

ORIGINAL ARTICLE

Guilt after the loss of a husband to cancer: Is there a relation with the health care provided?

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Abstract

Background. Feelings of guilt are common after bereavement. We investigated whether feelings of guilt after the loss of a husband to cancer are associated with the health care provided at the time close to and at the moment of death. **Materials and methods.** The study population consisted of 506 widows of men who died of prostate cancer in 1995 or of urinary bladder cancer in 1995 or 1996 at the ages 45–74 years. We collected information on the received health care at the time of the husband's death from the widows, through a postal questionnaire. **Results.** Widows who perceived that their husbands did not get enough pain relief had an increased relative risk of 1.7 (95% CI 1.1–2.8), for guilt feelings, compared to widows who felt that their husbands had adequate pain relief. If a widow considered her husband being exposed to less satisfactory care or treatment, she had an almost two-fold increased relative risk, 1.9 (95% CI 1.2–3.1), for guilt feelings after the husband's death, compared to a widow who thought that satisfactory care or treatment was provided. **Discussion.** Feelings of guilt after bereavement may occur in response to the perception of inadequate health care during the last months and at the actual moment of death of the significant other.

To lose a loved one is a traumatic life event, regardless of the underlying cause of death, and entails increased risks for both psychological and physical morbidity, and mortality [1–4]. Bereavement is normally followed by grieving, an emotional response including guilt as one of the expressions [5]. Guilt, defined as a remorseful awareness of having done something wrong, however, is a complex and largely unexplored emotion in relation to bereavement. So called 'survivors guilt' often occurs after having experienced traumatic events where others die, in war or natural disasters or similar [6]. Parents who have lost a child through stillbirth or neonatal death frequently experience guilt, regardless of the circumstances of their loss [7,8]. The most persistent and intense form of guilt after bereavement would probably be associated with a perception of somehow having contributed to the death or suffering of the loved one. This perception

may result from a feeling of having caused the disease through, for example improper feeding, or lack of affection or support. The perception could also origin from a feeling of not having prevented the disease through for instance letting the person smoke, keep an unhealthy lifestyle, or not pushing physicians hard enough to detect or treat the disease.

Certain individuals may be more prone to react with guilt in situations of bereavement [8], which could lead to a less favourable long-term adjustment after the loss in these individuals [9]. The long-term effect of loss may further be modified by health care related factors, such as the experience of the significant other's unrelieved symptoms [10]. Indeed, in a previous study we found an increased risk of guilt in parents during the first year after having lost a child to cancer if the parents had a perception of inadequate health care [11]. Guilt was particularly evident among parents who were not confident that

their child would receive immediate help at the hospital if needed, and among parents who perceived that the health care providers were not competent enough [11].

We undertook the current study to test whether the association between inadequate health care and subsequent feelings of guilt also could be demonstrated in another survivor population, namely among 379 widows who lost their husbands to cancer in the years 1995 to 1996.

Materials and methods

Study population

This population-based nationwide Swedish study utilized The Swedish National Register of Cause of Death to identify 928 men, who died of prostate cancer in 1996 or urinary bladder cancer in 1995 or 1996 at the ages of 45 to 74 years, and who were diagnosed with cancer at least 90 days prior to their death. The female partners/wives (here called widows) of the men were identified from the Swedish Population Register as having the same address as the deceased at the time of his death. Of 601 identified widows, 506 met the inclusion criteria of our study; alive and under 80 years old as of April 1, 1999, and having a listed telephone number. The 506 widows included in our study population were initially approached with an introductory letter explaining the study objective followed by a telephone call to collect informed consent for participation in our study. Those who agreed to participate subsequently received a postal questionnaire. The study was approved by the Regional Ethics Committee at the Karolinska Institute, Stockholm, Sweden.

