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Do Older Adults Expect to Age Successfully? The Association Between Expectations Regarding Aging and Beliefs Regarding Healthcare Seeking Among Older Adults

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OBJECTIVES: To measure expectations regarding aging among community-residing-older adults, identify characteristics associated with having low expectations regarding aging, and examine whether expectations regarding aging are associated with healthcare-seeking beliefs for age-associated conditions.

DESIGN: Self-administered mail survey.

SETTING: Greater Los Angeles.

PARTICIPANTS: Four hundred twenty-nine of 588 (73%) randomly selected community-residing adults aged 65 to 100 (mean age 76) cared for by 20 primary care physicians; 54% were women, and 76% were white.

MEASUREMENTS: The Expectations Regarding Aging Survey, a validated survey measuring expectations regarding aging; 13 items measuring care seeking beliefs; and validated measures of health status.

RESULTS: More than 50% of participants felt it was an expected part of aging to become depressed, to become more dependent, to have more aches and pains, to have less ability to have sex, and to have less energy. After adjusting for sociodemographic and health characteristics using multivariate regression, older age was independently associated with lower expectations regarding aging ($P < .001$), as was having lower physical and mental health-related quality of life. Having lower expectations regarding aging was independently associated with placing less importance on seeking health care ($P = .049$).

CONCLUSIONS: Most older adults in this sample did not expect to achieve the model of successful aging in which high cognitive and physical functioning is maintained. Older age was independently associated with lower expectations regarding aging. Furthermore, having low expectations regarding aging was independently associated with not believing it important to seek health care. **J Am Geriatr Soc 50:1837–1843, 2002.**

Key words: attitude toward health; expectations; healthcare seeking; aged; successful aging

In a landmark paper in 1987, Drs. Rowe and Kahn pointed out that many of the age-related changes historically regarded as normal aging are preventable; they proposed the model of "successful aging" as an alternative to "usual" aging.[1] Successful aging includes three components: low probability of disease and disease-related disability, high cognitive and physical functional capacity, and active engagement with life.[2] In recent years, a greater percentage of older adults appear to be living up to this model and succeeding at living independently and without disabilities.[3,4]

Nevertheless, despite this progress, chronic disease and disability continue to serve as significant challenges for most older adults, with approximately 80% of people aged 65 and older having at least one chronic health condition[5] and over 20% living with disability.[4] It is not currently possible for all older adults to achieve and maintain the Rowe and Kahn model of successful aging, and most do not.[6] The extent to which clinicians should encourage their patients to strive for high levels of physical and cognitive functioning therefore remains an area of active debate.[7,8]

Despite advances in health care widely touted in the medical and lay literature, as many as 60% of older adults

still attribute health conditions and disability to normal aging itself.[9–12] Older adults may attribute worsened health status to aging as a useful coping mechanism in the face of unmodifiable illness, but older adults with low expectations regarding aging may forego health care for modifiable conditions such as depression and urinary incontinence. Understanding older adults' expectations regarding aging and how these expectations influence healthcare-seeking behavior could help physicians identify situations in which older adults needlessly miss the opportunity to experience this model of successful aging.

This study had three primary objectives. First, to estimate the extent to which older adults expect to achieve this model of successful aging, we measured expectations regarding aging in a sample of community-residing older adults. Second, we identified sociodemographic, health, and psychosocial characteristics associated with having low expectations regarding aging; specifically, we hypothesized that having low expectations regarding aging would be associated with older age and poor health status. Third, we examined the relationship between expectations regarding aging and healthcare-seeking beliefs; specifically, we tested the hypothesis that older adults with lower expectations regarding aging would be less likely to believe it important to seek health care for age-associated conditions.

METHODS

Subjects

Data were collected from community-residing older adults cared for by primary care physicians affiliated with the University of California, Los Angeles (UCLA). Letters were sent to all 78 full-time clinicians in the Divisions of General Internal Medicine and Geriatrics at UCLA, asking them to participate in a study to measure expectations regarding aging. Of the 43 physicians who volunteered, we selected 20 from seven different clinical settings in the greater Los Angeles region to maximize the geographic diversity of the practices. We excluded clinicians specializing in women's health, because their practices include few older adults. For each selected physician, we identified a random sample of 40 patients, and asked the physician to exclude patients who were not their patient, deceased, living in an institution, non-English speaking, or too medically ill or cognitively impaired to be able to complete a 30-minute self-administered survey. Exclusion rates varied from 3% to 60% among physicians; the most common exclusion cited was dementia. Remaining eligible patient participants (n = 588 out of 800) were mailed a signed letter from their physician inviting them to participate in the study by completing the survey enclosed with the letter. The UCLA Institutional Review Board approved the project, and all participants provided signed informed consent along with the completed survey.

