Published in final edited form as:
J Palliat Med. 2005 February ; 8(1): 96–106.

Health Behaviors Associated with Better Quality of Life for Older Bereaved Persons

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Abstract

Background: Bereavement is a risk factor for declines in health, adverse health behaviors, increased physician visits, and mortality, and occurs with greatest frequency in later life. Little is known about health behaviors that are associated with better quality of life among recently bereaved older persons.

Objective: The objective of this community-based longitudinal, observational study was to examine the influence of health behaviors on the quality of life of 200 elderly bereaved persons.

Design and Measurements: Health behaviors (i.e., exercise, monitoring caloric intake, sleep, daily vitamin intake, annual health check-ups) were examined at approximately 6 months postloss (baseline) and 11 months postloss (Wave 2). Quality of life was assessed at approximately 11 months postloss and 19 months postloss (Wave 3), using the RAND 36-Item Health Survey, which measures 8 domains of health and functioning, plus a single item assessing change in health.

Results: Consistently exercising 1 or more days per week at Waves 1 and 2 significantly ($p < .05$) predicted better self-rated health, physical functioning, fewer physical role limitations, and greater energy at Wave 3 in models that adjusted for age, gender, prior psychiatric disorder, baseline reports of functional disabilities and chronic conditions. Consistently monitoring caloric intake at Waves 1 and 2 predicted better self-rated health ($p < .05$), greater energy ($p < .01$), and positive change in health ($p < .05$) at Wave 3 in models that adjusted for the above set of control variables. Sleeping 6.5-9 hours per night at baseline alone predicted better social functioning ($p < .001$), fewer emotional role limitations ($p < .01$), better emotional health ($p < .001$), and greater energy ($p < .01$).

Conclusions: Should future research confirm these results, clinicians would be advised to recommend the identified preventive and protective health behaviors to recently bereaved older patients.

INTRODUCTION

BEREAVEMENT IS A HIGHLY STRESSFUL,[1-5] potentially disabling[4-7] experience that occurs with greater frequency in later life than at any other time in the life course.[8] The risk of major depressive episodes[6,7,9-11] and anxiety-related symptoms and disorders is elevated among bereaved persons.[12-14] Bereavement is also a risk factor for impaired immune function,[4] increased physician visits,[15] poorer physical health,[16-19] increased use of alcohol and cigarettes,[9,14,20] suicide,[18,21] and mortality.[22,23] Although much is known about the negative health effects

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of bereavement, little is known about beneficial health practices that might counteract these negative outcomes.

Most studies on facilitating healing among bereaved persons emphasize practices that minimize mental and physical health problems.[24] For example, minimizing sources of strain (e.g., learning to cook or manage money),[25] seeking employment, and maintaining a busy, daily rhythm of activity[26] have been associated with reductions over time in the severity of depressive symptoms of bereaved persons. The evidence is mixed regarding the emotional and physiologic benefits of disclosing thoughts and feelings about the loss of a loved one.[27-29] To the best of our knowledge, no previous study has evaluated health behaviors that might maintain or improve the quality of life of older bereaved persons.

In recent years, there has been a growing concern that the conventional medical endpoints of morbidity and mortality do not adequately account for the health status of older adults.[30] Quality of life outcomes have been increasingly emphasized. A stated goal of the Healthy People 2010 report is to increase the quality, availability, and effectiveness of community-based programs designed to prevent disease and improve health and quality of life.[31] Given that grief is associated with substantial decrements in quality of life,[32,33] and that bereavement occurs most often in late life,[8] when health and adaptive capacities may already be compromised, there is a need to identify health behaviors that improve the quality of life of older bereaved persons. The aim of our study was to examine the influence of five health behaviors on future quality of life of older bereaved persons.

METHODS

Study group

The assembly of the cohort has been described previously.[34,35] The study sample for this analysis (n = 200) was limited to persons who completed the baseline, Wave 2, and Wave 3 interviews, and to those over age 50 because we sought to study late-life bereavement.

