Medical Care in Old Age: What Do Nurses in Long-term Care Consider Appropriate?

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OBJECTIVES: To determine whether nurses working in a long-term care institution, who are knowledgeable about the full range of conditions common among older people, favor limitations of treatment in old age; and to study whether the level of intensity of care they regard as appropriate varies with the overall health status of the older individual.

DESIGN: Participants were asked to complete an intervention-specific advance directive for themselves, with scenarios representing terminal illness, dementia plus chronic illness, chronic illness in a nursing home resident, chronic illness in a community-dwelling older person, and a robust, community-dwelling older person.

SETTING: A 725-bed long-term care institution, with residents having a mean age of 88 years and a wide range of physical and cognitive deficits.

PARTICIPANTS: Full-time nurses at the long-term care facility were eligible and were given survey instruments; 102 of the 145 eligible nurses completed the questionnaire.

MEASUREMENTS: The unit of analysis is the refusal rate, defined as the mean number of refusals of interventions for each respondent.

MAIN RESULTS: The overall refusal rate for all five scenarios taken together was 72.1%. The refusal rate in the case of terminal illness was 90.9%, in the case of dementia plus chronic illness 81.8%, in the case of dementia in a nursing home 69.1%, for a homebound older person with chronic illness 70.9%, and for a previously healthy 85-year-old person living in the community, 50.0% ($P < .001$).

CONCLUSIONS: Nurses working in a long-term care institution have strong preferences about limiting a variety of interventions in old age. The greater the degree of physical and cognitive impairment, the more limitations they favor. This suggests the necessity of expanding advance planning to include a discussion of what constitutes appropriate treatment in a broad range of circumstances. J Am Geriatr Soc 44:1322–1325, 1996.

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The traditional living will is limited in its application to "terminal conditions in which death is imminent" and typically refers only to life-sustaining treatment.[1] The next generation of advance care documents, the intervention-specific directives, are also intended to be applied only in extremely dire circumstances such as terminal illness, end-stage dementia, or persistent vegetative state.[2] The underlying assumption is that only in situations of impending death or extremely poor quality of life would individuals consider any approach other than maximal medical care. However, as people reach old age and develop functional deficits, the probability of death in the near future increases, regardless of the aggressiveness of medical intervention. In addition, the risks associated with treatment (nosocomial infection, delirium, pressure ulcers, etc.) grow[3,4] and the effectiveness of treatment declines.[5] Given these observations, many people might wish to trade off maximal likelihood of cure for greater comfort: when offered a choice, they may select treatment that provides what they regard as an adequate chance of success, even if that treatment is generally regarded as less than the 'standard of care.'[6]

Most advance directives are also predicated on the assumption that the patient's choices are dependent solely on personal preference, with little weight attached to the objective, overall status of the individual's health before the onset of acute illness.[7] This model makes sense for entirely healthy people whose advance directives address the possibility of sudden, catastrophic illness such as a devastating subarachnoid hemorrhage or a car accident resulting in a persistent vegetative state. In older individuals, their pre-existing state may affect not only their quality of life and, hence, their preferences for care, but also their capacity to tolerate medical intervention, which in turn has implications for their future quality of life. One study found, for example, that hospitalized patients were dramatically influenced by the probability of their being able to return to their usual level of function in their desire for life-support, with 90% opting for life-sustaining treatment if they could expect to return to their baseline, 30% if they would be unable to care for themselves, 14% if they were told recovery was hopeless, and 6% if they were told they would survive in a persistent vegetative state.[8] Thus, it may be important, when using advance directives with older individuals, to educate patients about their physical and mental functioning, the nature of any chronic conditions they may have, and their likely subsequent trajectory.[9]

We wished to explore the possibility that limitation of treatment should be considered seriously in a variety of circumstances other than terminal illness or persistent vege-

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tative state and that individuals' views about the appropriateness of treatment would depend on their underlying condition. We hypothesized that individuals would choose progressively less vigorous treatment as they moved from being robust to physically frail, demented, demented and physically frail, or dying. To test this hypothesis, we focused on nurses working in a long-term care facility, given their extensive experience with the full range of conditions that may affect older people. We asked what medical interventions they would regard as reasonable for themselves in each of a variety of underlying health statuses, should they develop an acute illness in old age.

