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ORIGINAL ARTICLE

Mood and anxiety disorders in widowhood: A systematic review

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Abstract

The association between widowhood and mental health problems, such as depressive symptomatology and anxiety, has been examined extensively. Few studies, however, have explored the prevalence and incidence of mood and anxiety disorders based on diagnostic criteria after the loss of the partner. We conducted a systematic review, and searched major bibliographical databases for studies examining mood and anxiety disorders in widowhood. We included all studies examining the prevalence or incidence of mood and anxiety disorders in the widowed, according to diagnostic criteria as assessed with a structured diagnostic interview. Eleven studies were identified, exploring the prevalence and incidence of mood and anxiety disorders in 3481 widowed individuals and 4685 non-widowed controls. As expected, the prevalence of Major Depressive Disorder (MDD) and anxiety disorders were considerably elevated in widowed individuals, especially in the first year after the loss of a spouse. During the first year of bereavement, almost 22% of the widowed were diagnosed as having MDD; almost 12% met diagnostic criteria for Post Traumatic Stress Disorder; and there were higher risks of Panic Disorder and Generalized Anxiety Disorder. The incidence rate of MDD and several anxiety disorders ranged from 0.08–0.50. The relative risk of developing a mood or anxiety disorder ranged from 3.49–9.76, in the widowed, compared to control subjects.

Introduction

The death of a spouse is one of the most difficult events a person can experience. Several studies have demonstrated that bereaved spouses show increased psychiatric morbidity (Beem, Maes, Cleiren, Schut, & Garssen, 2000; Harlow, Goldberg, & Comstock, 1991) and mortality (Stroebe, M. S., & Stroebe, W., 1993). Although most of the widowed are able to eventually regain pre-bereavement levels of functioning, some experience long-lasting and severe psychological dysfunction. In the past decades, adaptation following bereavement has been studied at great length. Surprisingly, however, few of these studies have examined the prevalence and incidence of mental disorders after the loss of a spouse. This is in part explained by the fact that depression and anxiety are a normal part of the bereavement process. According to the Diagnostic and Statistical Manual (American Psychiatric Association, 1994), even a full range of depressive symptoms for two or more weeks will not be diagnosed as a Major Depressive Disorder when these symptoms appear shortly after the loss. In the first months after bereavement, the most likely label will be uncomplicated bereavement, regardless of the

symptomatology, and so the presence of mental disorders may go unrecognized (Jacobs & Kim, 1990; Zisook & Shuchter, 1993).

Nevertheless, psychological distress is a normal response to such a stressful event, which may even help the surviving relative to adapt and normal bereavement reactions should not be pathologised. The object of this review, however, is to draw attention to the increased vulnerability to psychiatric illness in widowed people.

Recognition of mental disorders in bereaved spouses is important, as they involve psychological suffering and problems in daily functioning. Furthermore, it is generally assumed that those mental disorders associated with bereavement, Major Depressive Disorder (MDD) and anxiety disorders, can be adequately treated in many cases with psychological and pharmacological interventions. And, most importantly, the severity of mental health problems in the initial period after the loss will significantly determine the eventual outcome of the bereavement process (Zisook & Shuchter, 1991, 1993; Zisook, Paulus, Shuchter, & Judd, 1997). Therefore, even shortly after the loss of a spouse,

it is important to be aware of the potential development of a mental disorder so that the widowed can have access to the help they might need. Adequate knowledge of the prevalence and incidence of mental disorders accompanying bereavement is necessary to provide adequate care for those who need it.

In order to assess the problem of mental disorders accompanying widowhood, we conducted a systematic review of studies examining the prevalence, incidence and relative risk of developing MDD and anxiety disorders among bereaved spouses. We focussed on MDD and anxiety disorders because we did not find any studies on other mental disorders.

Methods

Literature search

We conducted a systematic literature search. First, we searched in major bibliographical databases (Medline and Psychinfo) for relevant studies. Studies registered in the Psychinfo database were retrieved by a combination of keywords and text words referring to widowhood (widow/widower/widowed/bereavement) and Mental Disorders (Mental Disorders/Major Depressive Disorder/Anxiety Disorders). The Medline database was examined by using the following mesh terms: 'widowhood', 'spousal bereavement', 'spousal death' and 'Mental Disorders'. In order to minimize possible bias toward published studies, we also included Dissertation Abstracts.

