



PERGAMON

Social Science & Medicine 53 (2001) 927–941

SOCIAL
SCIENCE
&
MEDICINE

www.elsevier.com/locate/socscimed

In their own words: a model of healthy aging

Lucinda L. Bryant^{a,*}, Kitty K. Corbett^b, Jean S. Kutner^c

^a *Department of Preventive Medicine and Biometrics, University of Colorado School of Medicine, 4200 East Ninth Avenue, Box C245, Denver, CO 80262, USA*

^b *University of Colorado at Denver, Denver, CO, USA*

^c *University of Colorado School of Medicine, Denver, CO, USA*

Abstract

Many previous studies have assessed the aging process by measuring clinical and functional variables. To supplement that quantitative understanding, we asked older people what constitutes their health and contributes to it. Using grounded theory-type methods, we analyzed semi-structured interviews with 22 study subjects, who were randomly selected from among those whose reported perceived health differed from that predicted by a regression model constructed from data from a randomized trial of a primary care intervention. We focused on disparate cases to identify factors that best discriminate between more and less healthy aging. Interview questions targeted perceptions of health; well-being; valued abilities, activities, and relationships; social support; control; sense of coherence; and personal outlook. A model of healthy aging emerged. To these older people *health* meant *going and doing something meaningful*, which required four components: something worthwhile to do, balance between abilities and challenges, appropriate external resources, and personal attitudinal characteristics (e.g., positive attitude vs. “poor me”). By reframing healthy aging in older people’s own terms, this model encourages interdisciplinary support of their desired goals and outcomes rather than only medical approaches to deficits and challenges. © 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Aging; Healthy aging; Gerontology; Self-defined health

Exact sciences give correct answers to certain aspects of life problems, but very incomplete answers. It is important of course to count and measure what is countable and measurable, but the most precious values in human life are aspirations which laboratory experiments cannot yet reproduce. (Dubos, 1959, p. 279)

Background

Older people represent an increasing proportion of the population worldwide. Since 1900 the percentage of those aged 65 and older in the United States has more than tripled, to almost 13 percent of the population (US Administration on Aging, 1998), and the US Bureau of

the Census (1998) predicted an increase to 20% by 2050. Worldwide those aged 60 and over now number 580 million, 355 million of whom live in developing countries; the World Health Organization predicts these numbers will increase to 1 billion and 700 million, respectively, by 2020 (World Health Organization, 1999). Healthiness, or its absence, in this rapidly increasing population affects the individuals themselves and also has serious implications for demands on health care and other social resources. In the United States, these older people accounted for 36% of personal health care expenditures in 1987, for a total of \$162 billion and an average of \$5360 per person, compared to \$1290 for younger people (US Health Care Financing Administration, 1998). These numbers underscore the need to understand the factors that contribute to healthier aging, in order to support better lives for older individuals with the most appropriate and prudent allocation of resources.

*Corresponding author. Tel.: +1-303-315-0634; fax: +1-303-315-5987.

E-mail address: lucinda.bryant@uchsc.edu (L.L. Bryant).

Previous population-based studies of health and aging in many countries have generally quantitatively assessed the relationship of risk factors to *negative* outcomes associated with aging — mortality, institutionalization, and functional decline. Commonly cited risk factors include age, gender, chronic conditions and comorbidities, functional and cognitive status, and absent or inappropriate social support (Branch & Jette, 1982; Shapiro & Tate, 1985; Kaplan et al., 1994; Mor, Wilcox, Rakowski, & Hiris, 1994; Sugisawa, Liang, & Liu, 1994; Idler & Benyamini, 1997). A smaller but increasing number of studies have explored, also quantitatively, the same variables as contributors to *successful, healthy, or effective* aging (Benfante, Reed, & Brody, 1985; Berkman et al., 1993; Bryant, Beck, & Fairclough, 2000; Roos & Havens, 1991). These studies raise concerns of definition and method. The MacArthur Foundation Research Network described their *successful aging* outcome in terms of function, as the absence of any deficits in activities of daily living (ADL) and the presence of no more than one physical performance disability (Berkman et al.). Benfante et al. considered only chronic disease. These definitions seem too limited. Roos and Havens selected a somewhat broader multifactorial outcome including death and functional disability. Bryant et al. chose a more global measure, self-reported or perceived health, and considered change over a one-year period. None of these studies highlighted the dynamic nature of aging as a process but instead regarded aging as a static entity observed at a single point in time. Although often associated with decreases in physiological, cognitive, and functional abilities, healthy aging does *not* mean the absence of limitations but a level of health and adaptation to the aging process acceptable to the individual.

The terms “health” and “well-being” have not been rigorously differentiated in the literature. If not entirely interchangeable, they certainly overlap in usage. Especially concerning older people, the issue is not just semantic. Since they are prone to multiple health problems that include psychological and social as well as physical dimensions, their perceptions of healthiness or well-being depend on more than just clinical and functional status (for example, Mechanic, 1995; Rickelman, Gallman, & Parra, 1994; Schoenfeld, Malmrose, Blazer, Gold, & Seeman, 1994). One study asked people aged 60 and over what they thought most people around their age mean when they say they are in good health. From a selection of responses, over 40% chose the ability to perform usual activities, about one-third selected a definition of good health as a general feeling of well-being, and fewer than 20% chose the absence of symptoms (Strain, 1993).

The construct of “health,” or “healthy” or “successful” aging, that we intend encompasses more

than the positivist contrast to disease. We mean, rather, the interpretive-constructivist concept of wellness, that is, the absence of illness. This construct has substantial subjective components — individual, social, and cultural. Dubos (1959) explained that health cannot be defined just in terms of biomedical attributes but must be measured by “the ability of the individual to function in a manner acceptable to himself and to the group of which he is a part” (p. 261).

Concerning methods, most reported research has counted and measured specific sets of variables previously shown to be associated primarily with *poor* outcomes. The literature suggests additional factors that may contribute positively to healthy aging. Farquhar (1995) listed dimensions of quality of life most frequently mentioned by older people: family, social contacts, (physical) health, mobility/ability, material circumstances, activities, happiness, youthfulness, and home environment. Wan (1986) proposed seven determinants of health particularly relevant to older people: physiological condition, absence of degenerative illness, mental status, age, sex, absence of functional dependencies (e.g., walking, eating, and toileting), and strength of social support network.

Cultural expectations, the environment, and motivation and education contribute to healthy aging (Boult, Kane, Louis, Boult, & McCaffrey, 1994), as does freedom from social and environmental hazards and challenges (e.g., poorer housing, insufficient heating, diminished access to geriatric services; Evans, 1984). The inclusion of environment as a relevant determinant of health suggests its importance but does not describe the breadth or level of its impact (Wan, 1986). Threats to well-being, according to Pearlin (1989), “largely arise from and are influenced by various structural arrangements in which individuals are imbedded” (p. 241). Pearlin suggested that individual experiences derive from interrelated levels of social structure — social stratification, social institutions, and interpersonal relationships — and he specified age as one of the determinants of social strata. Parsons (1951) pointed out that society’s expectations and norms concerning individuals’ roles and status have substantial effects on health. The role of significant others (Kasl’s, 1983, umbrella term for social networks, social support, and social isolation), belief in one’s ability to perform adequately, and congruence between beliefs and societal expectations are then important contributors to health, along with clinical interventions to support and maintain physical and functional capabilities. Rosow (1974) suggested that because society, in the United States at least, has not established social norms or expectations for its aging members, they do not have clearly defined roles, rites of passage, positive goals, or markers of successful performance.