Questionnaire

The questionnaire was developed through in-depth interviews followed by face-to-face validation, and included 275 questions divided into three sections; the first referring to the period preceding death and the actual moment of death, the second referring to the first six months after the husband's death, and the third included questions regarding the widow's current life situation and health. The validation procedure for the questionnaire has previously been described in detail [4]. Our main outcome – feeling of guilt – was assessed through a single question “Did you have any feeling of guilt after the death of your husband?” with a dichotomous answer “Yes/No” and referred to the six month period immediately after the husband's death. The term guilt was left open to be interpreted by the respondent. The independent variables included various questions about the patient's distress, the

health care provided, and the information and support given both to the deceased and his wife during the last months before the husband's death and at the actual moment of his death. Since reports of guilt in widows are likely to be confounded by depression in the widow after the husband's death [12], self-reported information on depression was collected through a well-validated [10,13–15], seven digit visual-analogue scale in response to the question “Have you felt depressed during the past week?”. The widow was considered depressed if her answer corresponded to values between 3 and 7 on the digital scale, and non-depressed if she indicated a value between 1 and 2.

Statistical analysis

For the outcome – presence or absence of guilt feelings – the percentages of subjects in each category of the independent variables were calculated. Subsequently, the relative risk (RR), together with a 95% confidence interval for the RR (using the Mantel-Haenszel formula for the variance) [16], was calculated as the ratio of the percentages of each category of the independent variable among widows with and without the outcome. Multivariable logistic regression models were then used to determine the relative importance of the independent variables for explaining the variation in the outcome. The independent variables were grouped according to different aspects of the health care provided; the widow's access to support and information, the deceased person's access to support, information, and symptoms relief, and the degree to which the deceased person's needs were met by the health care services. Analyses were initially performed separately within each group. We evaluated a possible distorting effect of confounders by forward and backward selection process looking at changes in the chi-square value when introducing or eliminating each new independent variable into the model. Only the variables age and education contributed to a substantial change in χ^2 estimate ($p < 0.05$) and were thus adjusted for in the multivariable models. Apart from these variables we included depression status “Yes/No” in the final multivariable model, since we consider this variable to be a likely confounder of our studied associations. In order to produce adjusted relative risks the procedure Genmod, utilizing a log link and binomial error distribution, were used in SAS version 8.

Results

Among the 506 eligible widows, 379 (75%) returned the questionnaire. Reasons for non-participation

included: psychological burden (7%), no given reason (7%), did not return questionnaire despite agreement to participate (5%), illness (3%), not reachable (2%), unknown or other causes (2%), and deceased ($<1\%$). Those who declined to participate did not differ from participants with regards to their age distribution or their area of residency. The demographic characteristics of the 379 widows who answered the questionnaire are displayed in Table I. Their mean age was 67.6 years and, on average, three years had passed since the death of their husband. The majority of widows had been married for more than thirty years (78%), and had two or more children together (67%) with the deceased. Most widows had completed only elementary school (59%), were employed (47%), and confessed to the Swedish protestant church (86%). Feeling of guilt was reported by about one third (29.4%) of the widows during the six months after the husband's death.

The younger widows (<65 years old) were more prone to guilt feelings than the older widows

Table I. Characteristics of 379 widows who lost a husband in prostate cancer or bladder cancer during the period 1995–1996.

Characteristics	No. of Widows (%)
Age of the widow	
45–64	109 (29)
65–74	212 (56)
75	51 (13)
Not stated	7 (2)
Years of marriage with the deceased	
≤ 10	12 (3)
11–30	61 (16)
> 30	296 (78)
Not stated	10 (3)
Number of children together with the deceased	
0	56 (15)
1	68 (18)
2	150 (39)
≥ 3	105 (28)
Widow's education	
Elementary school	224 (59)
College	92 (24)
University	51 (14)
Not stated	12 (3)
Widow's source of income	
Employed	180 (47)
Retired	145 (38)
Unemployed	7 (2)
On sick leave	40 (11)
Not stated	7 (2)
Widow's religious confession	
Swedish church	326 (86)
Other religion	21 (5)
Not religious	25 (7)
Not stated	7 (2)

(≥ 75 years old) (Table II). The increased relative risk of 1.9 (95% CI 1.0–3.6) persisted after adjustment for the widow's education and her self-reported depression. Risk of guilt feeling was not associated with any other demographic characteristic of the widows (Table II). The risk for feelings of guilt in relation to the widow's access to support and information is illustrated in Table III. The widow's perception of not having received honest information from caregivers was associated with an adjusted relative risk of 1.5 (95% CI 1.0–2.4) for feelings of guilt, compared to a perception of having received honest information from caregivers (Table III). Other indicators of the widow's access to support and information during the last three months of the husband's life were not associated with increased risk for guilt (Table III).