We did not restrict our search to a certain time period or language except that studies published after January 1, 2005 were not considered. All studies selected from Medline and Psychinfo were further examined. If abstracts were available, we started with an exploration of the abstracts. This way, we were able to exclude several studies clearly outside the inclusion criteria for this review. All other studies were retrieved and studied more extensively. We also examined the reference lists of all studies of interest. Those studies indicated as within the inclusion criteria, were retrieved for further examination.

Inclusion and exclusion criteria

We included all studies examining the prevalence, incidence or relative risk of Major Depressive Disorder and anxiety disorders. Diagnosis of these disorders had to be made according to standard diagnostic criteria (DSM or ICD; American Psychiatric Association, 1994; World Health Organization, 2004) and assessed with a standardized diagnostic interview (e.g., CIDI or SCID; World Health Organization, 1997; Spitzer, Williams, & Gibbon, 1985). Studies were excluded if they did not use diagnostic criteria to diagnose a full blown disorder or if they estimated the presence of a

disorder by means of a cut-off point for scales such as the Beck Depression Inventory (BDI), or the Centre for Epidemiological Studies—Depression scale (CES-D; Radloff, 1977; Beck, Steer, & Garbin, 1988).

Analysis

The included studies differed on several points. The presence of different disorders was explored; diagnoses were not assessed with the same diagnostic interview; study designs varied considerably, and the research population in some of the studies differed from the community sample investigated in most of the studies. These differences interfered with the conduction of a formal meta-analysis, which integrates the results of all studies statistically. Therefore, we analysed the studies systematically by examining the prevalence of mental disorders for each study separately, together with the surrounding 95% confidence intervals. As DSM-IV refers to diagnosis of uncomplicated bereavement in the first two months of bereavement, we selected the first measurement at the end of this two months period. Next, we calculated the relative risk of developing a mental disorder for all controlled studies. Finally, we calculated incidence rates with surrounding 95% confidence intervals for all prospective studies.

Results

Included studies

The eleven studies which met the inclusion criteria (Barry, Kasl, & Prigerson, 2002; Bruce, Kim, Leaf, & Jacobs, 1990; Byrne & Raphael, 1999; Carnelly, Workman, & Kerser 1999; Jacobs et al., 1990; Kaltman & Bonanno, 2003; Schut, Keijser, Bout, & Dijkhuis, 1991; Silverman, Johnson, & Prigerson, 2001; Turvey, Carney, Arndt, Wallace, & Herzog, 1999; Zisook, Chentsova-Dutton, & Shuchter, 1998; Zisook, Shuchter, Sledge, Paulus, & Judd, 1994) focused on four disorders: Major Depressive Disorder (MDD), Post Traumatic Stress Disorder (PTSD), Panic Disorder (PD) and Generalized Anxiety Disorder (GAD). Four studies examined the presence of two mental disorders (Barry et al., 2002; Jacobs et al., 1990; Silverman et al., 2001; Zisook et al., 1994, 1998) in the same population. Assessment of mental disorders was conducted with several diagnostic interviews. Together, these studies explored the prevalence or incidence of Major Depressive Disorder and anxiety disorders in 3481 widowed individuals and 4685 non-widowed controls. Most studies used a representative community sample. However, three studies (Barry et al., 2002; Kaltman & Bonanno, 2003; Silverman et al., 2001) were conducted on a selective and unrepresentative sample; their participants were obtained through referrals, self-help organizations and advertisements.

The same studies failed to report data on initial non-response. All other studies noted non-response rates which varied between 20–54%. Features of the widowed population, such as gender, age, and length of widowhood, varied across the different studies (Table I).