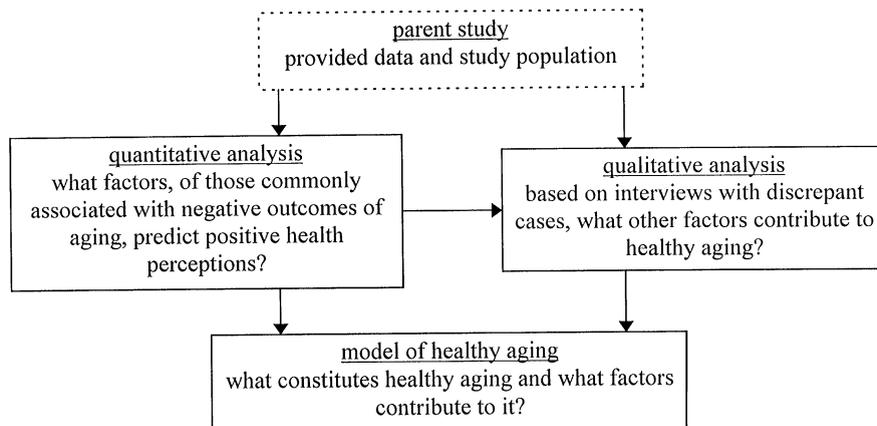


Fig. 1. Structure of study.

Methods

The research study of which this report is a part comprised both quantitative and qualitative data and methods, with the goal of describing a model of healthy aging for an older population. Fig. 1 illustrates the overall study design. Results of the quantitative analysis have been previously reported (Bryant et al., 2000). We here report results of the qualitative analysis and present the subsequent emergent model.

We have expanded the investigation into healthy aging by putting greater emphasis on factors that contribute to positive rather than negative outcomes and by asking older people what they themselves believe describes and contributes to health. Together with respondents, we explored differences among older people, in apparently similar clinical-functional condition, who rated their health differently. We chose to talk with those whose reported health differed from that which would be expected, based on commonly assessed measures, in order to learn about additional factors that may promote healthy aging. Antonovsky (1987) called this focus on health *salutogenesis* and proposed that the salutogenecist “without disdaining the importance of what has been learned [by testing hypotheses], look at the deviant case” (p. 11) to ascertain what creates health as opposed to what diminishes illness. Antonovsky’s perspective informed the study reported here, whose aim was the construction of an empirically grounded theoretical model of healthy aging.

Using grounded theory-type analysis, we examined the results of semi-structured interviews concerning factors that contribute to healthy aging, with 22 deviant or discrepant cases — that is, individuals whose reported health status differed from that predicted by a regression model. Data for the regression model came from self-report responses to a health status questionnaire that was part of a randomized trial of a Kaiser Permanente

(Kaiser) innovative program to provide primary health care in a group setting to older members. That program targeted the health care needs of older, community-dwelling members with a history of chronic disease and greater-than-average utilization of provider services (defined as 12 or more contacts with a provider within the 18 months prior to the study). The parent study population has been described elsewhere (Bryant et al., 2000); Table 1 summarizes some of its characteristics. The resulting regression model identified the following factors as significant predictors of positive perceived health: fewer chronic conditions (and no worsening of them), mobility and physical performance abilities, absence of depression, absence of ADL dependencies, *not* living with one’s spouse, and more education. The model provided predicted values of perceived health for each of the approximately 700 members of the parent study. Comparisons between predicted and actual reported values of perceived health identified discrepant cases, individuals whose reported health status differed from the model’s predictions.

Sampling

The sampling frame for this study was more structured than that often associated with grounded theory-type research because the regression model offered a method of sampling for what Kuzel (1992) called *maximum variation*, to benefit from points of view as disparate as possible. We selected the sample to include different types of discordance between predicted and reported perceived health:

- extreme under-rating: *poor* or *fair* reported health compared to better predicted values;
- moderate under-rating: *good* reported health compared to better predicted values;

Table 1
Parent study: prevalence of selected baseline characteristics (N = 692)^a

Characteristic	% with condition present	Characteristic	% with condition present
<i>Perceived health</i>		<i>Functional status</i>	
Poor/fair	22.2%	Sum of ADLs ≥ 1	6.9%
Good	41.5	Sum of IADLs ≥ 1	20.4
Very good/excellent	35.3	<i>Physical abilities</i>	
<i>Demographics</i>		Sum of abilities ≥ 1	93.6%
Age > 75	39.1%	Mobility: need aid	22.1
Gender (female)	61.8	<i>Depression</i>	
<i>Chronic conditions</i>		Depression	17.1%
Identified by patient		<i>Social factors</i>	
0	17.8%	Married	62.4%
1	35.0	Employed	22.0
> 1	47.2	Live alone	29.2
Identified by physician		Live with spouse	61.8
0	28.3%	Own home	97.0
1	43.4		
> 1	28.3		

^aNote: (I)ADL = dependancies in (instrumental) activities of daily living.

Table 2
Selection of interview sample^a

Standardized residual ^b	Reported health status					Total
	Poor	Fair	Good	Very good	Excellent	
-3 to -2	2	8				10
-2 to -1	15	61	17			93
-1 to 0	13	74	155	7		249
0-1	4	21	83	135		243
1-2		1	10	29	38	78
2-3			1	2	15	18
> 3					1	1
Total	34	165	266	173	54	692

^aNote: Numbers refer to number of cases. Boxes identify groups discussed in the text.

^bStandardized residual = standardized value of difference between actual reported rating and value predicted by regression model; negative residual indicates under-rating.

- moderate over-rating: *good* reported health compared to poorer predicted values; and
- extreme over-rating: *very good* or *excellent* reported health compared to poorer predicted values.

Table 2 displays the distribution of ratings; boxes identify the four discrepant groups. Individuals in each category were ordered randomly and contacted in that order. Prospective interviewees first received a letter outlining the project, explaining confidentiality, and requesting permission. Approximately one week later,

one of us (L.L.B.) called to solicit participation and to make arrangements for the interview. Eight of the 33 individuals contacted refused to be interviewed, five because they were not interested, two because of illness, and one because she had moved out of the area. An additional two asked to be called back later but were then unavailable, and the interviewer missed connections with another. Differences existed between those interviewed and those who refused. By chance associated with random ordering of the sample, members of the parent study's experimental group were

Table 3
Differences among discrepant groups^a

Baseline variable	Discrepant groups (mean values)				<i>p</i> ^b
	Extreme under-raters (<i>n</i> = 86)	Moderate under-raters (<i>n</i> = 17)	Moderate over-raters (<i>n</i> = 11)	Extreme over-raters (<i>n</i> = 85)	
ADLs (0 = none, 1 = any)	0.08	0.00	0.36	0.02	0.0001
IADLs (0 = none, 1 = any)	0.24	0.06	0.64	0.16	0.001
Chronic conditions identified by patient (possible maximum 8)	1.74	0.82	2.45	1.42	0.003
Chronic conditions identified by physician (possible maximum 6)	1.24	0.47	1.45	1.06	0.011
Physical performance indicators (possible maximum 4)	3.01	3.47	2.27	3.33	0.004
Mobility (0 = need help, 2 = no limits)	1.74	2.00	1.09	1.79	0.0001
Perceived health status (1 = poor, 5 = excellent)	2.61	3.18	2.73	3.98	0.0001

^aNote: (I)ADLs = dependencies in (instrumental) activities of daily living.

