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Beyond using composite measures to analyze the effect of unmet supportive care needs on caregivers' anxiety and depression

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Abstract

Objective: Caregiver research has relied on composite measures (e.g., count) of unmet supportive care needs to determine relationships with anxiety and depression. Such composite measures assume that all unmet needs have a similar impact on outcomes. The purpose of this study is to identify individual unmet needs most associated with caregivers' anxiety and depression.

Methods: 219 Caregivers completed the 44-item Supportive Care Needs Survey and the Hospital Anxiety and Depression scale [minimal clinically important difference (MCID)=1.5] at 6-8 months, 1, 2, 3.5, and 5 years following the patients' cancer diagnosis. The list of needs was reduced using Partial Least Square regression and those with a Variance Importance in Projection > 1 were analyzed using Bayesian Model Averaging.

Results: Across time, eight items remained in the top 10 based on prevalence and were labelled "core". Three additional ones were labelled "frequent", as they remained in the top 10 from 1-year onwards. Bayesian Model Averaging identified a maximum of four significant unmet needs per time point – all leading to a difference greater than the MCID. For depression, none of the core unmet needs were significant, rather significance was noted for frequent needs and needs that were not prevalent. For anxiety, 3/8 core and 3/3 frequent unmet needs were significant.

Conclusions: Prevalent Those unmet needs that are most prevalent are not necessarily the most significant ones, and findings provide an evidence-based framework to guide the development of caregiver interventions. A broader contribution is proposing a different approach to identify significant unmet needs.

Keywords: cancer; oncology; caregiver; families; survivorship; unmet supportive care needs; supportive cancer care; anxiety; depression; intervention development.

Background

The current cost containment climate of health care systems is shifting care from specialized care settings to the community, creating an ever-increasing hidden workforce of caregivers.[1] Caregiving by a family member is critical in maintaining and improving the well-being of individuals living with cancer, and in reducing demands on health care systems.[2] Worldwide, cancer is among the most common conditions requiring support from caregivers,[2] with caregivers providing a high proportion of the care patients need.[3] The amount of time caregivers commit to their role ranges from 7 to 41 hours per week and includes practical and medical care, emotional support, household tasks, financial management, and advocacy/decision-making role.[2, 4]

Caregivers often take on complex illness management roles with little to no formal support or skills training, and regardless of their readiness to do so.[5] This, in turn, can result in high levels of physical, (e.g., fatigue), social (e.g., isolation), financial (e.g., reduced work), and emotional (e.g., anxiety) burden.[5] A meta-analysis found that 26.3% of caregivers reported depression (range=18.4% – 35.0%), whereas 40.1% reported anxiety (range=25.4% – 55.9%).[6] These high rates of anxiety and depression require prompt action, because patients' and caregivers' emotional well-being are interdependent,[7] and depression and anxiety limit caregivers' ability to fulfil their vital roles.[8]

One variable associated with caregivers' depression and anxiety is unmet supportive care needs,[9] defined as the gap between the support required by caregivers and the support they actually receive.[10] A review by our team[9] revealed that 16% to 68% of caregivers reported unmet needs across six domains: comprehensive cancer care (e.g., access to services), emotional/psychological (e.g., dealing with own emotional distress), caregiver impact and daily activities (e.g. finances), relationship (e.g., communicating with patient), information (e.g.,

knowing what to expect), and spirituality (e.g., hope for future). Caregivers' unmet needs are not only associated with their depression and anxiety, but also adversely affects patients' well-being.[9]

Although the unmet needs literature point to some foci for interventions, one limitation has been the reliance on composite measures of unmet needs; mainly unmet need count and proportion of caregivers experiencing at least one unmet need.[9] Other studies have relied on unmet needs subscale (domain) mean scores.[9] This traditional approach assumes that all unmet needs are equal and might be omitting (potentially) those that are most individually predictive of anxiety and depression (but not necessarily "prevalent"). To date, there has been no attempt to identify those individual unmet needs most associated with poorer outcomes. As most studies use traditional regression analyses, the length of unmet needs surveys might explain the reliance on composite measures, as large samples would inadvertently be required. However, other statistical methods could be used (e.g., Partial Least Square Regression) to narrow the list of unmet needs. Using innovative statistical methods in this field is needed to better understand which caregiver unmet needs are most problematic to design effective interventions to optimize caregivers' and, indirectly, patients' illness adjustment.