Prevalence of mental disorders

In eight studies, 1051 widowed individuals were screened for the prevalence of Major Depressive Disorder, which was diagnosed in 184 widowed individuals (17.5%). This percentage, however, was derived from the complete sample of widowed individuals who lost their spouse within a 36-month period, without considering the impact of time. After the time period was restricted to the first 12 months of widowhood, the prevalence rate of Major Depressive Disorder increased to 21.9%. Table II displays the prevalence rates with 95% confidence intervals (CI) of all included studies. We explored the 95% confidence intervals of the different studies and identified two distinct groups of prevalence rates, and two outliers. The first group included three studies examining the prevalence of Major Depressive Disorder within the first year of bereavement (Bruce et al., 1990; Jacobs, Hansen, Berkman, Kasl, & Ostfeld, 1989; Zisook et al., 1994; CI, 0.16–0.46). The other group comprised three studies exploring the prevalence of Major Depressive Disorder within a more extended period, ranging from 24–36 months (Carnelley et al. 1999; Silverman et al., 2001; Turvey et al., 1999; CI, 0.05–0.21). The two remaining studies reported considerably lower prevalence rates. Deviation from other included studies however, could be explained by the population under review. The first study reported a prevalence of 0.09 (confidence interval 0.04–0.14) four months after the loss (Barry et al., 2002). The sample used in this study was not a representative community sample unlike most other studies but consisted of widowed individuals recruited from self-help or religious organizations, and most received specialized support during their bereavement process, which was not the case in the other studies. The other study representing deviant data, reported a prevalence of 0.02 (CI, 0.00–0.06) 13 months post-loss (Byrne et al., 1999). The sample used in this study included only widowed men, whereas in all other samples the majority of participants were female.

Prevalence of Post Traumatic Stress Disorder (PTSD) was examined in five different studies using a total sample of 772 widowed individuals. Post Traumatic Stress Disorder was diagnosed in 91 widowed individuals (11.8%) and like MDD, the prevalence of PTSD declined with time. As shown in Table II, we included two studies with high prevalence rates in the first six months following the loss (Kaltman & Bonanno, 2003; Schut et al., 1991;

CI, 0.12–0.33). We also included two studies examining the prevalence of PTSD during a later phase of the bereavement process (Silverman et al., 2001; Zisook et al., 1998). Those studies that examined prevalence 13 months after the loss and during a 34-month period had CI's ranging from 0.02–0.12. The last study screening for PTSD differed from the other included studies (Barry et al., 2002). This study was conducted four months after the loss, but displayed a similar confidence interval (0.02–0.10) to those studies focusing on later time points. However, as we already mentioned, this study used a selected sample of widowed individuals from self-help and religious organizations—receiving specialized support—instead of a representative community sample.

One study explored the prevalence of Panic Disorder (PD) and Generalized Anxiety Disorder (GAD), in a sample of 102 widowed individuals within the first 12 months after the loss (Jacobs et al., 1990). In this study, 10 widowed individuals (9.8%) met diagnostic criteria for PD, and 32 widowed individuals (31%) met diagnostic criteria for GAD. Because we detected only one study examining the prevalence of PD and GAD, we were not able to determine the influence of time.

Prevalence of mental disorders in the widowed compared to non-widowed controls

Six of the included studies also reported data from non-widowed controls. The composition of those comparison groups varied among the different studies. Two of the studies selected demographically similar married individuals who were matched to their widowed counterparts (Byrne et al., 1999; Zisook et al., 1994). In addition, three prospective studies (Bruce et al., 1990; Turvey et al., 1999; Zisook et al., 1994) had large samples examined at various time points. Although those studies were not necessarily conducted to study widowhood, they were very useful for comparing the widowed to the non-widowed. All individuals who lost their spouse between two periods of data-collection were selected to constitute the widowed sub-sample, with the remaining individuals serving as a comparison group. The last comparison group formed no part of the study referring to it (Jacobs et al., 1990) but compared the prevalence rates they detected to the prevalence rates reported in a large study on anxiety disorders in a community population.

Five of the controlled studies examined the prevalence of Major Depressive Disorder (Bruce et al., 1990; Byrne & Raphael, 1999; Carnelley et al., 1999; Turvey et al., 1999; Zisook et al., 1994, 1998). In order to compare the widowed to their non-widowed counterparts, we calculated relative risks together with the surrounding confidence intervals. As displayed in Table II, only four of the resulting relative risks were statistically significant

Table 1. Studies examining mood and anxiety disorders in the widowed.