Widows who felt that their husbands did not receive enough pain relief during their last three months of life, had a 70% increased adjusted relative risk, 1.7 (95% CI 1.1–2.8), of feeling guilt, compared to those who were entirely sure that enough pain relief was provided (Table IV). Also, the perception that the husband did not get enough support or enough information by the caregivers was related to an adjusted relative risk of 1.6 (95% CI 1.0–2.5), and 1.6 (95% CI 1.0–2.6) respectively, for feelings of guilt in widows, as compared to widows considering that their husbands did receive enough support and information (Table IV).

A perception of not having good access to doctors during the husband's last three months of life was associated with feelings of guilt in widows, with an adjusted relative risk of 1.6 (95% CI 1.0–2.7), as opposed to being certain that the husband had good access to doctors (Table V). If the widow considered her husband being exposed to less satisfactory care or treatment during his last three months of life, she had an almost two-fold increased adjusted relative risk 1.9 (95% CI 1.2–3.1) of guilt feelings after the husband's death, compared to if satisfactory care was reported (Table V).

Discussion

Our results suggest that inadequate health care during the terminal stage of disease may contribute to the development of guilt feelings in widows. The ramifications of this with regard to the palliative care guidelines have yet to be addressed. Most of the investigated variables showed no or little association with the variations of feelings of guilt. However, we found increased risk for guilt in widows who considered that their husbands did not receive enough pain relief during his last three months compared to widows who thought pain relief was

Table II. Unadjusted and adjusted relative risks for feeling of guilt among bereaved widows in relation to demographic characteristics at time of the deceased diagnosis.

Variable	Feeling of Guilt No./ Total no. (%)	Relative Risk	
		Unadjusted (95% CI)	Adjusted* (95% CI)
Age of the widow			
45–64	39/107 (36.0)	1.9 (1.0–3.6)	1.9 (1.0–3.6)
65–74	56/201 (27.9)	1.5 (0.8–2.7)	1.5 (0.8–3.0)
≥75	9/47 (19.1)		1.0
Years of marriage with the deceased			
≤10	4/11 (36.4)	(0.6–2.8)	1.0 (0.5–2.3)
11–30	19/60 (31.7)	1.1 (0.7–1.7)	0.8 (0.5–1.3)
>30	80/279 (28.7)	1.0	1.0
Number of children together with the deceased			
0	15/52 (28.9)	0.8 (0.5–1.4)	0.8 (0.5–1.4)
1	13/64 (20.3)	0.6 (0.3–1.0)	0.6 (0.4–1.1)
2	44/146 (30.1)	0.9 (0.6–1.3)	1.0 (0.7–1.5)
≥3	33/95 (34.7)	1.0	1.0
Widow's education			
University	17/50 (34.0)	1.2 (0.8–1.9)	1.0 (0.7–1.6)
College	28/91 (30.8)	1.1 (0.8–1.6)	1.0 (0.7–1.5)
Elementary school	57/208 (27.4)	1.0	1.0
Widow's source of income			
Unemployed/ On sick leave	11/44 (25.0)	0.8 (0.5–1.4)	0.9 (0.5–1.6)
Retired	40/136 (29.4)	0.9 (0.7–1.3)	1.5 (0.9–2.4)
Employed	54/174 (31.0)	1.0	1.0
Widow's religious confession			
Not religious	9/22 (40.9)	1.4 (0.8–2.4)	1.2 (0.7–2.2)
Other religion	4/21 (19.1)	0.6 (0.3–1.6)	0.7 (0.3–1.7)
Swedish church	92/311 (29.6)	1.0	1.0

*Adjusted for age of the widow (as a continuous variable), widow's education when applicable, and widow's self-reported depression (yes/no).

adequate. Furthermore, widows who considered that their husbands were exposed to less satisfactory care and treatment were two times more likely to react with guilt than widows that considered their husband's care being satisfactory. Our results are consistent with some of the findings of a previous investigation of feeling of guilt in relation to the provided health care among parents who lost a child to cancer [11]. That study indicates that feelings that their child had little or no access to pain relief, dietary advice, anxiety relief, or relief of other psychological symptoms increased the risk for subsequent guilt two-fold in the parents. Parents who considered the staff being incompetent and who were unsure whether their child would receive immediate help at hospital were at a particularly high risk for guilt after the child's death.