Data Collection

To measure expectations regarding aging, we developed the Expectations Regarding Aging (ERA-38) Survey. The ERA-38 is a 38-item self-administered survey that measures 10 domains of expectations regarding aging, such as general health, mental health, and cognitive function. It takes approximately 15 minutes to complete. The development, reliability, and validity of this instrument are reported in detail elsewhere.[13] We conducted eight one-on-one interviews and five focus groups of older adults to identify the appropriate content for this survey. Items were created using the exact language used by older adults whenever possible. Draft items using different response sets were pretested using cognitive interviewing techniques with older adults waiting to see their physicians. Based on the pretests, the final format of the instrument was revised to include a series of statements describing expectations regarding aging followed by a 4-point definitely true/somewhat true/somewhat false/definitely false response set (see Appendix 1 for examples). After pilot testing (n = 58) and revision, a 56-item instrument was mailed to the sample of potential participants as described above.

We performed multitrait scaling analysis[14] to select final items. The resulting ERA Survey (ERA-38) consisted of 38 items with 10 scales: general health (5 items), cognitive function (4 items), mental health (12 items), functional independence (5 items), sexual function (2 items), pain (2 items), sleep (2 items), fatigue (4 items), urinary incontinence (1 item), and appearance (1 item). Possible scores ranged from 0 to 100, with higher scores more consistent with expecting the Rowe and Kahn model of successful aging and lower scores more consistent with expecting decline in health and functional status.

To measure beliefs regarding care seeking for age-associated conditions, we developed a series of 13 items preceded by the probe, "If an older friend came to you asking for your advice about the following issue, what would you tell him or her?" The 13-items describe common age-associated phenomena, such as walking more slowly, having aches in one's joints, and having trouble sleeping. Participants were asked to state whether they would tell their friend that it is very, somewhat, or not at all important to discuss (the described issue) with the doctor. As with the ERA-38 items, these 13 items were pretested among older adults waiting to see their physicians and revised accordingly.

To measure potential demographic, medical, and psychosocial characteristics associated with healthcare-seeking behavior, we administered additional instruments to study participants. These included (1) seven sociodemographic items; (2) the Medical Outcomes Study Short Form-12 (SF-12), a general health status measure containing physical component summary (PCS-12) and mental component summary (MCS-12) scales[15] (Both the PCS-12 and the MCS-12 have a mean of 50 and a standard deviation (SD) of 10 in the general U.S. population, with higher scores indicative of better physical and mental health.); (3) 13 questions regarding ability to independently perform basic and instrumental activities of daily living (ADLs);[16,17] (4) the Charlson Comorbidity Scale modified for self-administration;[18] (5) the 5-item Geriatric Depression Scale (GDS);[19] and (6) two questions measuring intrinsic religiosity modified from a previously validated instrument.[20]

Analysis

ERA-38 scores were calculated and examined using simple descriptive statistics. Normality was assessed using the Shapiro-Wilk test.[21] As described elsewhere,[13] internal consistency

reliability for each of the scales exceeded 0.73, except for the pain scale.

To examine characteristics associated with low expectations regarding aging, we performed bivariate analyses comparing sociodemographic, health-status, and psychosocial characteristics of those scoring in the lowest quartile on the ERA-38 with the remainder of the sample, using two-sided t tests for continuous and chi-square tests for categorical variables. Characteristics we examined were those that we hypothesized would be associated with low expectations regarding aging: older age, female sex, ethnicity (non-white, with white as reference group), income (percentage with an annual income <$20,000), living alone, being dependent in one or more ADLs, lower PCS-12 score, lower MCS-12 score, reporting four or more comorbidities, scoring ≥2 on the 5-item GDS, and lower religiosity score.