Study	Population	INR	N	Disorder	Measure	Mean age	% Female	Recency	Country	Type of study
(Jacobs et al., 1989)	Surviving spouses of deceased adults aged 21–65 were identified through death certificates	37.6%	111	MDD	SCID	54	77%	36.9% 6 m; 63.1% 12 m	USA	Cross-sectional
(Bruce et al., 1990)	Multistage probability sample of married adults 45 years and older	23%	1180 (39 widowed)	MDD	DIS	W: 73.4 NW: 65.2	W: 61.5% NW: 41.1%	Within 12 m	USA	Prospective Controlled
(Jacobs et al., 1990)	Surviving spouses of deceased adults aged 21–65 were identified through death certificates	41%	102	Panic disorder GAD	SCID	55	81%	47% 6 m 53% 12 m	USA	Cross-sectional
(Schut et al., 1991)	Spousally bereaved individuals were identified by obituary notices in Dutch local and national newspapers	54%	128	PTSD	DSM-III-R	54.4	82%	4 m (11, 18, 25 m)	NL	Prospective
(Zisook et al., 1998; Zisook et al., 1994)	Newly widowed individuals were identified through death certificates	20%	350	MDD PTSD	DSM-III	62	73%	2 m (7, 13, 19, 25 m)	USA	Prospective Controlled
(Carnelley et al., 1999)	Multistage, stratified, area probability sample of married women aged 54 years and older	33%	495 (64 widowed)	MDD	DIS	66	100%	Within 36 m	USA	Prospective
(Turvey et al., 1999)	Sample of non-institutionalized USA population born in 1923 or earlier	NR ^(a)	5449 (223 new and 2113 old widowed)	MDD	CIDI	77	62%	9.6% < 2y; 90.4% > 2y	USA	Prospective Controlled
(Byrne et al., 1999)	Widowed men aged 65 and older were identified through death certificates	33.7%	57	MDD	CIDI	75	0%	6 w (13 m)	AUS	Prospective Controlled
(Silverman et al., 2001)	Recently widowed individuals were obtained from lists of the Widowed Persons Service (WPS), death certificates and clinical referrals	23%	85	MDD PTSD	SCID	63	55%	2–34 m	USA	Cross-sectional
(Barry et al., 2002)	Recently widowed individuals were obtained from lists of the (WPS), the Chaplains Office of the Hospital, and personal referrals	NR ^(a)	122	MDD PTSD	SCID	63.7	70.5	4 m (9 m)	USA	Prospective
(Kaltman et al., 2003)	Spousally bereaved residents were recruited through advertisements, posed notices, and referrals from medical and religious organisations aged 21–55 years	NR ^(a)	87	PTSD	SCID	45.8	69%	6 m (14, 25 m)	USA	Prospective

^(a) Exact number of subjects asking for information not reported. INR, initial non-response; NR, not reported; W, widowed; NW, not widowed.

Table II. Studies reporting mood and anxiety disorders in the widowed: Prevalence and relative risks.