We have previously reported on the prevalence and predictors of caregiver's unmet needs at 6, 12, and 24 months after the patient's cancer diagnosis.[11] This study adds to this publication by taking on a novel approach to identify those individual unmet needs that are most significantly associated with caregivers' depression and anxiety at 6 months and 1, 2, 3.5, and 5 years following the patients' diagnosis.

Methods

Design

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Data from the 5-year longitudinal Partners and Caregivers Study (*P&CS*) were used (2005-2012). The *P&CS* examined changes in anxiety, depression, quality of life, and unmet needs and identified variables associated with these outcomes[5, 11-13] among cancer caregivers.

Participants

Caregivers were recruited from patients participating in the Cancer Survival Study (*CSS*).[14] The *CSS* is a population-based, 5-year longitudinal study examining the psychosocial outcomes and lifestyle behaviours of cancer survivors.[14] Patients in the *CSS* were recruited from the cancer registries in Victoria and New South Wales, Australia and were eligible if they were: a) diagnosed in the past 6 months with prostate, bowel, female breast, head and neck, or lung cancer, or melanoma, Non-Hodgkin's lymphoma, or leukemia; b) aware of their diagnosis; and c) capable of completing the study. A caregiver specific inclusion criterion was caring for or living with a *CSS* participant. All participants were adults and needed to be fluent in English.

Procedures

Ethical approval was obtained (H-039-0505) and all *CSS* and *P&CS* participants provided written consent. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. At six to eight months post-diagnosis, in addition to their own survey, *CSS* participants were sent a separate, sealed *P&CS* pack to give to one nominated caregiver (if they had one). Caregivers interested in the P&CS were asked to return their consent form and baseline survey using the reply-paid envelope. Although the *P&CS* and the *CSS* were running in parallel, caregivers enrolled in the *P&CS* independently of the *CSS* participants.

Data Collection

Caregivers were surveyed first at 6-8 months post diagnosis (Wave 1), and then at 1, 2, 3.5 and 5 years (Waves 2-5, respectively). For this analysis, depression, anxiety, and unmet needs were taken into consideration.

Depression and Anxiety

The 14-item Hospital Anxiety and Depression Scale (HADS)[15] assessed depression and anxiety. The HADS items are equally divided into two subscales: HADS-Depression and HADS-Anxiety with each item scored from 0 to 3 (possible subscale scores = 0-21). Subscale reliability ranges from alpha = 0.67 to 0.93 in previous studies[16] and exceed 0.85 in the P&CS.[13]

Unmet needs

The Supportive Care Needs Survey – Partners and Caregivers (SCNS−P&Cs)[12] was used to assess 44 caregivers unmet needs. Each need was rated from =not applicable to 5=high unmet need. Needs with a score of 3 or above were considered unmet. Items can be grouped along five domains: Health care service needs, Psychological and emotional needs, Work and social needs, and information needs, whereby item scores are summed and standardized 0–100. The SCNS-P&C has been used in several caregiver studies[9, 17] and has adequate internal consistency (alpha=0.88-0.94).[12]

Demographics and illness variables

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Caregiver demographics assessed were age, sex, country of birth, marital status, education, employment, current household income, relationship to the person they are caring for, and caregiver-patient living arrangements.

Data analysis

To describe the type of unmet needs experienced, ranks based on frequency were assigned and top ranking needs were examined across waves to identify patterns. Linear mixed model (LMM)[18] was used to test the effect of time on unmet needs count. To address the main objective of this analysis, two types of analyses were conducted. First, the list of unmet needs was reduced by performing Partial Least Square regression at each time point (cross-sectional analysis). Partial Least Square regression is appropriate (and preferable to multiple linear regression) when dealing with highly correlated variables and with small variables per observation ratio.[19] Unmet needs considered to be significantly associated with the outcomes were those with a Variable Importance in Projection (VIP) exceeding 1.0.[20] In the second step, significant unmet needs (i.e., VIP > 1) were then considered for model selection using the Bayesian Model Averaging approach.[21] Bayesian Model Averaging identified those unmet needs at each time point most associated with depression and anxiety. Unlike standard model selection procedures, which typically aim to identify the single "best" model, Bayesian Model Averaging accounts for model uncertainty.[22] From each selected model, the average probability of having a non-zero coefficient (prob of 0) and the expected posterior value (EV) were computed for each item. The cut-off points to interpret the posterior probability were: < 50% no evidence of effect, 50–75% weak evidence, 75–95% positive evidence, 95–99% strong evidence, and > 99% very strong evidence.[23] In this analysis, the focus is on at least positive evidence. Data analysis was conducted using SAS software, Version 9.4 and R CRAN software. This analysis included caregivers who participated

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in all waves. Missing data did not follow a particular pattern and were less than 5%. For HADS, a

single missing item from a subscale was inferred by using the mean of the remaining six items.