Names of potential participants were obtained primarily through the Bridgeport/Fairfield division of the American Association of Retired Persons (AARP) Widowed Persons Service (WPS), a community-based outreach program that serves as an information clearinghouse. The names obtained from the WPS were compared to the death certificates recorded by the Greater Bridgeport Bureau of Vital Records for a sample 3-month period, in order to determine the completeness and accuracy of the WPS contact lists. The WPS listing included 95% of all deaths leaving behind a widow or widower in the Greater Bridgeport area, suggesting an unbiased and comprehensive ascertainment of recently widowed people in this region. Approximately 77.7% (n = 150) of the analysis sample was recruited through the WPS. Additional participants (22.3% of analysis sample) were recruited from *New Haven Register* obituaries, referrals, newspaper advertisements, and flyers. These participants did not differ significantly from WPS participants with respect to gender, income, or quality of life; they were, however, more likely to be older (mean age = 70.1; standard deviation [SD] = 9.6) than WPS participants (mean age = 65.3; SD = 8.4) (t = 1.99; p = 0.047).

Of the 575 eligible persons, 317 (55.1%) agreed to participate. Reasons for non-participation included: they were too upset (n = 27; 10.5%); they were “doing fine” (n = 23; 8.9%); they do not participate in research studies (n = 11; 4.3%); they were too busy (n = 46; 17.8%); they were not interested or “no reason” (n = 145; 56.2%); and “other” reasons (n = 6; 2.3%). Nonparticipants were more likely to be male (37.2% versus 25.9%, p = 0.0005) and older (mean age = 68.8 versus 61.7, $p < 0.0001$) than participants. Nonparticipants did not differ significantly from participants with regard to race (p = 0.57), with the majority of both participants and nonparticipants being Caucasian.

Of the 317 participants, 21 did not complete the Wave 2 interview, yielding 296 (93.4%) participants; 25 additional persons did not complete the Wave 3 interview, because they were unable to be reached, moved, or refused. Among the remaining 271 participants, 46 were excluded because they were less than 50 years of age, and 28 were excluded because they were not conjugally bereaved.

Data collection

Three master's degree-level interviewers were trained by the study principal investigator (H.G.P.) and the project director in the administration of the interviews until they were deemed by them to be capable of performing valid and reliable assessments. Interviewers were required to have nearly perfect ($\kappa = 0.90$ or higher) agreement with the principal investigator (H.G.P.) in their psychiatric diagnoses on five pilot interviews before receiving permission to interview for the study. The interviews were conducted in person either at the Yale Bereavement Study office in New Haven, Connecticut, or in the respondent's home, depending on the respondent's preference. The interviews lasted on average 2-3 hours, with the length depending largely on the talkativeness of the respondent.

Measures

Health behaviors. We selected health behaviors that have been shown in the literature[30,31,36-41] to be important for maintaining health—exercise, sleep, medical check-ups, diet, and nutritional supplements. These health behaviors were assessed at baseline and at the Wave 2 interview with the following questions:

The time frame of reference for the first four questions was the past month:

1. Do you take vitamins or nutritional supplements daily? (1 = Yes; 2 = No)
2. To what extent do you watch your caloric intake? (1 = very little or not at all; 2 = somewhat; 3 = very careful to avoid high-calorie foods)
3. How many days per week have you exercised on average? (open-ended)
4. How many hours of sleep do you get a night on average? (open-ended)
5. Do you have annual health check-ups? (1 =Yes; 2 = No)

Each health behavior was formulated into a dichotomous variable that separated those who practiced the health behavior from those who did not. Consistent health behavior variables were defined as performing the health behavior at both baseline and Wave 2.