To identify characteristics independently associated with expectations regarding aging, we constructed a linear regression model with the ERA-38 score as the dependent variable and used characteristics described above as independent variables. To facilitate interpretation of findings, ERA-38 scores were transformed to z scores so that a single unit change represented 1 SD change in ERA-38 score. We adjusted for clustering among patients of the same physician using the Huber-White method.[22] For all analyses, findings were considered to be statistically significant using the conventional criteria of $P \leq .05$.

Internal consistency reliability of the 13 healthcare-seeking items was calculated using Cronbach coefficient alpha.[23] Frequency of response for each of the items was calculated, and a total score was calculated by assigning 3 points for very important, 2 for somewhat important, and 1 for not at all important. Ten participants skipped the entire page, and these participants were dropped from the analysis using this measure. Of the remaining 419 participants, 29 skipped one or more of the 13 items: 21 skipped one item, two skipped two items, five skipped three items, and one skipped five items. The scale score represented the average of nonmissing items. For example, if a participant missed two items, that individual's scale score would be calculated from the mean score on the 11 nonmissing items. To assess whether imputing values in this way influenced our findings, we ran our analysis with and without the 29 participants who were missing one or more of the 13 items. Because the results were virtually unchanged, we report results from the model including the 29 participants. To examine the relationship between expectations regarding aging and beliefs regarding healthcare seeking, we constructed a multivariate linear regression model with the total score on the healthcare-seeking items as the dependent variable and ERA-38 score as the primary independent variable, adjusting for potential confounders, including age, sex, number of ADL impairments, PCS-12 score, MCS-12 score, reporting three or more comorbid illnesses, religiosity score, and scoring 2 or greater on the 5-item GDS. As above, we adjusted for clustering at the level of the physician. Analyses were conducted using SAS 8.0 (SAS Institute Inc., Cary, NC) and Stata 6.0 (StataCorp, College Station, TX).

RESULTS

Four hundred twenty-nine (73%) eligible participants returned their surveys. Table 1 provides characteristics for

Table 1. Baseline Characteristics of Study Participants

Characteristic	Participants n = 429
Age, mean ± SD (range)	76.0 ± 6.9 (65–100)
Female, n (%)	230 (54)
Ethnicity, n (%)*	
Caucasian	327 (76)
African American	25 (6)
Latino	36 (8)
Asian American	20 (5)
Total annual income, n (%)†	
<$5,000	15 (4)
$5,000–19,999	75 (19)
$20,000–40,000	83 (21)
>$40,000	221 (56)
Living alone, n (%)	139 (32)
PCS-12 score, mean ± SD‡	42.8 ± 11.6
MCS-12 score, mean ± SD §	52.5 ± 9.9
Unable to perform ≥1 ADLs, n (%)‖	92 (21)
Unable to perform ≥2 ADLs, n (%)‖	62 (14)
Number of comorbidities, mean ± SD	2.1 ± 1.6
Score ≥2 on 5-item GDS, n (%)¶	94 (22)
Strongly or somewhat strongly religious, n (%)	227 (53)

*Missing for 17 participants (4% of sample).
†Missing for 35 participants (8.2% of sample).
‡Physical Component Summary (PCS) scale from Medical Outcomes Study Short Form-12.[15]
§Mental Component Summary (MCS) scale from Medical Outcomes Study Short Form-12.[15]
‖Basic and instrumental activities of daily living (ADLs).[16, 17]
¶Geriatric Depression Scale (GDS)[19] score ≥2 indicates high probability of clinical depression.
SD = standard deviation.

the sample. The mean age was 76; 54% of participants were women, and 76% were Caucasian, 8% Latino, 6% African American, and 5% Asian American. More than half of the sample (56%) reported an annual income greater than $40,000. The mean PCS-12 score was 42.8, and the mean MCS-12 score was 52.5. On average, participants reported 2.1 medical conditions. More than 22% of participants scored 2 or greater on the 5-item GDS, a cutpoint highly suggestive of clinical depression.[19]

ERA-38 scale scores were normally distributed; Shapiro-Wilk test was 0.986 ($P = .0004$). For each of the 34 items describing age-associated decline, at least 25% of respondents stated that the item was definitely true or somewhat true, indicating that the described age-associated decline was an expected part of aging; for each of the four items describing maintaining health-related quality of life with aging, at least 21% of participants stated the item was definitely false or somewhat false, indicating that the described aspect of successful aging was not expected (complete data not shown, available by request). Table 2 shows a sample item for each scale, with the corresponding frequencies of responses stating "definitely true" or "somewhat true." As illustrated in the last column of Table 2, at least 50% of participants felt that it was an expected part of aging to become depressed, to become more dependent on others, to have decreased ability to have sex,