For the SCNS-P&Cs, if at least 80% of the survey was completed, missing items were coded as

"no need" (done for 0.1% of needs data).

Results

Sample

A total of 1,698 *CSS* participants were sent a *P&CS* pack to pass on to their caregiver (number of

caregivers actually invited unknown) with 751 caregivers consenting to the study (consent rate =

44%). During the study, 647 caregivers returned a survey. However, 389 did not complete all

waves, and of those that did 39 had too many missing HADS or SCNS-P&C items, leaving 219

caregivers for the current analysis. Demographic characteristics of participants as well as those

excluded from the analysis are compared in Table 1. Baseline anxiety and depression significantly

($p < 0.001$) differed between participants included in the study [anxiety = 5.4 (SD=4.2),

depression = 2.9 (SD=3.3)] versus those excluded [anxiety = 7.1 (SD=4.6), depression = 4.4

(SD=3.7)].

Prevalence of unmet needs across time

At Wave 1, 59.4% (n = 130) of caregivers reported one or more unmet needs. A

significant decrease in the prevalence of unmet needs is noted from Waves 1 to 4 ($p < .05$). The

proportion of caregivers reporting at least one unmet need from Waves 2 to 4 was: 50.7%, 41.1%,

and 34.7%, respectively. However, a significant increase was noted at Wave 5 (40.6%)

(supplementary material 1).

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The unmet needs for caregivers across time by prevalence are shown in Supplementary material 2, along with their associated rank. Eight unmet needs are in the top 10 across all waves and were labelled "core" unmet needs: *14-Reduce stress in the person with cancer*, *31-Concerns about cancer coming back*, *32-Impact cancer had on relationship*, *33-Experience of person with cancer*, *34-Balance needs*, *35-Adjust to changes in person's body*, *36-Address problems with sex life*, and *39-Work through feelings about death*. Three unmet needs are in the top 10 unmet needs as of Wave 2 and labelled "frequent" unmet needs: *15-Look after own health*, *37-Get emotional support for self*, and *42- Decisions in context of uncertainty*.

Effect of unmet needs on depression and anxiety.

The preliminary Partial least square regression results are shown in Supplementary Material 2. Of note, across waves, between 15 and 20 unmet needs had a VIP > 1.0. Using Bayesian Model Averaging, the list of unmet needs identified through the Partial Least Square regression was reduced to 1-3 unmet needs with at least positive evidence of association with outcomes per wave. For depression (Table 2), none of the core unmet needs had at least positive evidence of association. Rather, it is the frequent unmet needs *42-Decisions in context of uncertainty* and *15-Look after your own health* that were most consistently significant. Across waves, caregivers with unmet need *42-Decisions in context of uncertainty* had depression at least 1.87 points higher than those who did not. At Waves 3 and 5, *15-Look after your own health* was associated with a 1.87 and 3.45 point increase in depression, respectively. The other significant unmet needs are wave-specific, and not necessarily those that are most prevalent (Table 2).

For anxiety (Table 2), the following needs were found to have a strong association: *15-Look after own health, 22-Impact of cancer on carer working life, 23-Find financial support*, and *42-Decisions in context of uncertainty.* At Wave 1, *42-Decisions in context of uncertainty* resulted

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in the largest increase of 2.51 points in anxiety, followed by *21-Adapt to changes in person's working life* (EV = 1.89). Unlike depression, core items *39-Work through feelings about death*, *31-Concerns cancer coming back*, and *14-Reduce stress in the person with cancer* were significant for at least one wave. Similar to depression, the remaining significant unmet needs were not the most prevalent ones.

Discussion

The present study is first to document caregivers' unmet needs over an extended period of time and is novel by determining the individual impact of unmet needs on anxiety and depression. Each key finding is discussed in turn.

As might be expected, from Waves 1 (6 months) to 4 (3.5 years) the mean number of unmet needs decreased from 7.0 to 2.9. A similar finding was reported by Kim et al.[24] among three cross-sectional cohorts, whereby 38–68% of caregivers reported unmet needs at 2 months, 49–60% at 2 years, and 19–36% at 5 years. Unlike the Kim et al.[24] study, the present study documented an increase in unmet needs at Wave 5 (5 years). This discrepancy might be explained by the difference in patients' cancer types and ultimately the cross-sectional nature of Kim et al.'s[24] analysis. An increase in unmet needs in the present study might be related to caregivers no longer being able to sustain their role without the needed support or that chronic unmet needs have weakened their resiliency.[25] Alternatively, some patients might have died or were not declared cancer free. This would be consistent with findings from Butow et al.[26] who found that unmet needs increased among caregivers of women with ovarian cancer in the last year of life.