Both those who are dying from cancer and his or her relatives are generally very dependent on the health care during the last months of life. This fact can in itself be difficult to handle for an individual who has been the main source of support to the deceased for perhaps several decades. It is concei-

vable that the widows often considered themselves better judges of their husbands' needs than the health care staff. Yet, clinical experience indicates that some of the widows in our study population belonged to a generation where decisions of doctors and the treatment provided should not be questioned. Nevertheless, unmet needs, such as insufficient symptom control and emotional support are common among terminal cancer patients, and are likely to put them at higher risk of psychological distress [17–19]. This emotional distress could in turn affect the significant other in several ways. Earlier evidence suggests that the patient's unrelieved psychological symptoms (not including pain and other physical symptoms) increased the widow's risk of long-term depression and anxiety [10]. Since depression is also closely related to guilt [12], depression could act as a confounder of our studied associations. We therefore chose to adjust for self-reported depression in our analyses to be able to adequately assess predictors of guilt per se. Interestingly, after adjustment for self-reported depression the increased risk for feelings of guilt was still evident

Table III. Unadjusted and adjusted relative risks for feeling of guilt among bereaved widows in relation to the widow's access to support and information during the husbands last 3 months of life.

Variable	Feeling of Guilt No./Total no. (%)	Relative Risk	
		Unadjusted (95% CI)	Adjusted* (95% CI)
Possibility to participate in the care			
No, not at all	8/33 (24.2)	0.8 (0.4–1.4)	0.9 (0.5–1.6)
Partly	37/130 (28.5)	0.9 (0.6–1.3)	1.0 (0.7–1.4)
Yes, a lot	60/188 (31.9)	1.0	1.0
Possibility to discuss the husband's care with doctors			
Not needed	8/30 (26.7)	0.9 (0.5–1.7)	0.9 (0.5–1.8)
No, not at all or to a certain extent	47/157 (29.9)	1.0 (0.7–1.4)	1.0 (0.7–1.4)
Yes, for most part or entirely	47/162 (29.9)	1.0	1.0
Support from the family			
Not needed	12/49 (24.5)	0.8 (0.5–1.4)	0.8 (0.4–1.5)
No, not at all or to a certain extent	40/130 (30.8)	1.0 (0.7–1.4)	0.9 (0.6–1.2)
Yes, for most part or entirely	50/161 (31.1)	1.0	1.0
Help with the husbands pain and symptom relief			
Not needed	3/10 (30.0)	1.0 (0.4–2.7)	0.8 (0.2–2.5)
No, not at all or to a certain extent	28/93 (30.1)	1.0 (0.7–1.5)	0.9 (0.6–1.3)
Yes, for most part or entirely	70/237 (29.5)	1.0	1.0
Access to psychological support			
Not needed	10/43 (23.3)	0.8 (0.4–1.5)	0.8 (0.4–1.6)
No, not at all or to a certain extent	72/221 (32.6)	1.1 (0.8–1.7)	1.1 (0.7–1.6)
Yes, for most part or entirely	22/76 (28.9)	1.0	1.0
Trust in the doctors			
Never	7/15 (46.7)	1.8 (1.0–3.4)	1.6 (0.9–2.9)
Seldom to often	50/153 (32.7)	1.3 (0.9–1.8)	1.1 (0.8–1.6)
Always	42/166 (25.3)	1.0	1.0
Honest information from care givers			
Never	20/53 (37.7)	1.6 (1.0–2.5)	1.5 (1.0–2.4)
Seldom to often	48/145 (33.1)	1.4 (1.0–2.1)	1.2 (0.8–1.8)
Always	30/127 (23.6)	1.0	1.0
Opportunity to express my opinions			
Never	18/54 (33.3)	1.3 (0.8–2.1)	1.2 (0.7–2.0)
Seldom to often	54/173 (31.2)	1.2 (0.8–1.8)	1.2 (0.8–1.8)
Always	25/96 (26.0)	1.0	1.0
Acknowledgement of worries by care givers in a proper way			
Never	14/41 (34.1)	1.4 (0.8–2.4)	1.2 (0.7–2.0)
Seldom to often	52/163 (31.9)	1.3 (0.9–2.0)	1.2 (0.8–1.8)
Always	28/117 (23.9)	1.0	1.0

*Adjusted for age of the widow (as a continuous variable), widow's education (categorized as in Table II), and widow's self-reported depression (yes/no).

among widows who experienced that their husbands pain relief was unmet.