Table 2. Scale Sample Items with Frequencies of Respondents Stating "True"

Scale	Sample Item	Percentage Stating Definitely True	Percentage Stating Somewhat True	Percentage Stating Definitely or Somewhat True
General health	When people get older they need to lower their expectations of how healthy they can be.	30	40	70
Cognitive function	It is impossible to escape the mental slowness that happens with aging.	17	43	60
Mental health	I expect that when I get older I will get depressed.	9	41	50
Functional independence	I expect that as I get older I will become more dependent on others.	19	58	78
Sexual function	I expect that as I get older my body's ability to have sex will decrease.	40	45	85
Pain	Having more aches and pains is an accepted part of aging.	40	47	87
Urinary incontinence	Needing to use adult diapers is just an expected part of getting old.	5	20	25
Sleep function	It's a normal part of aging that older people have trouble sleeping.	15	48	64*
Fatigue	Decreasing energy in older people is just part of nature taking its course.	40	50	89*
Appearance	I expect that as I get older I will become less attractive.	30	49	79

*Because of rounding, not equivalent to sum of previous two columns.

to have more aches and pains, to have trouble sleeping, to have less energy, and to become less attractive.

Of those scoring in the lowest quartile on the ERA-38 (n = 107), 99% reported it to be true that "there isn't any way to escape the physical deterioration of aging." Of those in the lowest quartile, 97% reported it to be true that "forgetfulness is a natural occurrence just from growing old"; 78% reported it to be true that "becoming more lonely is a natural part of the aging process"; 96% reported it to be true that "every year that people age, their energy levels go down a little more". Table 3 shows the results of the bivariate analyses. Older adults scoring in the lowest quartile of ERA-38 scores were older (78.5 vs 75.4, P < .001), had lower PCS-12 scores (39.0 vs 44.1, P = .0002) and lower MCS-12 scores (47.5 vs 54.2, P < .001), and scored lower on the two-item measure of intrinsic religiosity (3.9 vs 4.4, P = .024). A greater proportion of those with low expectations regarding aging were dependent in one or more ADLs (36.5 vs 16.5%, P < .0001), and scored 2 or higher on the 5-item GDS (39.3 vs 16.2%, P < .0001). Non-white ethnicity, low income, living alone, and comorbidity were not significantly associated with low expectations regarding aging.

Table 4 shows the results of the multivariate model identifying characteristics independently associated with expectations regarding aging. After adjusting for all covariates, age remained strongly associated with ERA-38 scores; for each decade increase in age among the participants, ERA-38 scores were 0.27 of a SD lower. Higher PCS-12 and MCS-12 scores were independently associated with higher expectations regarding aging (β = 0.15 and 0.26, respectively, P < .001 for both). Scoring 2 or higher on the 5-item GDS was independently associated with substantially lower expectations regarding aging (β = –0.30, P = .037). After controlling for health status, religiosity and ADL impairment were not significantly associated with ERA-38 scores (P = .061 and .462, respectively).

Internal consistency (Cronbach alpha) for the 13 health-care-seeking beliefs items was 0.84. Frequencies of response for each of the items are shown in Table 5. Six of the 13 items were reported to be "not at all important to discuss with the doctor" by more than 20% of the sample: when older people "walk more slowly," "can't remember names," "feel lonely," "have financial worries," "have decreased sexual desire," and "have decreased physical ability to have sexual relations." More than half of the sample reported it to be very important to discuss with the doctor four of the 13 items: when older people "fall down," "feel depressed," "leak their urine," or "have arthritis."

Table 6 shows the results of the multivariate model identifying characteristics independently associated with healthcare-seeking beliefs. After adjusting for sociodemographic, health-status, and psychological covariates, for every SD lower ERA-38 score, the healthcare-seeking beliefs score also was lower, by ± 0.28 SDs (P = .049). An increase by one decade of age was associated with a ± 0.18 SDs decrease in healthcare-seeking beliefs (P = .036).