The questions on daily vitamin intake and annual health check-ups already had a dichotomous (Y/N) response format. The question on caloric intake originally had a trichotomous response format. Exploratory analysis of variance revealed that there were no significant differences in any of the quality of life domains at Wave 2 based on the level that one monitored caloric intake at Wave 1, when 3 different levels were analyzed. Upon closer examination, we found that the 3 cells were not evenly distributed. Thus, the caloric intake variable was transformed into a dichotomous variable to provide a more even distribution across cells, with the responses "somewhat" and "very careful to avoid high calorie foods" grouped into 1 category.

The question on days per week of exercise was continuous. Because the distribution was not normal, the variable was initially transformed into a trichotomous variable to create a more even distribution of cells, in which the three baseline levels compared were the following groups: (1) no days of exercise; (2) 1-3 days of exercise; and (3) 4-7 days of exercise. Exploratory analysis of variance revealed that there were significant differences in Wave 2 quality of life domains between groups 1 and 2, and between groups 1 and 3, but there were

no significant differences between groups 2 and 3. Thus, groups 2 and 3 were collapsed into one level defined as people who exercised 1 or more days per week, and the exercise variable was dichotomized, with those who did not exercise at all constituting the second level.

The dichotomous variable for sleep separated those who slept between 6.5 and 9 hours from those who slept 6 hours or less, or 10 hours or more. Because a prior study on sleep and mortality[41] found that those who slept 6 or fewer hours experienced significantly increased mortality, we tested greater than or equal to 6.5 hours as a threshold defining good sleep. Ten or more hours of sleep was defined as poor sleep because we found it to be associated with significantly ($p < 0.05$) higher levels of fatigue and restlessness compared with those who slept 8-9 hours.

Outcome variables. Quality of life and functional status was assessed using the RAND 36-Item Health Survey (RAND-36),[42,43] which measures 8 health domains: self-rated health, bodily pain, energy, emotional role limitation, physical role limitation, social functioning, physical functioning, and mental health. It also includes a single item assessing change in health. Scores on all 8 subscales and the single item range from 0 to 100, with the higher scores reflecting better quality of life. The RAND includes the same items as the Medical Outcomes Study 36-item Short Form General Health Survey, but uses a different scoring algorithm for 2 of the 8 subscales.

Covariates. Chronic conditions were thought to be a potential confounder of the relationship between health behaviors and quality of life; thus number of chronic conditions reported at baseline was included as a covariate in all adjusted analyses. Chronic conditions were assessed using a previously validated self-report measure,[44] which asks participants whether a doctor had ever told them that they had chronic conditions such as congestive heart failure, high blood pressure, cancer, diabetes, osteoporosis, Alzheimer's disease, rheumatoid arthritis, and Parkinson's disease, and whether they were currently suffering from the condition.

Functional disability was assessed using 14 items from the subscale of the Established Populations for Epidemiological Studies of the Elderly,[45] which asks participants about their current ability to perform commonplace tasks such as walking across a room, bathing, dressing, using the toilet, eating, and getting from a bed to a chair. Each item was measured on a scale of 0 (no difficulty) to 4 (unable to do the task). The 14 items were summed to produce a measure ranging from 0-48.

Prior history of major depressive disorder, posttraumatic stress disorder, generalized anxiety disorder, and panic disorders was measured using the lifetime assessment found in the *Structured Clinical Interview for the DSM-IV* (*SCID*) *Axis I Modules*.[46] The SCID has high test-retest reliability for these lifetime diagnoses, with an overall weighted κ of 0.68.[47] Dates of the occurrence of prior psychiatric episodes were used to ensure that the prior disorder preceded the loved one's death.

Statistical Analyses

SAS System for Windows v. 8.1 (SAS Institute, Cary, NC) was used for all statistical analyses.

Analysis of variance (ANOVA) models (using the generalized linear model (GLM) procedure) compared mean quality of life domain scores at Wave 2 for those who did versus those who did not practice each health behavior at baseline. Each baseline health behavior that predicted any quality of life domain at Wave 2 in these unadjusted models was further assessed in bivariate analyses (*t* test, χ^2 test, or Fisher's exact test: two-tailed test) with potential confounders: sociodemographics, chronic conditions, functional disability, prior psychiatric disorder, months since the loss. None was found to be a confounder.