Study	Disorder	Recency	Prevalence	95% CI	Prev (95% CI)	RR	95% CI	Type comparison group
Jacobs et al., 1989	MDD	Within 12 months	0.29	0.21-0.37	—	—	—	—
Bruce et al., 1990	MDD	Within 12 months	0.31	0.16-0.46	—	9.76	5.48-17.41	—
Zisook et al., 1994	MDD	7 months	0.23	0.19-0.27	—	5.81	2.40-14.05	Demographically similar married controls (<i>n</i> = 126)
Carmelley et al., 1999	MDD	Within 36 months	0.13	0.05-0.21	—	4.14	1.79-9.61	Still married controls (<i>n</i> = 431)
Turvey et al., 1999	MDD	Within 24 months	0.13	0.09-0.17	—	4.35	2.94-6.46	Married, divorced or never married controls (<i>n</i> = 3113)
Byrne & Raphael, 1999	MDD	13 months	0.02	0.00-0.06	—	3.17	0.13-76.11	Matched married men (gender, age, residence, and SES <i>n</i> = 57)
Silverman et al., 2001	MDD	Within 34 months	0.12	0.05-0.19	—	—	—	—
Barry et al., 2002	MDD	4 months	0.09	0.04-0.14	—	—	—	—
Schut et al. 1991	PTSD	4 months	0.25	0.17-0.33	—	—	—	—
Zisook et al. 1998	PTSD	13 months	0.08	0.05-0.11	—	—	—	—
Silverman et al., 2001	PTSD	Within 34 months	0.07	0.02-0.12	—	—	—	—
Barry et al., 2002	PTSD	4 months	0.06	0.02-0.10	—	—	—	—
Kaltman & Bonanno, 2003	PTSD	6 months	0.21	0.12-0.30	—	—	—	—
Jacobs et al., 1990	Panic Dis.	Within 12 months	0.10	0.04-0.16	—	9.67	4.88-19.18	Prevalence in community population (<i>n</i> = 3058)
Jacobs et al., 1990	GAD	Within 12 months	0.31	0.22-0.40	—	3.49	2.56-4.75	Prevalence in community population (<i>n</i> = 3058)



(the surrounding confidence intervals did not include the value 1). Those relative risks ranged from 4.14–9.76 and all surrounding confidence intervals coincided (range 1.79–17.41).

The last study compared prevalence rates of PD and GAD (Jacobs et al., 1990). Both relative risks resulting from this study were statistically significant. Prevalence of PD displayed a relative risk of 9.67 and a confidence interval ranging from 4.88–19.18. GAD demonstrated a relative risk of 3.49 and a confidence interval ranging from 2.56–4.75. Unfortunately, none of the studies examining PTSD used controlled data. Therefore, we were not able to calculate a relative risk for this disorder.

Incidence of mental disorders

Six of the studies we included assessed their subjects on more than one occasion. Three of them presented follow-up data on MDD (Barry et al., 2002; Byrne & Raphael, 1999; Zisook et al., 1994). Zisook et al. (1994) contacted their sample five times in a two-year period. Although prevalence rates were presented for each assessment, information on new cases was only reported for one measurement. Diagnosis of MDD remained stable during the first 13 months of bereavement for 28% of those individuals initially suffering from MDD. Consequently, the presence of MDD 13 months after the loss (prevalence rate 0.12) was caused by 50% old and 50% new cases (incidence rate is 0.50). The other studies (Barry et al., 2002; Byrne & Raphael, 1999) did not report information on the incidence of MDD.

Four follow-up studies examined the presence of PTSD on different occasions (Barry et al., 2002; Kaltman & Bonanno, 2003; Schut et al., 1991; Zisook et al., 1998). Schut et al. (1991) interviewed their sample of widowed individuals four times during a two-year period. The diagnosis of PTSD appeared to be relatively stable. Only 18% of the subjects did not meet the diagnostic criteria at more than one point in time; all other subjects received repeated diagnoses. Incidences rates for different time periods were 0.08, 11 months after the loss of a spouse, 0.05 after 18 months, and 0.04 after 25 months. Zisook et al. (1998) conducted three different interviews in the two years they examined their sample. Forty percent of all individuals initially diagnosed with PTSD (prevalence 0.10) still met the diagnostic criteria 13 months post-loss (prevalence 0.08). Therefore, 50% of all cases after 13 months did develop the disorder between both measurements (incidence rate 0.50). Sixty percent of all cases identified during the second assessment at 13 months were also diagnosed during the last assessment at 25 months. This last measurement demonstrated an incidence rate of 0.02. Barry et al., (2002); Kaltman & Bonanno

(2003) did not report information on the incidence of PTSD.

Discussion

One of the main limitations of this review was the small number of studies that met the inclusion criteria as studies examining the prevalence and incidence of mood and anxiety disorders complicating bereavement remain quite rare. Results were further limited by variations in the diagnoses examined, which made it impossible to perform all analyses for each separate disorder. Furthermore, the included studies used different research methods, diagnostic instruments, and to some extent different samples. These variations complicated a comparison of the included studies and the generalisability of the results. In addition, generalisability of the results is limited by the substantial initial non-response rate in several studies, and by most of the included studies being conducted in the USA. Finally, some of the study reports were incomplete, therefore, we could not retrieve all the information we desired. Because of these limitations, the results of this study should be considered with caution.