^b*P* based on Kruskal–Wallis test.

over-represented among those contacted. In addition, a greater proportion of the experimental group members, when contacted, agreed to be interviewed. Interviewees tended to be slightly younger than those who refused, report fewer chronic conditions, have greater mobility and physical ability, report less depression, and report better health, but no differences were significant.

Sample sizes for qualitative research are best determined through theoretical sampling during the research process (Strauss & Corbin, 1990). The interview process should continue until no new information or insights seem to be forthcoming and the emerging theory has been well-tested against counterexamples. Kuzel (1992) advised that “although the rules are not hard and fast, experience has shown that 12–20 (data sources) commonly are needed when looking for disconfirming evidence or trying to achieve maximum variation” (p. 41). Twenty-two study subjects, with more from the extreme than the moderate categories, participated in interviews for this study.

Characteristics of the sample

The discordant groups (including those not contacted for interviews) differed, as Table 3 shows. In every physical and functional category except baseline perceived health (ADLs, IADLs, number of chronic conditions, physical performance, mobility), a greater proportion of the moderate under-raters reported better baseline status than any other group, even the extreme over-raters. The moderate over-raters, on the other hand, reported worse status than the others, in all categories other than baseline perceived health.

Interviews

Both semi-structured questions addressing factors suggested by the literature (perceptions of health; well-being; valued abilities, activities, and relationships; social support; control; sense of coherence; and personal outlook) and open-ended questions soliciting participants' perceptions shaped the interviews. Pilot testing identified improvements, which were incorporated into final questions. These questions provided discussion topics for the interviews, which were conversational in nature. Interviews generally proceeded in the proposed order, but when people voluntarily raised an issue “too early” or offered information about other relevant topics, they were allowed to continue.

Interviews lasted at least 45 min, some nearly twice that long. They took place in participants' homes or in non-clinical meeting rooms in nearby Kaiser health care facilities, depending on the participants' preferences and convenience. Each respondent signed a consent form after an explanation of the process, assurance that the researchers had no involvement in their health care and that participation would not affect their care, and guarantees of confidentiality. An impartial expert observed and critiqued both pilot interviews and the first few “real” interviews to ensure appropriate interviewing techniques. Interviewees appeared to enjoy the opportunity to talk about aging and health-related issues — the interviews seemed to be positive experiences even when people spoke about illness, difficult childhood experiences, and other unpleasant topics. Interviews were audiotaped, and the tapes were transcribed into computer text files for analysis using ATLAS/tiTM software.

Analysis

Analysis of the interviews employed grounded theory-type immersion into the material. The grounded theory method of qualitative analysis has quite specific components, “a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon” (Strauss & Corbin, 1990, p. 24). These procedures informed the development and use of codes and gave structure to processes of comparing and contrasting segments of transcribed text. Expert colleagues reviewed the code dictionary and independently coded randomly selected interviews. Few discrepancies emerged. The experts’ recommendations were incorporated into the ongoing, iterative analysis. The process culminated in the identification of a central phenomenon, the hub of the “grounded” theory, and the relationships of the other factors with it.

Model of healthy aging

A description, and then a model, of healthy aging emerged from the interviews. The analysis of people’s specific responses concerning factors explicitly explored (e.g., perceptions of health; well-being; valued abilities, activities, and relationships; social support; control; sense of coherence; and personal outlook) provided information about those factors’ importance. As hoped, other issues also emerged from grounded theory-type exploration of these interesting individuals’ rich and rewarding stories.

Responses to a request to define *well-being* provided a foundation for understanding and interpreting subsequent observations about their own status. Interviewees identified the following characteristics:

- physical condition (“you’re able-bodied, you don’t have any health problems and do your own work and [handle] problems you have to deal with in your routine”);
- security (both financial security and the sense that “mentally everything [is] going OK”);
- the ability to do things and be with people (“feeling well enough to do everything you wanted to do and being happy to get up in the morning” or at least “being able to do *some* of the things that you used to”); and
- personal internal characteristics (“a good mental perception of yourself and your environment and people and relationships around you”).

In general, under-raters spoke more about physical aspects of well-being while over-raters had a more global view, but respondents seldom limited their descriptions to any single characteristic.

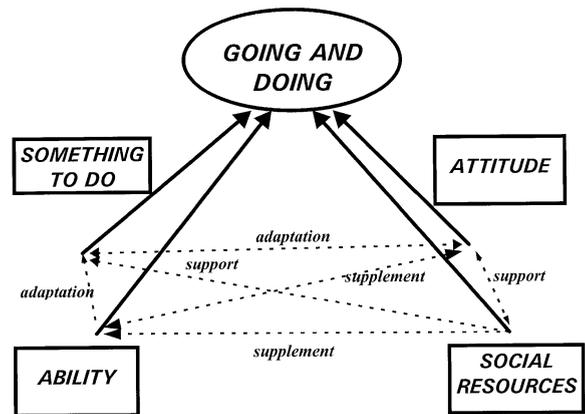


Fig. 2. A model of healthy aging.

These older people described *health* as *going and doing* and identified characteristics important to their perceptions of their own health in particular and to differences in how older people in general rate their health. They spoke both positively of the presence of supportive characteristics and negatively of their absence. Their responses, presented in detail in following sections, suggested a model that incorporates elements that are necessary for healthy aging and detrimental if absent. Fig. 2 illustrates the model. The illustration may mistakenly suggest that its elements can always be clearly distinguished from each other, but its intent is to emphasize the following components:

- having something worthwhile and desirable to do;
- possessing the required abilities to meet perceived challenges;
- obtaining the necessary resources; and
- having the will to go and do.

Going and Doing

Respondents repeatedly spoke of *going and doing* something meaningful. At first that seemed just one of the resources people had (or did not have) that supported perceived health. Increasingly, however, it emerged as the outcome they were talking *about* rather than a factor related *to* it. For this group of older people, healthy aging *meant* going and doing something meaningful — older people who do something meaningful feel healthier than those who do not. In a biomedical framework, this description sounds backward. It says that getting around and doing things *equates with* health, as opposed to the biomedical view that being able to go and do *results from* health described as the absence of disease or functional deficits. For these older people, however, *going* meant more than the mobility and *doing* more than the physical function

identified in the quantitative model (Bryant et al., 2000). They said the following, sometimes after being asked directly to define well-being but also throughout the interviews:

- Well-being means “to get up and do as much as you want to when you want to”.
- When asked to think about what hadn’t been asked, what contributes to healthy aging: “I like this class I’m taking [to maintain nursing credentials] ... it keeps your mind alive, it keeps you interested, it keeps you going now ... I think we have to keep learning”.
- “How I feel about aging ... as long as you can get out and do things and feel good about yourself, that helps this aging”.
- In response to a question about negative influences on well-being: “Well, I guess the days that you can’t do anything. There’s quite a few of those. I always quilted and I can’t do that any more”.
- When asked about ways that getting older affects your health: “Well you can either just sit down and do nothing or you can keep the few things that you like to do and work towards that. When I get up in the morning, I’ve usually got an idea of something I’d like to do”.
- “I tried to retire at 68 but developed aches and depression. You have to have something you’re expected to do”.
- “But we do try to get out a little bit every day, and I think that’s important — get up and get doing, do what you can”.