A set of eight core and three frequent unmet needs were identified, mostly corroborating findings of previous cross-sectional studies.[9] For instance, Heckel et al.[27] also found that among caregivers of people newly diagnosed with cancer 14-*Reduce stress in the person with cancer* was

a top ranking unmet need along with mostly information needs. Janda et al.[17] emphasized that among caregivers of patients with brain tumor, prominent needs were also related to *31-Concerns cancer coming back*, *14-Reduce stress in the person with cancer*, *34-Balance needs*, *15-Look after own health*, and *42-Decisions in the context of uncertainty*. However, the present analysis adds to this literature by documenting the pervasiveness of these needs over time. Some of the core and frequent unmet needs also overlapped with those commonly reported by patients, including *fears about the cancer spreading* and *uncertainty about the future*.[28] This observation provides a rationale for dyadic or couple-based interventions, whereby addressing patients' and caregivers' unmet needs can have synergistic effects and enhance outcomes for both.[29]

Although a set of core and frequent needs were identified based on prevalence, these were not necessarily the most significant ones. The present study is the first one to go beyond the reliance on composite measures of unmet needs to identify individual unmet needs associated with depression and/or anxiety. The finding that none of the core unmet needs were significant for depression challenges the traditional practice of relying on prevalence to make decision about the content of interventions.[9] For depression, targeting less prevalent unmet needs such as *42-Decisions in context of uncertainty* and *22-Impact of cancer on carer working life* appear critical. However, for anxiety, three core unmet needs were significant, and point to key intervention content that might benefit the majority of caregivers. As caregivers tend to subjugate their own needs for those of the patient[30] and might be less likely to report their own needs, prevalence should not be the only indicator in selecting those needs to intervene on.

Another key finding is the shift in type of unmet needs significantly associated with depression and/or anxiety over time. At Wave 1 (6 months), corresponding with the end of treatment for many patients, caregivers highlighted the uncertainty experienced with this transition (e.g., *42–Decisions in the context of uncertainty*), recognizing the need to adjust to a

new "normal" (e.g., *21-Adapt changes person's working life*). In the early survivorship phase, patients continue to experience a number of challenges and caregivers must adapt to an ongoing set of patient care needs without the certainty offered by health care professionals and without knowing the extent to which the patient will recover.[31] At Wave 2 (1 year), caregivers continued to be concerned about patients' recovery, but one significant unmet need was 22-*Impact of cancer on the carers' working life*. Up to 45% of caregivers need to work fewer hours, because of their caregiving role with broad impacts of caregiving on work including having to take time off work, answering interrupting phone calls, changing employment, retiring early, or quitting altogether.[32] These changes can result in reduced income as well as concerns about job loss, employability, promotion prospects, and inadequate pension build-up.[32] At Wave 3 (2 years), findings emphasized a shift towards 15-*Look after your own health*. Caregiving has been associated with increased negative health behaviors, such as inactivity, smoking, and alcohol consumption.[2] Furthermore, a longitudinal analysis of mental and physical functioning in caregiver participants in the *P&CS* revealed that physical functioning, but not mental functioning, decreased over time.[33] Despite this, caregiver interventions disproportionality address their psychological needs, with little attention to other aspects of their health.[34] Wave 4 (3.5 years) significant unmet needs underscored the surveillance of recurrence (e.g., *31-Concerns cancer coming back*) and/or disease progression (*41-Cope with recovery not as expected*), as patients are approaching the 5-year survival time point. The impact of managing fear of recurrence persisted into Wave 5 (5 years); however, at this point the financial and personal toll of the cancer experience is re-emphasized.

One last important finding is that all significant unmet needs were associated with an increase in depression and/or anxiety that exceeded the minimal clinically important difference (MCID) of 1.5.[35] This further addresses a lingering conceptual question in this field: Is experiencing just one unmet need significant? Based on the present study, the answer is yes,

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particularly if either of the following unmet needs are reported: *Concerns cancer coming back* or

Decisions in context of uncertainty.