In addition to controlling for age and gender in our multiple regression analyses, we controlled for three additional factors identified as potential confounders in other studies of the quality of life and health of older bereaved persons[32-34,48,49]— baseline chronic conditions, baseline functional disability, and prior psychiatric disorder. In these multiple regression analyses (using the GLM procedure), least-squared means were used to compare each quality of life domain at Wave 2 for those who practiced each health behavior and those who did not.

To determine whether benefits would accrue from stable performance of the health behavior over time, consistent health behavior variables were created for each health behavior, defined as performing the health behavior at both Wave 1 and Wave 2. Multiple regression analyses were conducted to estimate the least-squared means of quality of life domains at Wave 3 for those who practiced each health behavior consistently, controlling for age, gender, prior psychiatric disorder, baseline chronic conditions, and baseline functional disability.

RESULTS

Participants were an average of 66.3 years of age (SD = 8.9), 73.5% female, 93.0% Caucasian, and had an average of 13.9 years of education (SD 2.8). The 200 participants who had complete data at baseline, Wave 2, and Wave 3 were relatively healthy; 48.0% had no impairments in physical functioning, and 20.1% had no chronic conditions. Few respondents met *Structured Clinical Interview for the DSM-IV (SCID)* criteria for baseline diagnoses of: major depressive disorder (8.3%), post traumatic stress disorder (5.1%), generalized anxiety disorder (5.6%), and panic disorder (3.3%) and 11.1% met the validated consensus criteria for complicated grief.[24] Table 1 shows that fewer participants perform each health behavior consistently than the number that perform each health behavior at Baseline or Wave 2. Because annual health check-ups and daily vitamin intake were not found to be significantly associated with any of the outcome variables in unadjusted bivariate analyses, we did not explore these variables further.

Table 2 shows that exercising 1 or more days per week predicts more quality of life outcomes when practiced consistently. The outcomes of better physical functioning ($p < .05$) and greater energy ($p < .05$) predicted by baseline exercise persisted when examining consistent exercise. In addition, consistent exercise significantly predicted better self-rated health ($p < 0.05$) and fewer physical role limitations ($p < 0.05$).

Table 3 shows that monitoring caloric intake at baseline predicted better emotional health and energy at Wave 2 ($p < 0.05$). While consistently monitoring caloric intake continued to predict greater energy ($p < 0.01$), it also predicted better self-rated health ($p < 0.05$) and a positive change in health ($p < 0.05$).

Table 4 shows that sleeping 6.5-9 hours per night at baseline alone significantly predicted better social functioning ($p < 0.001$), fewer emotional role limitations ($p < 0.01$), better emotional health ($p < 0.001$), and greater energy ($p < 0.05$). While consistently sleeping 6.5-9 hours per night continued to predict fewer emotional role limitations ($p < 0.01$), greater energy ($p < 0.05$), and better emotional health ($p < 0.05$), it did not predict better social functioning, but predicted worse physical functioning ($p < 0.05$).

Additional analyses that examined the cumulative or interactive effects of consistently sleeping and exercising the specified amounts and monitoring calories revealed no additional benefit of simultaneously performing more than one of these health behaviors.

DISCUSSION

Although bereavement is a common occurrence in later life[8] and is associated with substantial morbidity,[4-7,16-19] little is known about ways to protect or improve the quality of life of

bereaved elders. The salient results of this study suggest that consistently exercising 1 or more days per week predicts better physical health, consistently monitoring caloric intake predicts greater energy levels, and sleeping 6.5-9 hours per night in the months after bereavement predicts better social and emotional health.