Going and doing did not have to involve physical activity. One man, quite limited physically, expressed that he enjoyed “getting to the root of things, finding out why it works; it’s just a pleasure”. Another reported, “I have tried, you know, even not being in school, to maintain a certain mental stimulation in my life by reading or participating in things that give me some mental activity”.

Something worthwhile and desirable to do

To contribute positively to health, the things that people do need to matter to them. The respondents confirmed Dubos’ (1959) observation that the goals people set for themselves — and the manner in which they respond and adapt to them — have as much to do with health and happiness as disease and other challenges from the external world:

- “I have three granddaughters that come over every day for lunch. Two of them work in a doctor’s office and one is a senior in school, so they’re here every day, and if I don’t feel like getting up, I know I have to get up because they’re expecting lunch.”

- “If I didn’t have something to wake up for, I think I might be a basket case.”
- “You strive until the goal is made then look for one still unattained.”

Asked to identify valued activities, respondents identified social activities, travel, reading, and housework. Associated with going and doing, individuals mentioned going fishing (as a greatly missed activity), swimming, riding a motorcycle, and observing nature. Additionally, many also mentioned creative activities: dancing, music, creating art, and needlework. The quantity of valued activities that a person named did not necessarily associate with a relatively more positive assessment of health (that is, better reported perceived health than the regression model predicted), but the two people who specifically spoke of dull or boring lives substantially under-rated their health status.

The sense of loss of activities was in some cases substantial. One woman explained her concerns as her husband became more ill:

I have quit all my activities. I used to go to [a group] and I quit that, and I used to go to all the theaters and all the plays, and I’ve quit that. First of all I quit it because I was a little bit afraid of bringing home flu or something and either have my husband or I get sick. I wanted to protect us.

Another spoke of how she used to be very athletic and now feels “kind of cheated that I can’t do the things as comfortably as I used to”.

To some degree, the value interviewees placed on activities related to their social roles: older person, parent, friend, retiree, homemaker, person with disabilities. Parsons (1951) and Rosow (1974), among others, emphasized the importance to health of being able to conform to society’s expectations and norms. A number of the interviewees referred explicitly to *normalcy* or the perceived standard for older people. They said the following (italics added):

- “I would hate to lose my ability to drive and I think that’s one of the things *most of us* really hate to lose.”
- “I think *we all* worry about [Alzheimer’s] because we don’t want to be a burden.”
- “My husband and I make a lot of compromises ... I think *that’s normal or should be*.”
- “I think I’m *moderate or about average*.”
- “[Getting information] on you’re getting older and *you can expect that* you’re going to do these things and here’s what to do; I think that would be important.”

One of the respondents confirmed Mechanic’s (1978) concern about the negative social impact of loss of work involvement. The interviewee said, “I finally gave it up

and decided just to not struggle with the fact that I am retired, and I should accept that and leave it at that and not keep searching for something that's going to substitute for my employment in the past years". Two of the extreme under-raters expressed disappointment that retirement had not lived up to their expectations, one because physical problems cut short the world travel he had so anticipated and the other because he felt he did not have the financial resources to do the things he would like to do.

Pain and disability have social ramifications, as one woman discovered when she had to quit her job because of pain. Surgery ultimately resolved the physical problem but could not restore her employment and associated sense of worth, which "used to be my work, because I had something to do".

Depression can affect the ability to identify a meaningful activity. One interviewee compared an earlier depressed period with her current happy and positive state. She observed that the depression had made it difficult to think that anything was worth doing even if within her abilities.

Abilities

The extent to which people have sufficient abilities affects how satisfactorily they can accomplish valued activities. Interviewees spoke of mobility, vision, and mental function as particularly important. Only one person cited hearing; several indicated that loss of hearing would be more tolerable than loss of vision. One person with ongoing stomach problems wished for the ability to eat well.

Although none of the interview questions asked directly about it, remaining independent emerged as an important contributor to better health. Respondents wanted not to lose the abilities to get around, cope with things, and care for themselves. Three-fourths of them — and all but one of the over-raters — made at least some reference to independence. A woman with acute, disabling discomfort said, "I just want to be able to take care of myself, do my own house, and play cards and stuff like that". A relatively younger woman noted from her experience with her mother and mother-in-law that getting older "makes you less independent" and asserted her own desire not to have help. Many respondents spoke with pride or pleasure of their independence, saying for example, "we can take care of ourselves" and "I can do anything I want to". One woman expressed a common concern, "I don't want to go to a nursing home, and I don't want to be a burden". Being dependent on others "would I guess embarrass me", said one man, who added, "I just hope I grow old gracefully". Acknowledging that others didn't mind giving the help he needed, an oxygen-dependent

respondent nonetheless regretted his dependence: "I'm kind of getting tired of having to be so dependent on somebody else now . . . I hate to impose on [my wife] for everything I have practically." On the other hand, another man who had no such support system worried about "who's going to take care of me" if he lost his ability to care for himself. At the most extreme, in terms of coping with such loss of ability, the father of a physician stated that "I'd rather my son gave me some kind of a pill and put me to sleep and I said good-bye to everybody and that's it".

Many, but not all, of these older people found getting older itself a challenge. As one woman put it aptly, "It's not the golden years, it's definitely rusty years". They expressed concerns about physical decline — for example, one commented that "I think you just kind of fall apart" — but not everyone thought aging was the problem. One man observed that if one had led as healthy a life as possible, then "I don't believe that growing old is a major problem . . . just the aging process itself does not have to be a major problem". Some found declining ability frustrating ("I cannot do what I did ten years ago, and I get very angry . . . I get disgusted with myself"), and others seemed more accepting ("We're all gonna get older, we're all going to have our aches and pains, and we're all gonna go").

The extreme under-raters appeared to accept or be resigned to limitations due to aging, saying things like "I can remember years running up there but I wouldn't do that any more, I wouldn't even try to", "I know everybody's got to die sometime", and "I have reconciled myself with the fact there are some limitations I have to live with now". Over-raters, in contrast, expressed determination to continue to do as much as possible. As one woman observed, "Well, you can either just sit down and do nothing, or you can keep the few things that you like to do and work towards that". A woman in her mid-eighties who exercises religiously and continues to create works of art, may have explained the difference: "[Some other] people have an idea that as you get older you're going to be weaker and you're going to deteriorate, so you might as well sit and deteriorate."

Resources

Appropriate external resources can counter declining abilities to support going and doing. The study population, all Kaiser members, had access to health care. They reported using almost no formal support services. They did, however, identify a variety of other resources.

Almost everyone spoke of friends and family when asked about valued relationships. Three women mentioned groups of friends they had had for many years.

One described a group that has gotten together for dinner once a month for more than 40 years:

Those people know you best, they know your kids, they know your family problems. Those are the ones I value. I have wonderful neighbors, but they're not near as close even though they live next door. They're not as close in your heart.