Despite the limitations, the results of this review clearly demonstrate the importance of paying attention to the presence of mood and anxiety disorders in the widowed. This review indicates that the prevalence of MDD and several anxiety disorders were considerably elevated in widowed individuals, especially in the first year after the loss of a spouse. Although the small numbers of studies reporting incidence rates clearly present an incomplete picture, they still offer several indications on both the stability of mood and anxiety disorders complicating bereavement and the timeframe for the development of those disorders. In many cases, MDD as well as PTSD appeared relatively soon after the loss. However, the results indicate that, in spite of the declining risk over time, new cases still developed. Both MDD and PTSD were found to be persistent in a substantial number of the examined individuals. Clearly, the development and persistence of MDD and PTSD should be further studied. However, even the small amount of information available strongly implies a need for elevated vigilance during a longer period of time, even when the widowed initially do not meet diagnostic criteria. Furthermore, the incidence and persistence of other anxiety disorders needs to be studied extensively.

Findings from two of the studies we included deviated from the remaining results. Those studies directed towards a different population, offered some interesting insights. The first study (Byrne et al., 1999) included only widowers. This study did not confirm the elevated prevalence

of MDD we discovered in the remaining studies. These results could suggest that compared to widowers, widows are more at risk of developing MDD. This idea is supported by Jacobs et al. (1989). Widows in this study were more likely to be diagnosed with MDD than widowers. However, it is not possible to draw conclusions based solely on these studies. The other studies including both widows and widowers did not report separate data for both sexes. In addition, studies examining depressive symptomatology did not offer an unequivocal impression. Although possible gender differences in the bereavement process have been examined to a great extent, the influence of gender is still debated. Most of the studies focusing on depressive symptomatology did not suggest widows to be more at risk. Most research pointed towards the opposite direction, which is mostly explained by the higher prevalence among non-widowed women compared to non-widowed men (Stroebe, M. S., Stroebe, W., & Schut, 2001). In order to draw any conclusions on the influence of gender on the prevalence of MDD, we need to understand in which way the depressive symptomatology from those studies mentioned relates to the diagnosis of MDD examined by Byrne and Raphael (1999) and Jacobs et al. (1989). A possible explanation might be that widowers report considerable depressive symptomatology but display a distinct pattern of distress, and therefore do not meet the diagnostic criteria of a full blown disorder. The results of Byrne and Raphael (1999) offer some support for this possibility. Although the prevalence of MDD was extremely low compared to other studies, several widowers did report some depressive symptoms, severe sleeping problems and suicidal ideation. In order to fully understand possible gender differences in depressive symptomatology and MDD, more research is needed.

The second deviating study with a different population (Barry et al., 2002) offered some promising results. Their selected sample of widowed individuals participating in self-help and religious organizations, displayed a lower prevalence of MDD as well as PTSD compared to other studies with representative community samples. The most striking difference between this sample and those of most studies comprised specialized support during the bereavement process. Although other explanations were not ruled out, these findings might suggest that the provision of structured support for the newly widowed prevented some of the mental disorders complicating bereavement. These findings offer new possibilities for future research and assistance for the widowed.

This review has made a first effort to clarify the association between widowhood and the prevalence of mood and anxiety disorders. Although pain and grief seem natural in the aftermath of a loss, widowhood does not have to lead to long-term

suffering and dysfunction. Based on the studies we included, we believe that the widowed deserve full attention. That way, effective support can be developed and offered, to prevent or treat accompanying psychopathologies. In addition, further research is necessary in order to fully understand the risks and complications the widowed encounter. Based on the information we retrieved, we were not able to draw conclusions on distinctions in vulnerability to psychiatric illness of different groups of widowed individuals. In order to identify the population at risk, we need more information on the effects of possible confounding variables, such as gender, age, prior psychiatric illnesses and mode of death.

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