DISCUSSION

Among community-based sample of older adults, many do not expect to achieve the predominant medical model of successful aging. It was found that at least 50% of older

Table 3. Bivariate Associations with Low Expectations Regarding Aging

Characteristic	Older Adults with Low Expectations Regarding Aging* (n = 107)	Older Adults Without Low Expectations Regarding Aging (n = 322)	P-value†
Continuous variables, mean ± SD			
Age	78.5 ± 7.8	75.4 ± 6.4	<.0001
PCS-12 score‡	39.0 ± 11.9	44.1 ± 11.3	.0002
MCS-12 score§	47.5 ± 12.4	54.2 ± 8.4	<.0001
Religiosity score‖	3.9 ± 1.9	4.4 ± 2.0	.0242
Categorical variables, %			
Female	45.8	56.2	.0612
Nonwhite ethnicity	26.0	18.8	.1203
Annual income <$20,000	20.2	23.7	.4695
Living alone	36.5	32.9	.4978
Dependent in ≥1 ADLs¶	36.5	16.5	<.0001
Reporting ≥4 comorbidities	16.8	15.5	.7508
Scoring ≥2 on 5-item GDS#	39.3	16.2	<.0001

*Older adults scoring in the lowest quartile on the Expectations Regarding Aging (ERA-38) survey.
†Comparisons made using t tests for continuous variables and chi-square tests for categorical variables.
‡Physical Component Summary (PCS) scale from Medical Outcomes Study Short Form-12.[15]
§Mental Component Summary (MCS) scale from Medical Outcomes Study Short Form-12.[15]
‖Scores range from 1 to 7, with higher scores indicating greater intrinsic religiosity.
¶Basic and instrumental activities of daily living (ADLs).[16,17]
#Geriatric Depression Scale (GDS)[19] score ≥2 indicates high probability of clinical depression.
SD = standard deviation.

adults in this sample regarded worsening physical health and cognitive function as expected parts of aging; these beliefs were more common in older patients and those with poor health-related quality of life. Furthermore, it was found that older adults with low expectations regarding aging were less likely to believe it important to seek health care for age-associated conditions. These findings carry important implications for clinicians and health policy makers interested in implementing interventions to improve the aspects of life most valued by older patients.

The finding that many older adults consider decline to be an expected part of aging is consistent with previous studies showing that older adults consider "old age" to be a causal factor in health conditions[9,10,12] and disability.[11,24,25]

Table 4. Independent Associations with Expectations Regarding Aging (ERA-38) Survey Scores (n = 429)

Characteristic:	Coefficient	P-value
Age, per decade increase	−.27	<.001
PCS-12 score,* per SD increase	.15	<.001
MCS-12 score,† per SD increase	.26	<.001
≥2 on 5-item GDS ‡	−.30	.037
Religiosity, per SD	.10	.061

Note: ERA-38 scores standardized so that unit of analysis is 1 standard deviation (SD) change, with higher scores indicating expectations more consistent with successful aging. Model adjusted for gender, activities of daily living (ADLs), comorbidity, and clustering at level of physician.
*Physical Component Summary (PCS) scale from Medical Outcomes Study Short Form-12.[15]
†Mental Component Summary (MCS) scale from Medical Outcomes Study Short Form-12.[15]
‡Geriatric Depression Scale (GDS)[19] score ≥2 indicates high probability of clinical depression.

This study extends these findings by demonstrating a strong relationship between older age and lower expectations that persists despite controlling for a number of possible confounders including health-related quality of life and medical comorbidity. This compelling finding may reflect a cohort effect; the oldest people in this sample were adults during the depression of the 1930s and World War II and may view aging differently from the 65- and 70-year-olds in our sample. In addition, the oldest adults may also be less informed about new treatments available for age-associated conditions. Alternatively, older adults may lower their expectations for health as they age. Lowering expectations while aging, or "redefining health"[9] may be an important mechanism by which many older adults are able to maintain their life satisfaction despite declining physical health. Whether older adults do lower their expectations as they age, or whether this finding is merely a cohort effect, needs to be examined in future longitudinal studies.