Most respondents, even those who had experienced difficult times with their children, spoke lovingly of family. As one explained, "I am a very strong believer in close relationships with the family members. We have a beautiful family, and I treasure that, and I value that". For some, getting older brought a larger and closer circle of multiple generations of family and friends. One of the most physically challenged of the interviewees spoke quite emotionally of the joys of attention from friends and family. For others aging had meant losing those connections: "My best friends are all gone . . . and I feel that is one of the worst parts of getting old and surviving; you have to bear the pain of seeing them go."

Having a spouse did not guarantee a positive perception of health, especially if the spouse had poor health and required caretaking or if the respondent felt overly dependent on a spouse for care. For those whose spouses had died after long illness, the length of widowhood appeared to mediate the impact; three of the five longer-term widows (there were no widowers in the sample) were members of the extreme over-rater group. A fourth had raised children while coping with her husband's 32 years of debilitating illness; she felt that the burden had meant losing track of other family.

Cooperative marriages, on the other hand, appeared to support positive perceptions. Six of the nine who spoke warmly of such relationships were over-raters. One explained, with laughter, how she and her husband manage: "We make two separate grocery lists, one for him and one for me, and two baskets, and we put them together, and I get to go sit on a chair and he checks them out, and we go home." "And of course we do have each other," another responded to a question about support; "I depend a lot on [my husband], he does most of the leg work in our twosome."

The interview did not directly address sexual activity, but two respondents, one male and one female, expressed regret that their spouses no longer were interested in sexual relationships. A third spoke of the pleasure of a "very desirable spouse" and continued sexual satisfaction. The former were extreme under-raters and the latter an extreme over-rater.

Several interview questions addressed social support — available, wanted or needed, and reciprocated. Responses supported the theories cited by Stewart (1989) concerning why social support has an effect: attribution, social-exchange, social-comparison, lone-

liness, and coping. One man blamed the government for the dullness of his life, attributing his boredom to perceived unfairness from Social Security (no benefits based on his wife's work) and Medicare (insufficient prescription benefits). Many respondents mentioned reciprocal support and the desire to keep social exchanges equitable. Interviewees looked to "family and your close friends if you need some opinions or advice" and relished "being able to answer questions" and give advice. "We have a prayer list at church, and we pray for each other," said one woman. Another told of her daughter-in-law who shoveled the snow, "and I asked her how I could repay her — 'Just buy lots of Girl Scout cookies,' she said — so I bought 25 dollars' worth." A much older woman reflected on the occasional need to allow inequity: "I don't like the idea of asking [a friend] to do anything for me, but on the other hand there are probably some times when we need help, we need to accept that from others." Social comparison requires information about others as a basis for the comparison. Most respondents, when asked to compare their health with that of others their age, felt that they had better health than their contemporaries.

Illustrating the relationship between loneliness and social support, a man long-divorced and without close family described fear and loneliness and his resulting need for support:

Maybe this is common, maybe it's a nightmare. You know, I live in an apartment. If I die, I might be laying there for months, nobody to check on. The mail would build up and so forth. People would call, but they would think, "Oh, he's out".

A dependable friend was now quite ill; another, "kind of like an older brother," had recently died. He mourned, "that was unexpected, and it didn't make me mad, but, you know, who can I talk to?"

Coping is a larger issue that involves all the varieties of social support — emotional and instrumental. Social support, at its best and most effective, provides enough of the right resources for people to meet the specific challenges they face. When asked about available social support resources (whether needed or not), almost everyone referred to family and friends, for all kinds of assistance, and quite a few mentioned health care or information. Seven of the eleven over-raters, however, said they did not want or need any additional support. Most of them did in fact subsequently name some desired resources, but their first reactions were that they needed and wanted nothing. None of the under-raters responded similarly.

Although most reported quite a few available sources of social support, many respondents described additional support they needed or wanted, such as the following:

- “I’d just want friendship, some compassion, understanding, empathy.”
- “I suppose I need, everyone needs, someone to lean on . . . you can’t be up all the time.”
- “I’d sure like to find a handyman.”

Access to social support seemed to be only part of what people were talking about. Too little support bred loneliness, while too much caused less harm but generated bad feelings and challenged self-esteem. Support received was not always desired. “I get so unhappy with my grandchildren,” said one respondent with laughter, “they ease me down and help me up, and when I walk into a restaurant, they come take my arm as though I can’t walk and things like that, but then I let them do it.” Another felt similarly: “My relatives that look after me a little bit, sometimes I could do without some of that.”

People spoke of health care as a resource. Some referred to health information from family and friends, but most discussion, in response to specific questions, concerned their relationships with health care providers. Respondents valued a caring manner, good listening skills, and respect. As Kaiser members, all study subjects had access to care, but just having health care did not much affect relative perceptions of health; it was the nature of the relationship that mattered. There were clear differences among the groups in their descriptions of their relationships with providers. Most of the extreme under-raters limited their participation in the relationship to supplying information and complying with the provider’s authority, as opposed to true collaboration. As one said, “I try to follow directions and take my prescriptions and everything according to order.” Moderate under-raters thought they had responsibilities but mainly at the level of discussing options. Moderate over-raters felt more involved and more like active members of a team. Extreme over-raters emphasized the patient’s responsibilities. One answered, “Oh yes, I, yes yes yes I have”, when asked if she contributed to decisions about health care. Another explained that “the patient has to be somewhat responsible rather than just have a doctor make all the decisions; you have to make the choices”.

There were other differences among the groups. Moderate under-raters reported fewer available or desired instrumental resources and wished for more emotional support. Over-raters indicated they had more instrumental supports available than the other groups, although as noted above, they said they needed and wanted none. Over-raters, in fact, identified a larger number of both available and desired resources overall. Extreme under-raters identified about as many available resources as the over-raters; they expressed fewer emotional needs and wants than the other groups.

Attitude

Personal characteristics affect people’s choices and actions. Either by direct attribution or through their stories, interviewees identified the following characteristics: attitude, one’s sense of self and awareness of self, a sense of control, and a focus on others. These were the characteristics that most discriminated between optimistic and pessimistic evaluations of health.

Attitude emerged as an important, perhaps the most important, contributor to positive perceived health. When asked to explain the difference between people who think of themselves as healthy, even though they may have serious physical problems, and people who think of themselves as less healthy, although they may have fewer problems, respondents repeatedly spoke of positive attitude:

- “It’s attitude, see, instead of looking out and seeing the problem, look out and see something else, something nice.”
- “They can still keep smiling and have a positive outlook.”
- “A negative attitude is very destructive, and a positive attitude is always in the direction of a better way of some kind.”
- “Getting older is no fun, that’s for sure, but I think a lot of it is in outlook.”
- “Some people are courageous, and they somehow overcome the obstacles; . . . other people may have minor things and complain like it’s the end of the world. That’s the way people, you know, evolve in their personalities and their make-up.”

or its reverse, a *poor me* attitude:

- “People make mountains out of molehills.”
- “I’ve often looked at people and wondered, ‘Why are you feeling so sorry for yourself? Why do you complain all the time?’ And then the sky can be as blue as blue can be, and somebody’d bitch about it. . . . Every one of these people want to blame their childhood, . . . and they want to blame other people. . . . I really do get angry with ‘poor me’.”
- “I think it goes back to their mental attitude . . . if they have this negative attitude toward themselves and toward others, then I think it all kind of closes in.”
- “It was just like ‘feed me, water me, whatever,’ and they weren’t going to try and help themselves.”
- “Maybe they’re born with a more negative outlook on things.”