Consistently exercising 1 or more days per week significantly predicted better physical functioning and fewer physical role limitations, even when controlling for baseline functional disability and baseline chronic conditions. In addition to influencing physical health, exercise may provide a social activity for bereaved persons. Regular social activity has been shown to reduce depressive symptomatology in bereaved elders.[26] In subanalyses that controlled for social support, the quality of life outcomes remained essentially the same, suggesting that the effects of exercise on quality of life are not explained by, and would appear to be independent of, social exercising. Surprisingly, the majority of participants in the study (57.6%) do not exercise at least 1 day per week consistently. Because 1 day per week of exercise is not an excessive amount of exercise, these findings provide a realistic goal for clinicians to recommend to their bereaved older patients to improve their physical functioning, emotional health, self-rated health, and energy levels.

As with exercise, consistently monitoring caloric intake was found to be significantly associated with greater energy. The majority of participants in this study (52.6%), however, did not monitor caloric intake consistently. Bereavement may exacerbate an incipient decline in energy levels associated with aging. Some bereaved older persons may be at risk of turning to food as a coping mechanism, and overeating may result in sluggishness and lower energy levels. Our findings suggest that monitoring caloric intake may positively influence energy levels.

Sleep deprivation has been touted as a widespread problem in the United States,[37] and has been shown to be a particular problem among the bereaved.[38] Our findings show a significant association between sleeping 6.5-9 hours per night and better quality of life in general. While consistently sleeping 6.5-9 hours per night significantly affected a variety of health outcomes (i.e., greater energy levels, fewer emotional role limitations, better emotional health), it also predicted worse physical functioning. Perhaps those who slept less than 6.5 hours per night were mostly younger, and hence had better physical functioning. Indeed, we found that 61% of respondents age 60 and below have consistent poor sleep behavior (sleeping below 6.5 hours or above 9.5 hours), while 52% had a perfect score in physical functioning.

Sleeping 6.5-9 hours per night only at baseline, in comparison, did not predict worse physical functioning. Instead, it predicted a new outcome, social functioning, in addition to predicting emotional health. Kaminer and Lavie's[50] study on sleep in Holocaust survivors describes a "well-adjusted group of survivors that is characterized by high sleep efficiency."[50] This group was characterized by strong ego forces, a repressive coping style, and low penetration of traumatic memories. Perhaps the bereaved subjects who were able to sleep 6.5-9 hours per night in the first few months of bereavement were similar to this well-adjusted group, and their ability to sleep this amount in the months after a significant life event such as bereavement is a reflection of their resilience.

Several potential study limitations deserve mention. Given the few chronic conditions and functional disabilities reported by this sample, respondents on average appeared to be in relatively good physical health. The lower baseline rates of Complicated Grief (11.1%), Post Traumatic Stress Disorder (5.1%), and Major Depressive Disorder (8.3%) compared to prior bereavement studies (20% Complicated Grief, 10% Post Traumatic Stress Disorder, 24% depressive episodes)[32,33,51-53] suggest that the sample also had relatively good mental health. Future studies should examine whether the results hold in bereaved individuals with

greater evidence of mental and physical impairment and whether these outcomes can even be generalized to nonbereaved older individuals. Future research should also explore the potential mechanisms by which these outcomes are associated with the recommended health behaviors (e.g., whether improvements due to monitoring caloric intake are actually the result of improvements in diet itself).

Despite these limitations, this study provides a first look at evidence regarding the influence of health behaviors on quality of life in a bereaved sample. Additional research is needed to confirm the predictive utility of consistently exercising 1 or more days per week, consistently monitoring caloric intake, and sleeping 6.5-9 hours per night in the months post-loss with respect to improvements in quality of life domains of bereaved elders. Should future research validate these findings, clinicians would be advised to recommend the identified preventive and protective behaviors to their older bereaved patients. Even in the absence of additional validation work, based on these results it would probably not be harmful to recommend to recently bereaved individuals that they exercise and eat in moderation and try to sleep enough to feel adequately rested, given that the health benefits of these practices have been well established.[26,30,36,39,40]