The health care today can be found demanding; on one hand the decision making and participation in the care by the relatives have increased, on the other hand the treatment options can be plentiful and the decisions to take may have serious consequences. Inevitably, these factors put a lot of pressure on significant others. An important task for the health care providers is thus to be receptive for the relatives' needs, wishes, and not the least his or her capacity to participate in the care. Particu-

larly, to handle the situation around the moment of death in an adequate way has proven to be important for several reasons. Parents, who sense that their dying child is aware of the imminent death, more often regret not having talked about death with their child than parents who did not sense the child's awareness [20]. Previous results suggest that the most feasible means of reducing bereaved parents long-term psychological burden is to minimize the child's physical pain and improve the care at the moment of death [21]. Furthermore, having the possibility to spend as much time as needed with the

Table IV. Unadjusted and adjusted relative risks for feeling of guilt among bereaved widows in relation to the deceased access to support during the last 3 months of life.

Variable	Feeling of Guilt No./Total no.(%)	Relative Risk	
		Unadjusted (95% CI)	Adjusted* (95% CI)
Unrelieved symptoms for 4 or more hours due to non-access to support			
No, never	64/241 (26.6)	1.0	1.0
Yes, occasionally	26/74 (35.1)	1.3 (0.9–1.9)	1.2 (0.8–1.7)
Yes, more than occasionally	11/25 (44.0)	1.7 (1.0–2.7)	1.3 (0.8–2.2)
Unrelieved symptoms for 4 or more hours despite access to support			
No, never	51/194 (26.3)	1.0	1.0
Yes, occasionally	33/101 (32.7)	1.2 (0.9–1.8)	1.3 (0.9–1.8)
Yes, more than occasionally	14/39 (35.9)	1.4 (0.8–2.2)	1.1 (0.6–1.8)
Received medication for depression or anxiety			
No	57/196 (29.1)	0.9 (0.7–1.3)	1.1 (0.8–1.5)
Yes	43/140 (30.7)	1.0	1.0
Access to symptom and pain relief			
Not needed	3/6 (50.0)	1.7 (0.7–3.7)	1.3 (0.5–4.0)
No, not at all or to a certain extent	6/25 (24.0)	0.8 (0.4–1.6)	0.9 (0.4–1.8)
Yes, for most part or entirely	95/314 (30.3)	1.0	1.0
Information on disease progress			
Not needed	7/28 (25.0)	0.9 (0.4–1.7)	0.7 (0.3–1.6)
No, not at all or to a certain extent	41/125 (32.8)	1.1 (0.8–1.6)	1.0 (0.7–1.5)
Yes, for most part or entirely	48/168 (28.6)	1.0	1.0
Access to dietary advice			
Not needed	13/60 (21.7)	0.8 (0.4–1.4)	0.7 (0.4–1.4)
No, not at all or to a certain extent	65/192 (33.9)	1.2 (0.8–1.8)	1.2 (0.8–1.7)
Yes, for most part or entirely	20/71 (28.2)	1.0	1.0
Psychological support			
Not needed	10/49 (20.4)	0.6 (0.3–1.2)	0.7 (0.3–1.4)
No, not at all or to a certain extent	60/188 (31.9)	1.0 (0.7–1.5)	1.0 (0.7–1.4)
Yes, for most part or entirely	27/85 (31.8)	1.0	1.0
Enough pain relief			
Not at all true	8/14 (57.1)	2.3 (1.4–3.9)	1.7 (1.1–2.8)
Less than entirely true	47/144 (32.6)	1.3 (0.9–1.8)	1.1 (0.8–1.5)
Entirely true	47/189 (24.9)	1.0	1.0
Enough support by care givers			
Not at all true	10/19 (52.6)	2.1 (1.2–3.5)	1.6 (1.0–2.5)
Less than entirely true	51/174 (29.3)	1.2 (0.8–1.7)	1.0 (0.7–1.3)
Entirely true	35/138 (25.4)	1.0	1.0
Enough information from the care givers			
Not at all true	17/42 (40.5)	1.7 (1.0–2.9)	1.6 (1.0–2.6)
Less than entirely true	50/177 (28.2)	1.2 (0.8–1.8)	1.1 (0.7–1.7)
Entirely true	22/93 (23.7)	1.0	1.0
Treated in a respectful way			
Not at all true	7/12 (58.3)	2.2 (1.3–3.7)	1.6 (0.8–2.9)
Less than entirely true	39/135 (25.5)	1.1 (0.8–1.5)	0.9 (0.7–1.3)
Entirely true	51/189 (27.0)	1.0	1.0
Satisfied with the care given			
Not at all true	2/11 (18.2)	0.7 (0.2–2.4)	0.6 (0.2–2.0)
Less than entirely true	31/79 (39.2)	1.5 (1.0–2.1)	1.3 (0.9–1.8)
Entirely true	64/238 (26.9)	1.0	1.0