Perhaps the most notable finding of this study is that having lower expectations regarding aging is independently associated with not believing it very important to seek health care for age-associated conditions such as depression, memory impairment, and urinary incontinence. These and many other modifiable age-associated conditions remain underdiagnosed and undertreated.[26,27] Identifying the causes of underuse of health care by older adults is of critical importance so that interventions can be designed to ensure that all older adults are given the opportunity to receive care likely to improve their health. Previous work by Goodwin et al.[10] showed that older adults who consider health problems to be normal parts of aging had lower rates of use of preventive medical services; this current study suggests that older adults with low expectations regarding aging may also miss out on health care for modifiable geriatric

Table 5. Frequencies of Response to Healthcare-Seeking Items

	This Is Something		
Healthcare-Seeking Item	Very Important to Discuss with the Doctor	Somewhat Important to Discuss with the Doctor	Not at All Important to Discuss with the Doctor
When older people walk more slowly,	14	55	31
When older people have aches in their joints,	41	53	6
When older people fall down,	80	19	1
When older people feel depressed,	57	40	3
When older people can't remember names,	29	49	22
When older people leak their urine,	72	27	1
When older people feel lonely,	19	56	25
When older people have arthritis,	71	28	1
When older people have financial worries,	9	33	58
When older people have decreased sexual desire,	15	55	31
When older people have trouble sleeping,	39	58	2
When older people get up several times at night to urinate,	49	42	10
When older people have decreased physical ability to have sexual relations,	23	53	24

conditions such as depression and urinary incontinence. This also suggests that many older adults remain unaware of the potential value of seeking health care for common problems of aging. It may be possible to increase the numbers of older adults who achieve the Rowe and Kahn model of successful aging by educating older adults and their physicians—possibly through public health initiatives—that many age-associated conditions are preventable or modifiable with good medical care.

There are a number of limitations to this study. First, findings should not be generalized to all older adults. Participants were all English speaking and reported incomes higher on average than those found in population-based studies. Although low income (<$20,000/year) was not associated with having low expectations regarding aging in this study, whether finances actually influence expectations regarding aging should be examined in a more socioeconomically diverse study population. Recruitment of participants through their physicians biased the sample toward older adults who seek regular medical care from aca-

Table 6. Independent Associations of Healthcare-Seeking Beliefs (n = 419)

Characteristic	Coefficient	P-value
ERA-38 score, per SD	.28	.049
Age, per decade	−.18	.036

Note: Standardized so that unit of analysis is 1 standard deviation (SD) change in healthcare-seeking beliefs score, with higher scores indicating believing it more important to seek health care. Model adjusted for gender, activities of daily living, Physical and Mental Component Summary scale scores from Medical Outcomes Study Short Form-12,[15] comorbidity, religiosity, positive score for depression on 5-item Geriatric Depression Scale,[19] and clustering at level of physician. ERA-38 = Expectations Regarding Aging Survey.

demically affiliated physicians; participants in this study were likely to place greater importance on seeking health care than a population-based sample. In addition, all participants were residing in the greater Los Angeles area; expectations regarding aging are likely to vary by region in the country.

The primary dependent variable, beliefs regarding healthcare seeking, was not designed to capture actual realized healthcare use. Furthermore, because even state-of-the-art medical care cannot fix all age-associated conditions, it would be a mistake to conclude that older adults' placing less importance on healthcare seeking is necessarily always bad. The present finding that low expectations regarding aging is independently associated with not believing healthcare seeking for age-associated conditions important raises concern; whether having low expectations regarding aging actually causes older adults to seek less health care for modifiable conditions cannot be determined from this investigation.

In conclusion, most older adults in this community-based sample do not expect to achieve the predominant model of successful aging in which high physical and cognitive functional capacity is maintained. Old age itself is independently associated with lower expectations regarding aging. Furthermore, having low expectations regarding aging is associated with not believing it very important to seek health care for age-associated conditions. If future studies confirm that having low expectations regarding aging contributes to older adults missing out on care for modifiable conditions, this could signal an important opportunity to intervene—by increasing expectations regarding aging—to improve the health of older adults.