Almost all interviewees discussed attitude, and many were able to suggest factors that they thought contributed to it. About half felt that upbringing played a role. One spoke of a “person’s earlier life and the ability or inability to accept responsibility for one’s actions”.

Another remembered his father's trust and belief in him "that built up my own attitude [and] has lived with me all my life". A third explained the connection between childhood and attitude:

I think that certainly one's upbringing can be a factor, in what you're trained and taught and what your environment, what you're exposed to. Those experiences form your emotional responses to adversity and for the positive things life provides for most of us. And then you're in command as to whether you're going to feel sorry for yourself and think the world is just the most awful place.

One man suggested that life experience, including but not limited to childhood, made the difference:

how they were brought up and the number of friends and family supports they had. There's some people who do not have the family backing, or their parents have passed away, or anyway they don't have the closeness of a family in their later years or do not have a close circle of friends and they feel like nobody loves them. . . . They, you, lose your vigor or lose your outlook on life, and it's sad, really sad.

Half of the six negative recollections but only one of nine positive ones came from the extreme under-raters. One woman turned to church and religious faith in childhood to counter a dismal situation that included threats of being sent to an orphanage. She continued substantial church-based service and refused to let the burden of physical discomfort and inconvenience lead to self-pity. Two others, with better current physical status, also spoke of difficult childhoods. One, for whom health meant the ability to remain physically active, required many years to overcome fears related to his mother's disability:

[Her medications] didn't help a great deal and so I lived with a tremendous amount of anxiety about that personally because I was worried about her. I was worried about myself, was I going to also develop this . . . condition, and I was blessed and fortunate that I didn't have to contend with that.

The other, a woman in her early 1980s who attributed her satisfying and perceived healthy life at least in part to self-reliance, explained that "my immediate family was not a really close family, and that may be part of . . . the way I feel . . . because I knew I had to take care of myself".

Several people spoke of control or willpower. One said, "If you've got something to do and you make yourself do it, you kinda forget your problems". Others spoke of those who "have a lot of willpower and control over their life" and "the ability or inability to accept

responsibility for one's own actions." They thought people developed negative attitudes because "they don't try to help themselves to alleviate their problems," "they're just too lazy to get up and get on with it," "[they] just sit down and give up, which is what I'm sure a lot of people do," and "they give up so easily". They also attributed a negative attitude to an inward focus. One woman suggested that "they don't want to give of themselves, and they don't want to help". Another mentioned some people's need for attention.

Others mentioned benefits of getting older. One woman spoke of compensations: "You're not as frantic as you used to be; you kind of know you can't conquer the world, and you don't really want to." Another admitted that "sometimes I use my age as a good excuse if I don't want to do [something]."

A number of the interviewees thought faith supported a positive attitude. One made a direct connection, saying, "Both of us have always thought positive — we go to church and we believe in God." Another explained, "I think [the reason for my positive attitude] is my faith, because I just am so thankful for what the good Lord has given me".

A series of interview questions probed for information about the extent to which these older people felt they had control over their health and their lives. Kaiser encourages its members to take an active role in their health care, and it may be that people who wish active involvement therefore self-select Kaiser, so it is perhaps not surprising that most felt that they had control over their health. One woman explained, "I control my health by what I do, how I live;" another said similarly, "Control over my health means what I do with it". People did not always identify their locus of control unequivocally as internal or external. A man who indicated that he could control his health behaviors also commented that "just out of the clear blue sky [a bad health incident] can happen to anybody, I guess". Another man who said he had little internal control did in fact very actively conduct research on types of supplementary oxygen and then convinced his physician to supply the type he found to be best.

One man explained the importance of internal control, the feeling that things don't just happen to you: "I am concerned about things that I can't control because I feel comfortable with what I can control; I just feel like that anything I can control myself I'm all right with it". Over-raters were slightly more likely than under-raters to indicate an internal locus of control. They said things like "I think I feel like I have control over the future" and "I think I pretty much control what I do". Extreme over-raters tended to be even more emphatic: "Well, I think I'm totally in charge of my life," said one, and another agreed, "Well, I think I'm truly in control." Again, though, several made contradictory statements, such as "basically I feel like I can do

what I need to,” but then “sometimes I don’t feel like I’m in control at all”.

Related to locus of control is an individual’s sense of self — self-esteem, self-efficacy, and self-confidence. One woman stated, “I just believe in myself so strongly, that anything I can control is not a worry and not a problem”. Another woman attributed her lack of self-esteem to comparisons with an older sister and not having “a good mental perception of yourself and your environment and people and relationships around you”. Both of these women, despite dissimilar perceptions, were under-raters. A male over-rater with difficult childhood experiences talked about having to overcome a lack of self-assurance: “I think I grew up with a real lack of, you know, confidence, for various reasons in my life [which he then listed]; anyway, it didn’t give me a feeling of self-assurance that I had any abilities”. Another over-rater similarly addressed responses to earlier difficulties. She said, “I don’t know, but I’m sure when you’ve had a lot of problems and you’ve worked your way through them, you’re more apt to feel that it will work out”.

Just as an internal locus of control seemed to support better perceived health, so did an external focus. One of the extreme under-raters could speak only of himself and what he did or didn’t do. In contrast, a woman who acknowledged tendencies to feel down occasionally, spoke of how visiting sick and shut-in church members “makes me feel very good after I do something like that.” Another said, “I think if you can look at somebody else and see where you might be able to help them, that helps you”. A house-bound over-rater asserted that “only two things are really worthwhile . . . what you eat and what you can do for somebody else”.

An awareness of one’s condition had both positive and negative impacts. In some cases, learning more about health behaviors and their own conditions increased the sense of control and provided tools for coping with health problems. Several people mentioned specific classes that had given them useful information. On the other hand, as Mechanic (1986) cautioned, awareness sometimes bred worry and anxiety. One woman described that feeling:

Sometimes if I get some vague little physical feelings, you know, one can, I think, as they get older, can imagine, can let the imagination run away and say, “Oh my gosh, it could be this, it could be that.”

Another worried that “my sister was about 19 years older than I was, and everything that happened to her in her life about 20 years later would happen to me”. The following exchange concerning an absence of awareness may explain negative aspects of its presence: when asked if it had been frightening to be out of control due to her

then untreated bipolar mental illness, the respondent answered, “Nope and I’ll tell you why — because you’re not aware of it”.

Several people described ways of dealing with worries. A woman reacted to her father who became a zealous nutritionist after illness: “I have met people that are so overly concerned that I thought I’d rather be unconcerned and try to make my way”. Another’s father offered a different example:

My father always said, “Don’t worry about anything, because if you worry and it happens, you’ve worried for nothing, and if you worry about it and it doesn’t happen, you’ve worried for nothing,” and I think I’ve kind of lived by that.

Many respondents suggested that personality type — an optimistic or pessimistic orientation — underlay the difference between positive and *poor me* attitudes. Several mentioned personal characteristics such as “a good mental perception of yourself and your environment and people and relationships around you”. Two women described well-being as a sense of contentment and peace; one added “a sense of being aware that your time is short to learn a lot of things you want to learn”. One man emphasized “enjoying life” even when one “can be where it’s a pretty rough life”. Another referred to those who “can live within their limitations [and] enjoy what they have . . . to aspire but not put themselves in a situation where they are setting themselves up for disappointment and frustration”.