ACKNOWLEDGMENTS

This work was supported in part by grants MH56529 (H.G.P.) and MH63892 (H.G.P.) from the National Institute of Mental Health, CA106370 from the National Cancer Institute (H.G.P.), a Soros Open Society Institute Project on Death in America Faculty Scholarship (H.G.P.), a RAND/Hartford Interdisciplinary Geriatric Health Research Center grant (H.G.P.), a Fetzer Religion at the End-of-Life grant (H.G.P.), and by the following National Institute on Aging grants: Claude D. Pepper Older Americans Independence Center grant P30AG21342 (H.G.P., T.M.G.), T32AG019134 (T.M.G.), R01AG017560 (T.M.G.), and K24AG021507 (T.M.G.) and the Center for Psycho-oncology and Palliative Research at Dana-Farber Cancer Institute.

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Table 1.

Descriptive Statistics-Health Behaviors (N = 200)

Health behaviors	*Health behaviors at baseline*[a]	*Health behaviors at Wave 2*[b]	*Consistent health behaviors*[c]
Exercise 1-7 days/week	133 (69.6%)	134 (67.0%)	110 (57.6%)
Monitor caloric intake	122 (62.9%)	108 (54.0%)	92 (47.4%)
Sleep 6.5-9 hours/night	105 (55.0%)	109 (54.5%)	85 (44.5%)
Annual health check-ups	168 (87.5%)	171 (85.5%)	156 (81.3%)
Daily vitamin intake	149 (77.6%)	143 (71.5%)	129 (67.2%)

[a] Baseline interviews occurred at approximately 6 months postloss.

[b] Wave 2 interviews occurred at approximately 11 months postloss.

[c] Consistent health behavior is defined as performing each behavior in the month before the baseline interview and in the month before the Wave 2 interview.

Table 2.

ADJUSTED MEANS OF QUALITY OF LIFE DOMAINS AT FIRST FOLLOW-UP (W2)[a] FOR THOSE WHO EXERCISED AT BASELINE ($N = 216$[b]) AND FOR THOSE WHO CONSISTENTLY EXERCISED ($N = 200$)

Variable	n (%)	W2 Self-rated health	W2 Physical functioning	W2 Social functioning	W2 Physical role limitation	W2 Emotional role limitation	W2 Emotional health	W2 Bodily pain	W2 Energy	W2 Change in health
Baseline health behavior 1-7 days exercise/week [c]	144 (69.9%)	75.5	80.6*	87.4	75.1	80.1†	71.2	78.3†	61.2**	55.2
0 days exercise/week	62 (30.1%)	74.0	74.4*	86.9	78.8	69.8†	65.5	83.6†	53.2**	56.4

	n (%)	W3 Self-rated health	W3 Physical functioning	W3 Social functioning	W3 Physical role limitation	W3 Emotional role limitation	W3 Emotional health	W3 Bodily pain	W3 Energy	W3 Change in health
Conistent health behavior [d]										
1-7 days exercise/week	81 (42.4%)	77.1*	79.7*	89.0	81.8*	88.2	75.4†	79.4	63.5*	57.1
0 days exercise/week	110 (57.6%)	72.1*	72.1*	87.9	71.0*	80.0	71.5†	77.8	56.6*	54.2

† $p < 0.1$

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$.

[a] W2 interviews occurred at approximately 11 months postloss.

[b] 216 persons were included in the analysis involving only baseline and Wave 2 (W2) data. By Wave 3 (W3), 16 persons dropped out, yielding an *n* of 200.

[c] Adjusted for prior psychiatric historic, baseline functional disability, baseline chronic conditions, age, and gender.

[d] Consistent health behaviors are defined as performing the health behavior at both baseline (6 months postloss) and first follow-up (11 months postloss).

Table 3.