REFERENCES

1. Rowe JW, Kahn RL. Human aging: Usual and successful. Science 1987;237:143–239.
2. Rowe JW, Kahn RL. Successful aging. Gerontologist 1997;37:433–440.
3. Vita AJ, Terry RB, Huber HB et al. Aging, health risks, and cumulative disability. N Engl J Med 1998;338:1035–1041.
4. Manton KG, Corder L, Stallard E. Chronic disability trends in elderly United States populations: 1982–94. Proc Nat Acad Sci U S A 1997;94:2593–2598.
5. Hoffman C, Rice D, Sung H. Persons with chronic conditions, their prevalence and costs. JAMA 1996;276:1473–1479.
6. Von Faber M, Bootsma-van der Wiel A, van Exel E et al. Successful aging in the oldest old—who can be characterized as successfully aged? Arch Intern Med 2001;161:2694–2700.
7. Campion EW. Aging better. N Engl J Med 1998;338:1064–1066.
8. Goodwin JS. Geriatrics and the limits of modern medicine. N Engl J Med 1999;340:1283–1285.
9. Keller ML, Leventhal H, Prohaska TR et al. Beliefs about aging and illness in a community sample. Res Nurs Health 1989;12:247–255.
10. Goodwin JA, Black SA, Satish S. Aging versus disease. The opinions of older black, Hispanic, and non-Hispanic white Americans about the causes and treatment of common medical conditions. J Am Geriatr Soc 1999;47:973–979.
11. Sarkisian CA, Liu HH, Ensrud KE et al. Correlates of attribution of new disability to 'old age.' J Am Geriatr Soc 2001;49:134–141.
12. Gump BB, Matthews KA, Scheier MF et al. Illness representations according to age and effects on health behaviors following coronary artery bypass graft surgery. J Am Geriatr Soc 2001;49:284–289.
13. Sarkisian CA, Hays RH, Berry S et al. Development, reliability and validity of the Expectations Regarding Aging (ERA-38) Survey. Gerontologist 2002;42:534–542.
14. Hays RD, Wang E. Multitrait Scaling Program: MULTI. Cary, NC: Proceedings of the Seventeenth Annual SAS Users Group International Conference, 1992.
15. Ware J Jr, Kosinski M, Keller SD. A 12-Item Short-Form Health Survey. Construction of scales and preliminary tests of reliability and validity. Med Care 1996;34:220–233.
16. Katz S, Ford AB, Moskowitz RW et al. Studies of illness in the aged: The index of ADL; a standardized measure of biological and psychosocial function. JAMA 1963;185:914–919.
17. Lawton MP, Brody EM. Assessment of older people: Self-maintaining and instrumental activities of daily living. Gerontologist 1969;9:179–186.
18. Katz JN, Chang LC, Sangha O et al. Can comorbidity be measured by questionnaire rather than medical record review? Med Care 1996;34:73–84.
19. Hoyl MT, Alessi CA, Harker JO et al. Development and testing of a five-item version of the Geriatric Depression Scale. J Am Geriatr Society 1999;47:873–878.
20. Holland JC, Kash KM, Passik S et al. A brief spiritual beliefs inventory for use in quality of life research in life-threatening illness. Psychooncology 1998;7:460–469.
21. Shapiro SS, Wilk MB. An analysis of variance test for normality (complete samples). Biometrika 1965;52:591–611.
22. Huber PJ. The behavior of maximum likelihood estimates under non-standard conditions. Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics. Probability 1967;1:221.
23. Cronbach LJ. Coefficient alpha and the internal structure of tests. Psychometrika 1951;16:297–334.
24. Williamson JD, Fried LP. Characterization of older adults who attribute functional decrements to 'old age.' J Am Geriatr Soc 1996;44:1429–1434.
25. Ettinger WH, Fried LP, Harris T et al. Self-reported causes of disability in older people: The Cardiovascular Health Study. J Am Geriatr Soc 1994;42:1035–1044.
26. Bowers J, Jorm AR, Henderson AS et al. General practitioners' detection of depression and dementia in elderly patients. Med J Aust 1990;153:192–196.
27. Burgio KL, Ives DG, Locher JL et al. Treatment seeking for urinary incontinence in adults. J Am Geriatr Soc 1994;42:208–212.

Appendix 1. Sample Items from Expectations Regarding Aging Survey

	Definitely True	Somewhat True	Somewhat False	Definitely False
1. I expect that I will always be able to take care of myself.	□1	□2	□3	□4
2. Forgetfulness is a natural occurrence just from growing old.	□1	□2	□3	□4
3. It's normal to be depressed when you are old.	□1	□2	□3	□4
4. Decreased energy in older people is just part of nature taking its course.	□1	□2	□3	□4

Note: Full instrument available by request to corresponding author.