Whatever the sources, people who expressed positive attitudes, assertiveness, the determination to continue to be active, and the desire to take charge perceived their health status relatively more favorably than those who did not.

Differences between under-raters and over-raters

We chose to interview people whose reported health status differed from that predicted by a regression model in order to explore the possibility that they could identify characteristics that better distinguish between more and less positive perceived health. We discovered that over-raters tended to be more assertive and active, even feisty, while under-raters were more cautious and accepting or resigned. As an example, extreme under-raters generally limited their participation in the patient-provider relationship to providing information and complying with directions, while moderate under-raters accepted a bit more responsibility. Moderate over-raters felt like active members of the team, and extreme over-raters placed emphasis on their own roles and responsibilities. Similar differences arose in descriptions of aging. Extreme under-raters accepted limitations to aging and were resigned to them; over-raters

expressed determination to continue to do as much as possible. All but one of the over-raters mentioned the importance of independence. Only three of the six extreme under-raters did so. Over-raters, especially extreme over-raters, were more likely than others to indicate an internal locus of control, to feel in charge of their lives.

Under-raters tended to describe well-being in terms of physical condition, while over-raters more often took a global view that incorporated doing things and being with people. Extreme under-raters and moderate over-raters reported greater illness burdens than the other groups, but they reacted differently. Several extreme under-raters referred to dull or routine lives, while moderate over-raters were less likely to “just sit down and do nothing”.

Many over-raters reported that they did not want or need social supports (although they reported more available resources than under-raters). These assertions correspond with their greater desire to remain independent. Extreme under-raters indicated they had almost as many available resources as the over-raters, but they expressed fewer emotional needs and wants, perhaps a reflection of their tendencies just to accept. Moderate under-raters reported fewer desired or available instrumental social supports and had more desire for emotional support.

Moderate under-raters seemed to have some innately different characteristics that perhaps explained their lower-than-predicted ratings. They generally offered cautious, conservative, thoughtful responses, and they seemed to process the questions more cognitively. This response by one of them provides an example: “I’ve never really thought about that, I can’t answer that in a second, I have to think about that.” One woman alluded to tendencies toward depression, and another’s bipolar mental disorder was controlled by medication. Their conservative ratings of their health status appeared to be indicative more of their personalities than of any specific challenges or resources.

Of the factors described by the interviewees, then, the ones that most differentiated between those with optimistic health status ratings and those with more pessimistic ratings seemed to be primarily attitudinal — independence, assertiveness, the determination to continue to be active, and the desire to take charge.

Interactions

Like previous quantitatively-derived explanations of healthy, or successful, aging, this model contains biological, functional, social, and psychological attributes of the individual and the environment. In contrast to previous quantitative models, however, it views health not as a static condition but as an ongoing interactive

rearranging and balancing of the model’s components to achieve the goal of doing something meaningful. The four components of the model — something worthwhile and desirable to do, the ability to accomplish the activity or occupation, appropriate resources, and sufficient will or positive attitude — all directly contribute to the desired outcome, healthy aging. As suggested by the dotted lines in Fig. 2, they also interact, supporting and supplementing each other and contributing to or benefiting from adaptation to change and challenge.

Ability denotes the capacity to act but does not guarantee performance. Without a goal (something meaningful to do) or the will or desire to act, ability remains only a necessary but not a sufficient condition for health. In healthy older people, at least in this population, an adaptive feedback interaction exists between ability and something to do. When an ability declined, these people adapted their valued activities or substituted an alternative. Reading replaced needlework when arthritis interfered, for example. Conversely, having something to do occasionally affected ability. One woman dedicated hours to working puzzles to regain ability lost from a stroke.

Social resources, formal and informal, have direct impacts on going and doing but perhaps even more indirect impact through the other components of the model. Social support, in the form of transportation or help with housework, for example, may supplement decreased ability sufficiently for people to maintain independence and continue with valued activities. Cultural expectations (Boult et al., 1994), which derive from the social environment, affect attitude and can complicate efforts to identify a meaningful activity. Family and community resources, on the other hand, can support those efforts by offering emotional support toward feeling worthwhile and instrumental assistance in locating and participating in desired activities.

Attitude affects the ways in which a person does or does not choose a worthwhile activity, use abilities, and take advantage of support resources. In turn, having something to do, feeling competent, and benefiting from available supports can bolster attitude, supplementing and supporting it. In summary, the components of the model directly support the going and doing that is healthy aging and also affect each other, supporting, supplementing, and interacting in adaptive feedback relationships.

Limitations

Possible limitations to this study include the source of the study population, interviewee selection, history and maturation, and questions about the rigor of qualitative research. Kaiser members may not represent the older

population as a whole because of their self-selection of that form of group-model managed health care. The interview sampling frame depended on a regression model for health status values to compare with study subjects' reports. If important factors were missing from that model, then it may have inaccurately predicted values. Reports that appeared discordant with predicted values might in fact have matched predicted values from a more complete model. The absence of any data concerning pain, for example, could have decreased the predictive value of the model. The parent study, however, did provide measures of most commonly assessed factors.

A number of people chose not to be interviewed. Those who refused reported worse baseline health status characteristics, but none of the differences were statistically significant. A substantial length of time passed between collection of the quantitative data that determined the sampling frame and the interviews (about a year and a half on average, with a range of eight months to two years), a delay that introduces concerns about the effects of history and maturation. In almost all cases, however, respondents made the same assessment of their health during the interview that they reported in the parent study.

Erlandson, Harris, Skipper, and Allen, (1993) provided a framework for determining the quality and rigor, or trustworthiness, of qualitative research. Trustworthy work must be credible, transferable, dependable, and confirmable. To meet the standard of credibility, this study incorporated extended engagement with the interviewees, reference to analysis of quantitative data from the same population, and periodic debriefing by experts in this type of analysis and in gerontology. Purposive sampling and thick description, according to Erlandson et al., support transferability by providing enough information for other observers to judge the applicability of the results to other contexts, in this case to other community-dwelling populations of older people. Sample selection procedures emphasized discordant cases in order to include divergent as well as typical data, and interviewees were encouraged to elaborate on their responses in order to generate thick description. Other populations may specify meaningful activities differently, especially as they reflect individual- or community-based values. The desire for such activity, however, seems universal. The World Health Organization has described the "preferred future" for aging populations everywhere:

As we grow older, we continue to pursue an active lifestyle, making the most of opportunities for social contact, travel, voluntary work and intergenerational activities. In this vision, too, we fully recognize the contribution of older people to life in the family,

community and society. (World Health Organization, 1999)

Dependability means that another person might reasonably draw the same conclusions from the data. All interview tapes and transcripts, as well as the interviewer's notes, remain accessible, providing a dependability audit trail. Confirmability concerns the degree to which the results of the research are products of the inquiry, not of the researcher's biases. As with dependability, the best guarantee lies in a well-documented audit trail; all ATLAS/tiTM coding, memos, and network records from this project remain available.

Conclusion

We have summarized the descriptions of health — a model of healthy aging — that emerged from conversations with the older people in this study in terms of the ability to *go and do* meaningful activity. The components of the model include having: (1) something worthwhile and desirable to do, (2) the ability to accomplish the activity, (3) the resources to support the activity, and (4) sufficient will or positive attitude. The informants' descriptions refer simultaneously to physical and mental function and dimensions of life in the context of relationships with other people (e.g., families, friends, service providers), places and institutional resources (e.g., homes, stores, churches, medical institutions), valued activities, and their own personal histories (present-day meaningful activities in the context of the past).