ADJUSTED MEANS OF QUALITY OF LIFE DOMAINS AT SECOND (W3) [a] FOLLOW-UP FOR GROUPS WHO MONITORED CALORIC INTAKE AT BASELINE (N = 216 [b]) AND FOR THOSE WHO CONSISTENTLY MONITORED CALORIC INTAKE (N = 200)

Variable	n (%)	W2 Self-rated health	W2 Physical functioning	W2 Social functioning	W2 Physical role limitation	W2 Emotional role limitation	W2 Emotional health	W2 Bodily pain	W2 Energy	W2 Change in health
Baseline health behavior										
Monitor caloric intake [a]	130 (62.2%)	75.8	78.9	89.1	74.4	80.9†	71.9*	78.7	61.9**	56.3
Not monitor caloric intake	79 (37.8%)	74.2	79.2	84.6	80.2	71.4†	65.9*	81.9	53.6**	54.1

	n (%)	W3 Self-rated health	W3 Physical functioning	W3 Social functioning	W3 Physical role limitation	W3 Emotional role limitation	W3 Emotional health	W3 Bodily pain	W3 Energy	W3 Change in health
Conistent health behavior [c]										
Monitor caloric intake [d]	92 (47.4%)	77.6*	78.1	90.3	77.7	87.8	76.1†	76.5	64.4**	59.3*
Not monitor caloric intake	102 (52.6%)	73.0*	75.8	87.3	77.5	82.4	72.0†	80.9	57.4**	52.3*

$^{\dagger}p < 0.1$

$^{*}p < 0.5$

$^{**}p < 0.01$

$^{***}p < 0.001$.

[a] Wave 3 (W3) interviews occurred at approximately 20 months postloss.

[b] 216 persons were included in the analysis involving only baseline and Wave 2 (W2) data. By Wave 3, 16 persons dropped out, yielding an n of 200.

[c] Adjusted for prior psychiatry history, baseline functional disability, baseline chronic conditions, age, and gender.

[d] Consistent health behaviors are defined as performing the health behavior at both baseline (6 months postloss) and first follow-up (11 months postloss).

Table 4.

ADJUSTED MEANS OF QUALITY OF LIFE DOMAINS AT SECOND (W3) [a] FOLLOW-UP FOR GROUPS WHO SLEEP 6.5-9 HOURS/DAY AT BASELINE (N = 216 [b]) AND FOR THOSE WHO CONSISTENTLY SLEEP 6.5-9 HOURS/DAY (N = 200)

Variable	n (%)	W2 Self-rated health	W2 Physical functioning	W2 Social functioning	W2 Physical role limitation	W2 Emotional role limitation	W2 Emotional health	W2 Bodily pain	W2 Energy	W2 Change in health
Baseline health behavior										
Sleep 6.5-9 hours/night[c]	113 (54.9%)	76.2	78.6	92.4***	77.1	84.1**	73.5***	80.3	61.8*	55.5
Sleep below 6.5 hrs/night OR over 9 hrs/night	93 (45.1%)	73.5	78.9	81.0***	75.2	68.3**	64.4***	79.2	55.0*	55.3

	n (%)	W3 Self-rated health	W3 Physical functioning	W3 Social functioning	W3 Physical role limitation	W3 Emotional role limitation	W3 Emotional health	W3 Bodily pain	W3 Energy	W3 Change in health
Conistent health behavior[d]										
Sleep 6.5-9 hours/night[c]	85 (44.5%)	75.5	72.9*	89.0	73.3	90.8**	76.5*	81.0	63.6*	54.2
Sleep below 6.5 hrs/night OR over 9 hrs/night	106 (55.5%)	74.6	79.6*	88.2	80.6	76.8**	71.5*	76.8	59.1*	57.2

† $p < 0.1$

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$.

[a] Wave 3 (W3) interviews occurred at approximately 20 months postloss.

[b] 216 persons were included in the analysis involving only baseline and Wave 2 (W2) data. By Wave 3, 16 persons dropped out, yielding an n of 200.

[c] Adjusted for prior psychiatry history, baseline functional disability, baseline chronic conditions, age, and gender.

[d] Consistent health behaviors are defined as performing the health behavior at both baseline (6 months postloss) and first follow-up (11 months postloss).