who remarried after 1971). As far as we know, there is no literature on the association between mortality and time between dissolution and remarriage.

These earlier studies on the association between marital histories and mortality have several limitations. Some of the investigations were based on infrequent measurements of changes in marital status, for example every tenth year, which means that there is much uncertainty about the timing of the events under investigation (Blomgren et al., 2012). More specifically, for individuals divorced or widowed at one measurement and married at the previous measurement, the timing of this marriage dissolution is not known. Further, some of those who are divorced according to the last measurement may actually have married (which is increasingly likely as time since divorce increases). Moreover, while a few studies have been based on large register data sets (Martikainen & Valkonen, 1996), others have used rather small samples (Dupre

et al., 2009). In some studies, marital biographies have been measured over short time periods (Martikainen & Valkonen, 1996), or persons are only followed until early old age, when there are relative few deaths (Dupre et al., 2009).

Our study is based on Norwegian register data that cover the entire population and include high-quality marital biographies over a 38-year period. Just as most other Western countries, Norway has experienced high divorce rates over the last decades, and is therefore a highly relevant setting for a study of how mortality varies with, for example, time since divorce and time since remarriage. Consensual unions have become increasingly common in Norway and many other countries. Unfortunately, we cannot consider the cohabitants as a separate group or include them among the married (as did Kriegbaum, Christensen, Lund, and Osler (2009), who investigated associations between mortality and the number of broken partnerships among Danish males). In the Norwegian registers, cohabitants are hidden among the never-married, divorced or widowed, except (since 1987) those with common children.

As noted earlier, the associations between marital history and mortality may differ between the sexes, so we estimate models separately for women and men. Additionally, we estimate models for a few separate time periods. This is because the increasingly strong association between mortality and being currently non-married that is seen in Norway (Berntsen, 2011; Kravdal & Syse, 2011) and other countries (Murphy, Grundy, & Kalogirou, 2007; Valkonen, Martikainen, & Blomgren, 2004) may indicate that there has also been a change in the importance of various marital history variables for mortality.

Theoretical considerations

General ideas on health advantages of partnerships

As mentioned earlier, there are certain advantages associated with currently having a partner, and these may accumulate over time, so that those who at a given age have lived in a relationship

Table 1
Summary of results from earlier studies on marital history and mortality[a].

Article	Country	N/person-years (PY)	Age	Time since divorce				Time since widowhood				Time since remarriage			
				<10 years		>10 years		<10 years		>10 years		<10 years		>10 years	
				M	W	M	W	M	W	M	W	M	W	M	W
Blomgren et al. (2012)	England & Wales	1.6 million PY	50–74	ns	+	+	+(+)	+	+	++	+				
			75+	ns	ns	ns	+	ns	+	ns	+				
	Finland	3.2 million PY	50–74	+	+	++	++	+	+	+	+				
			75+	ns	ns	ns	+	+	+	+	+				
Brockmann and Klein (2004)	Germany	12,484	60+	+[b]	+[b]	ns[c]	ns[c]	+[b]	+[b]	ns[c]	ns[c]	+[d]	ns	++[d]	ns
Dupre et al. (2009)	US	8715	51–61	ns	+[e]	ns	ns	ns	ns	ns	−[f]				
Grundy and Tomassini (2010)	England & Wales	75,027	60–79	ns	++	+[g]	+[h]	+	+	++	+	ns	+[i]	+[j]	ns
Lund et al. (2004)	Denmark	10,891	40–49	+		++									
Martikainen and Valkonen (1996)	Finland	1.6 million	35–84					+[k]	+[k]						

M = men, W = women, + = excess mortality compared to married persons, ++ = even higher excess mortality compared to the married, − = lower mortality compared to married persons, empty cell = not included in the study, ns = not significant.
[a] Based on models where at least age and socio-economic status are controlled for.
[b] 0–2 years.
[c] >2 years.
[d] 4% increase every year for previously divorced.
[e] Only significant 1–4 years.
[f] >5 years.
[g] Only significant 10–19 years.
[h] Only significant >20 years.
[i] Previously divorced, remarried since 1971.
[j] Remarried 20+ years.
[k] Excess mortality higher <6 months after spouse's death than >6 months. Only controls for age and period.