That older people value meaningful activity and a social life with family and friends — the "vital involvements" spoken of by Erickson, Erickson and Kivnick, (1986) — does not surprise us, since these are values of people at all ages. The people in this sample, however, specifically represented *health* in terms of such "goings and doings". This is health described not as the absence of disease or disability, nor as an ideal, but as a reflection of the lived experience of daily life, as a capacity to engage meaningfully with and respond to the contingencies of daily life regardless of afflictions and (dis)abilities. These older people tended to refer to the biomedical vocabulary of health status, morbidity, and co-morbidities only as an adjunct to what was more central, generating not medicalized understandings of health so much as holistic representations of personal values. By reframing healthy aging in older people's own terms, the model that emerged encourages interdisciplinary support of their desired goals and outcomes rather than only medical approaches to deficits and challenges.

Acknowledgements

The dissertation research from which this manuscript evolved was supported in part through grants from the Robert Wood Johnson Foundation Chronic Care Initiative to the Kaiser Foundation Health Plan of Colorado and from the Graduate Research Opportunities Program of the University of Colorado at Denver.

The authors give special thanks to the 22 individuals who taught us about healthy aging. We also thank the three anonymous referees whose constructive criticisms led to both substantive and stylistic improvements in the manuscript.

References

- Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass Publishers.
- Benfante, R., Reed, D., & Brody, J. (1985). Biological and social predictors of health in an aging cohort. *Journal of Chronic Diseases, 38*, 385–395.
- Berkman, L. F., Seeman, T. E., Albert, M., Blazer, D., Kahn, R., Mohs, R., Finch, C., Schneider, E., Cotman, C., McClearn, G., Nesselroade, J., Featherman, D., Garmezny, N., McKhann, G., Brim, G., Prager, D., & Rowe, J. (1993). High, usual and impaired functioning in community-dwelling older men and women: Findings from the MacArthur foundation research network on successful aging. *Journal of Clinical Epidemiology, 46*, 1129–1140.
- Boult, C., Kane, R. L., Louis, T. A., Boult, L., & McCaffrey, D. (1994). Chronic conditions that lead to functional limitation in the elderly. *Journal of Gerontology, 49*, M28–M36.
- Branch, L. G., & Jette, A. M. (1982). A prospective study of long-term care institutionalization among the aged. *American Journal of Public Health, 72*, 1373–1379.
- Bryant, L. L., Beck, A., & Fairclough, D. L. (2000). Factors that contribute to positive perceived health in an older population. *Journal of Aging and Health, 12*, 169–192.
- Dubos, R. (1959). *Mirage of health*. New York: Harper.
- Erickson, E. H., Erickson, J. M., & Kivnick, H. Q. (1986). *Vital involvement in old age: The experience of old age in our time*. New York: W.W. Norton & Company.
- Erlandson, D. A., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). *Doing naturalistic inquiry: A guide to methods*. Newbury Park CA: Sage Publications.
- Evans, J. G. (1984). Prevention of age-associated loss of autonomy: Epidemiological approaches. *Journal of Chronic Diseases, 37*, 353–363.
- Farquhar, M. (1995). Elderly people's definitions of quality of life. *Social Science and Medicine, 41*, 1439–1446.
- Idler, E. L., & Benyamini, Y. (1997). Self-rated health and mortality: A review of twenty-seven community studies. *Journal of Health and Social Behavior, 38*, 21–37.
- Kaplan, G. A., Wilson, T. W., Cohen, R. D., Kauhanen, J., Wu, M., & Salonen, J. T. (1994). Social functioning and overall mortality: Prospective evidence from the Kuopio ischemic heart disease risk factor study. *Epidemiology, 5*, 495–500.
- Kasl, S. V. (1983). Social and psychological factors affecting the course of disease: An epidemiological perspective. In D. Mechanic (Ed.), *Handbook of health, health care, and the health professions* (pp. 683–708). New York: The Free Press.
- Kuzel, A. J. (1992). Sampling in qualitative inquiry. In B. F. Crabtree, & W. L. Miller (Eds.), *Doing qualitative research* (pp. 31–44). Newbury Park CA: Sage Publications.
- Mechanic, D. (1978). *Medical sociology* (2nd ed.). New York: The Free Press.
- Mechanic, D. (1986). The concept of illness behavior: Culture, situation, and personal predispositions. *Psychological Medicine, 16*, 1–7.
- Mechanic, D. (1995). Sociological dimensions of illness behavior. *Social Science and Medicine, 41*, 1207–1216.
- Mor, V., Wilcox, V., Rakowski, W., & Hiris, J. (1994). Functional transitions among the elderly: Patterns, predictors, and related hospital use. *American Journal of Public Health, 84*, 1274–1280.
- Parsons, T. (1951). *The social system*. New York: Free Press.
- Pearlin, L. I. (1989). The sociological study of stress. *Journal of Health and Social Behavior, 30*, 241–256.
- Rickelman, B. L., Gallman, L., & Parra, H. (1994). Attachment and quality of life in older, community-residing men. *Nursing Research, 43*, 68–72.
- Roos, N., & Havens, B. (1991). Predictors of successful aging: A twelve-year study of Manitoba elderly. *American Journal of Public Health, 81*, 63–68.
- Rosow, I. (1974). *Socialization to old age*. Berkeley CA: University of California Press.
- Schoenfeld, D. E., Malmrose, L. C., Blazer, D. G., Gold, D. T., & Seeman, T. E. (1994). Self-rated health and mortality in the high-functioning elderly: A closer look at healthy individuals: MacArthur field study of successful aging. *Journal of Gerontology, 49*, M109–M115.
- Shapiro, E., & Tate, R. B. (1985). Predictors of long term care facility use among the elderly. *Canadian Journal on Aging, 4*, 11–18.
- Stewart, M. J. (1989). Social support: Diverse theoretical perspectives. *Social Science and Medicine, 28*, 1275–1282.
- Strain, L. A. (1993). Good health — what does it mean in later life?. *Journal of Aging and Health, 5*, 338–364.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications.
- Sugisawa, H., Liang, J., & Liu, X. (1994). Social networks, social support, and mortality among older people in Japan. *Journal of Gerontology, 49*, S3–S13.
- US Administration on Aging. (1998). July 30. Profile of older Americans: 1997 (on-line). Available: <http://pr.aoa.dhhs.gov/aoa/stats/profile>.
- US Bureau of the Census. (1998). June 25. Resident population of the United States: Estimates, by age and sex (on-line). Available: <http://www.census.gov/population/estimates/nation/intfile2-1.txt>.
- US Health Care Financing Administration. (1998). September 9. National health expenditures aggregate amounts and average annual percent change, by type of expenditure: Selected calendar years 1960–96 [on-line]. Available: <http://www.hcfa.gov/stats/nhe-oact/tables/t10.htm>.
- Wan, T. T. H. (1986). Evaluation research in long-term care: Scope and methodology. *Research on Aging, 8*, 559–585.
- World Health Organization. (1999). Health futures (on-line). Available: <http://www.who.int/hpr/expo>.