*Adjusted for age of the widow (as a continuous variable), widow's education (categorized as in Table II), and widow's self-reported depression (yes/no).

Table V. Unadjusted and adjusted relative risks for feeling of guilt among bereaved widows in relation to the health care provided during the husbands last 3 months of life.

Variable	Feeling of Guilt No./ Total no.(%)	Relative Risk	
		Unadjusted (95% CI)	Adjusted* (95% CI)
Health care reacted quickly in response to our needs			
Not at all true	9/21 (42.9)	1.6 (0.9–2.8)	1.6 (0.9–2.7)
Less than entirely true	53/176 (30.1)	1.1 (0.8–1.6)	1.0 (0.7–1.4)
Entirely true	37/138 (26.8)	1.0	1.0
Good access to doctors			
Not at all true	13/27 (48.1)	1.9 (1.2–3.0)	1.6 (1.0–2.7)
Less than entirely true	47/160 (29.4)	1.1 (0.8–1.6)	1.0 (0.7–1.4)
Entirely true	39/152 (25.7)	1.0	1.0
Good access to nurses			
Not at all true	5/13 (38.5)	1.4 (0.7–2.9)	1.5 (0.7–3.1)
Less than entirely true	40/140 (28.6)	1.0 (0.7–1.5)	0.9 (0.7–1.3)
Entirely true	50/182 (27.5)	1.0	1.0
Access to care at hospital if needed			
Not at all true	9/19 (47.4)	1.7 (1.0–2.8)	1.3 (0.8–2.2)
Less than entirely true	20/74 (27.0)	1.0 (0.6–1.5)	0.9 (0.6–1.4)
Entirely true	70/248 (28.2)	1.0	1.0
Sure to get immediate help at the hospital if needed			
Not at all true	11/22 (50.0)	1.8 (1.1–3.0)	1.5 (0.9–2.4)
Less than entirely true	35/121 (28.9)	1.1 (0.7–1.5)	1.0 (0.7–1.4)
Entirely true	52/191 (27.2)	1.0	1.0
Sure to get immediate help at the home if needed			
Not at all true	22/56 (39.3)	1.4 (0.9–2.1)	1.3 (0.8–2.0)
Less than entirely true	38/140 (27.1)	1.0 (0.7–1.4)	0.9 (0.6–1.3)
Entirely true	35/124 (28.2)	1.0	1.0
Opportunity to discuss the disease with the care givers			
Not at all true	85/269 (31.6)	2.1 (0.8–5.4)	2.0 (0.8–4.9)
Less than entirely true	13/41 (31.7)	2.1 (0.8–5.9)	1.8 (0.7–5.0)
Entirely true	4/27 (14.8)	1.0	1.0
Supportive talks offered by the care givers			
Not at all true	85/270 (31.5)	0.9 (0.5–1.7)	1.0 (0.6–1.6)
Less than entirely true	6/38 (15.8)	0.5 (0.2–1.2)	0.5 (0.2–1.2)
Entirely true	9/27 (33.3)	1.0	1.0
Feeling that sometimes things went wrong in the care			
Not at all true	56/199 (28.1)	1.0	1.0
Less than entirely true	30/103 (29.1)	1.0 (0.7–1.5)	1.0 (0.7–1.4)
Entirely true	11/21 (52.4)	1.9 (1.2–3.0)	1.5 (0.9–2.6)
Exposure to less satisfactory care or treatment			
Not at all true	63/244 (25.8)	1.0	1.0
Less than entirely true	24/73 (32.9)	1.3 (0.9–1.9)	1.1 (0.7–1.6)
Entirely true	9/15 (60.0)	2.3 (1.5–3.7)	1.9 (1.2–3.1)