Clinical implications

Findings provide targets for interventions most likely to impact on caregivers' anxiety and

depression. Based on the present findings and other unmet needs studies,[9] our recommendation is

for caregiver interventions to include core and optional content.[36] The core content would address

the most prevalent unmet needs, likely to benefit the majority of caregivers. Whereas the optional

content would be tailored to caregivers' unmet needs that are not necessarily frequent but that are

most significant for depression and/or anxiety. Research is needed to determine whether

interventions specifically addressing caregivers' most significant unmet needs are more

efficacious than interventions that address caregiver coping skills more generically.

Study Limitations

A strength is that our sample size is sufficient for our analysis. According to Goodhue,[37] a

sample size of 219 caregivers, gives us a power > 0.8 to detect at least a medium effect size,

corresponding to an estimate of an unmet need parameter > 0.26. Our analysis also required

application of Bayesian Model Averaging, a Bayesian method, for which no sample size

considerations are mandatory. However, a well-known rule-of-thumb[38] recommends working

with at least 10 observations per variable for developing a stable model; since most of the models

retained by the Bayesian Model Averaging analysis contain less than 10 variables, the rule of

thumb was satisfied in our development.[38] A limitation is that this study was conducted in the two

Australian states with the largest populations and findings might not be generalizable to other

countries and health care settings. Another limitation is that a precise consent rate cannot be

calculated (number of survivors who had an eligible caregiver unknown). The retention rate

across waves was 55%, which might impact on the generalizability of the findings. The cross-

sectional nature of the analysis at each wave cannot establish causal links between the

independent and dependent variables in this study. Another limitation is that it is possible that the

association between some unmet needs and the outcomes reflect overlap in symptoms.

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Authors' contribution: All authors have made substantial contributions to, a) the conception of this analysis (SL, NHW, EB, AC, AG), data analysis (EB, AC, SL), and/or interpretation of data (SL, NHW, EB, AC, AG), and b) drafting the article (SL, NHW, AG) and/or revising it critically (EB, AC). All authors have read and approved the final version of the manuscript and agreed to be accountable for all aspects of this study.

Declaration of interests: We declare no competing interests.

Table 1. Caregivers' characteristics (baseline) by completers vs. non-completers

Characteristics	Completer (n=219)		Non-completer (n=321)		Chi-square p-value
	n	**%**	**n**	**%**	
Caregivers:					
Age					0.519
< 60	84	38.4	132	41.1	
≥ 60	135	61.6	189	58.9	
Sex					0.266
Male	60	27.4	102	31.9	
Female	159	72.6	218	68.1	
Education					0.452
Primary school	38	17.4	70	22.2	
Secondary completed	52	23.9	77	24.4	
Trade or TAFE	46	21.1	71	22.5	
University/post graduate	82	37.7	98	31.0	
(missing)	(1)		(5)		
Marital status					0.292
Married or common law	214	92.7	305	95.0	
Single/Separated-divorced/Widowed	5	2.4	16	5.0	
Country of birth					0.567
Australia	175	79.9	262	81.9	
Other	44	20.1	58	18.1	
(missing)			(1)		
Employment					0.546
Retired	75	34.4	106	33.0	
Full time	53	24.3	71	22.3	
Part time	24	11.0	36	11.3	
Self-employed	18	8.3	32	10	
Household duties	18	8.3	32	10.0	
Casual	14	6.4	12	3.8	
On leave	5	2.3	3	0.9	
Disabled	3	1.4	9	2.8	
Other	8	3.7	18	5.6	
(missing)	(1)		(2)		
Income					0.079
<500$ week	54	25.1	113	36.1	
500-799$ week	54	25.1	60	19.2	
800-1000$ week	33	15.3	40	12.8	
>1000$ week	46	21.4	57	18.2	
prefer not to answer	28	13.0	43	13.7	
(missing)	(4)		(8)		
Relationship to patient					0.054
Wife-husband, partner	200	91.3	288	89.7	
Daughter, son	7	3.2	13	4.1	
Mother/father	6	2.7	3	0.9	

Sister-brother	4	1.8	3	0.9	
Other	2	0.9	14	4.4	
Patient:					
Age					0.828
<60	86	39.5	85	40.5	
≥60	132	60.5	125	59.5	
(missing)	(1)		(111)		
Sex					0.862
Male	80	66.1	65	65.0	
Female	41	33.9	35	35.0	
(missing)	(98)		(221)		
Cancer type					**0.001**
Prostate	78	35.8	57	26.9	
Breast	36	16.5	21	9.9	
Haematological	32	14.7	37	17.5	
Colorectal	25	11.5	25	11.8	
Melanoma	25	11.5	28	13.2	
Head and neck	17	7.8	18	8.5	
Lung	5	2.3	26	12.3	
(missing)	(1)		(109)		

Note. Haematological = Non-Hodgkin lymphoma and leukaemia.