*Adjusted for age of the widow (as a continuous variable), widow's education (categorized as in Table II), and widow's self-reported depression (yes/no).

stillborn child and collecting a token of remembrance influence later psychological suffering in the bereaved parent [14].

The strengths of our study include our non-selected, nation-wide, population-based cohort of widows, utilizing registries covering virtually 100% of all eligible individuals. Additionally, we collected information anonymously through a well-validated questionnaire, which should ensure honest and

adequate answers. The detailed questionnaire included information on several, if not all, potential confounders. Our analyses did not indicate that the relation between an experience of inadequate health care and feelings of guilt could be explained by the distorting effect of one or several confounders. Nevertheless, our results should be interpreted with caution for the following reasons. The retrospective nature of our study, could affect the recall of

the offered health care, which would be a possible source of bias. Previous research suggests that the memory among bereaved individuals may be affected by their emotional status [22–24]. Thus, a widow with depression or anxiety could potentially view the past in a negative manner and thus report her husband as having more distress during his last months of life than he actually had. However, in our study, there was no association between the widow's psychological symptoms and the husband's pain or other physical symptoms, which indicates that a depressed widow was as able as a non-depressed widow to report low level of distress in her late husband [10]. Besides, we do not believe that guilt-prone widows would be more likely to over-report inadequate health care compared to other widows. Particularly so, since most of the potential predictors of guilt were not associated with increased risk for guilt. Thus, memory fallacies, if any, would likely be non-differential, and consequently could only lead to an underestimation of our risk estimates.

Another potential limitation with our data is the lack of a confirmed diagnosis of depression. We are dependent on the widow's self-reported feelings of depression. Yet, we are assessing the self-experienced emotion of guilt, thus we feel confident that including self-experienced feeling of depression in the analyses should adequately adjust for any confounding of depression on our outcome. Our follow-up time in this study was a compromise between our objective to investigate long-term morbidity in widows and the widow's expected memory capacity. However, we had only access to information regarding the widows' feelings of guilt during the first six months following their husbands' deaths. Regardless of our population-based sample, it is important to stress that our results relate to the health care setting in Sweden in the 1990's. Consequently, the results could not automatically be generalized to other populations where various culture specific factors may influence the relation between an experience of inadequate health care and guilt after bereavement, and where different circumstances for health care exist.

Despite the above mentioned caveats, our finding that provided health care affect later feelings of guilt in the bereaved is intriguing. Stringently, our observational data can not be translated to a prediction of the effect of any intervention. The growing pile of evidence showing that a dying patient's wellbeing during the last weeks in life influence the next-of-kin's long-term psychological status and morbidity gives us arguments to improve the palliative care. Possible increased financial costs in the short-term for improving the palliative care should be balanced by long-term decreased financial costs due to less

morbidity for the next-of-kin. Also, investigating effects of a psychological intervention to widows, for instance six months after death, by somehow addressing her feelings of guilt and experience of inadequate health care, may be worthwhile.

In conclusion, our study offers insight into potential mechanisms of guilt feelings after bereavement. Our findings suggest that the health care which is provided to the husband during the last months of life is associated with subsequent guilt in the widow. Particularly, a perception of not receiving enough pain relief and being exposed to less satisfactory care and treatment are important predictors of increased risk for guilt after the loss of a significant other. This knowledge may be of importance for improving the palliative care among individuals with terminal cancer.

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