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Table 2. Bayesian Model Averaging **analysis for depression by wave**

Unmet needs items	Wave 1 Depression		Wave 1 Anxiety		Wave 2 Depression		Wave 2 Anxiety		Wave 3 Depression		Wave 3 Anxiety		Wave 4 Depression		Wave 4 Anxiety		Wave 5 Depression		Wave 5 Anxiety	
	Prob of 0	EV	Prob of 0	EV	Prob of 0	EV	Prob of 0	EV	Prob of 0	EV	Prob of 0	EV	Prob of 0	EV	Prob of 0	EV	Prob of 0	EV	Prob of 0	EV
3-Info services for carers			5.6	0.07											17.7	-0.55				
6-Info treatment side-effects													16	-0.26	24.8	-0.65				
7-Obtain best medical care	52.5	0.87	5.3	0.06																
10-Discuss concerns with MDs					2.9	-0.03							66.1	-1.69						
13-Complaints addressed																			1.2	0.00
14-Reduce stress in person with cancer*	60.4	0.88	34.4	0.54	11.1	0.11	2.3	0.01	2.8	0.02	21.8	0.34	0.8	0.00	11.8	0.19	2	-0.01	**85.1**	**2.38**
15-Look after own health**	5.3	0.05	3.2	0.03	6.9	0.06	16.8	0.25	**100**	**3.45**	**100**	**3.46**	44.6	1.01	64.2	2.22	**91.9**	**1.87**	23.6	0.51
17-Fears about deterioration	5.3	0.04	1.4	0.01	55.1	0.97	**98.9**	**3.32**	8.9	0.10	31.1	0.63	**92.7**	**1.96**	12.2	0.21				
21-Adapt to changes person's working life	24.8	0.32	**83**	**1.89**	8.7	-0.13	4.8	-0.07	45	0.83	1.7	0.01					2.2	0.01	4.8	0.06
22-Impact of cancer on work	3.3	0.02	1.1	0.00	**100**	**3.50**	**92.2**	**3.11**	2.9	0.00	2	-0.02	3.5	0.04	6.3	0.11				
23-Find financial support					2.6	0.01	4.8	0.05									**100**	**2.93**	**84.1**	**2.39**
31-Concerns cancer coming back*	5	0.03	1.2	0.00	5.4	0.04	6.1	0.06	7.8	0.07	21.8	0.32	32.1	0.39	**82.2**	**1.93**	9	0.08	**100**	**3.05**
32-Impact of cancer on relationship*	2.5	0.01	1.1	0.00	1.5	-0.01	2.3	0.00	5.4	0.05	7.7	0.10	1.1	0.00	19	0.32	39.5	0.56	5.3	0.06
34-Balance needs*	5.6	0.05	2	-0.01	18	0.25	4.3	0.04	1.8	0.01	1.7	0.01	0.9	0.00	1.4	0.01	7.9	0.09	6.6	0.07
37-Get emotional support for self**	1.9	0.01	1.1	0.00	2.7	0.01	4.9	0.05	1.2	0.00	7.6	0.10	16	0.19	1.3	0.01	40.9	0.69	**100**	**3.98**
39-Work through feelings about death*	0.8	0.00	**76.8**	**1.82**					1.9	0.01	**78.6**	**2.07**	11.2	0.17	34.6	1.02				
40-Deal with lack of acknowledgment	39.9	0.53	1.2	0.00	3	-0.02	6.7	-0.10	**78.9**	**1.57**	38.9	0.91	66.3	1.85	53.1	2.21	2.7	0.01	1.2	0.00
41-Cope with recovery not as expected	13.6	0.17			1.4	-0.01							**86.6**	**2.19**						
42-Decisions in context of uncertainty**	**97.9**	**2.70**	**89.6**	**2.51**	**100**	**2.36**	48.1	1.06	48.2	0.74	19.2	0.33	9.6	0.20	19	0.49	**92.1**	**1.87**	67.3	1.53

Note. EV = expected posterior value. * = core unmet needs, ** = prevalent unmet needs. Bolded BMA results = positive to strong evidence for significant association with outcome. To simplify the table, items with only a posterior probability < 15% were removed.

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