METHODS

The study was conducted at the Hebrew Rehabilitation Center for Aged (HRCA), a 725-bed long-term care facility. The mean age of residents is 88 years, and they are grouped by their level of physical and cognitive disability. Medical coverage is provided by a closed staff of primary physicians and by geriatric fellows from the Harvard Geriatrics program.

Study participants were registered nurses and licensed practical nurses working at HRCA at least 24 hours per week. Members of the nursing staff were asked to complete an advance care document for themselves. The document was modeled on the Medical Directive, which requests respondents to designate which of various specified interventions they would accept, if medically indicated, in several distinct situations. The treatments considered were cardiopulmonary resuscitation, mechanical ventilation, artificial nutrition and hydration, major surgery, dialysis, chemotherapy, minor surgery, invasive tests, blood transfusions, antibiotics, and simple diagnostic tests. The scenarios used in the Medical Directive were replaced by two scenarios utilized in an earlier study addressing the preferences of nurses in an acute care facility: acute illness in a previously healthy 85-year-old person (Situation A) and in a chronically ill 75-year-old person (Situation B); and three new scenarios: acute illness in the setting of dementia in an 85-year-old nursing home resident (Situation C), dementia and chronic illness in an 85-year-old nursing home resident (Situation D), and a terminally ill 85-year-old person (Situation E) (Appendix). The nurses were instructed to designate the interventions they would wish for themselves if they were in the situation described.

A follow-up questionnaire was sent to nonrespondents. The answers were kept confidential. This study was approved by the Clinical Investigations Committee of the Hebrew Rehabilitation Center for Aged.

Statistical Analysis

The unit of analysis was the refusal rate, defined as the mean number of refusals for each respondent. An overall refusal rate was calculated for each of the five situations and for each of the 11 interventions. Refusal rates were compared using one-way analysis of variance. Confidence intervals were computed at the 95% level. The influence of demographic factors on refusal rates was assessed with multivariate analysis using the SPSSx statistical package.

RESULTS

Of the 145 nurses eligible, 102 (70.3%) completed the survey. Nurses were predominantly white (80.6%), Catholic (68.7%), and between the ages of 35 and 54 (64.6%). Eighty-two percent were registered nurses, with the remaining 18% licensed practical nurses. More than half of the respondents had at least 11 years experience in geriatrics and worked with residents who are dependent in many activities of daily living and/or have impaired cognition. The nurses who responded to the questionnaire completed it in its entirety. Although 41 of 102 (40.2%) respondents checked off "I am undecided" in answer to at least one question, only 225 of 5610 (4.0%) of the questions were answered with "I am undecided."

When all five situations were lumped together to calculate an overall refusal rate, nurses refused 72.1% of the possible interventions. When the refusal rate was examined for each of the five scenarios, the refusal rate in the case of the previously healthy 85 year old was 50.0% (C.I. 24–66); in the case of chronic illness the refusal rate was 70.9% (CI 56.9–84.9); in the case of dementia the rate was 69.1% (CI 55.1–83.1); in the case of dementia plus chronic illness the rate was 81.8% (69.8–93.8); and in the event of terminal illness the rate was 90.9% (CI 82.9- 98.9) (Figure 1, $P < .001$).

When the specific interventions were analyzed individually, refusal rates in each of the 11 cases differed across the five scenarios ($P < .001$ for each of the interventions). In every case, refusal rates were highest in the case of terminal illness and lowest for the previously healthy individual, with intermediate rates of refusal for chronic illness and dementia (Figure 2). When the interventions were grouped in accordance with clinical criteria for invasiveness (with CPR, artificial ventilation, dialysis and chemotherapy regarded as maximally aggressive, blood products, antibiotics, minor surgery, and simple tests regarded as minimally aggressive, and the remaining interventions considered to be of intermediate aggressivity), the refusal rates for the three groups were significantly different in each of the five scenarios ($P < .001$) (Table 1).

In multivariate analysis, the only factor associated with the pattern of refusals was the type of unit on which the nurse worked. Nurses working on units with the more impaired patients were more likely to favor limitation of treatment for each of the five scenarios examined ($P = .003$).

DISCUSSION

Our finding is that among people who are educated as to the realities of being old and sick, there is a strong tendency to favor limitation of treatment for acute illness. The majority of

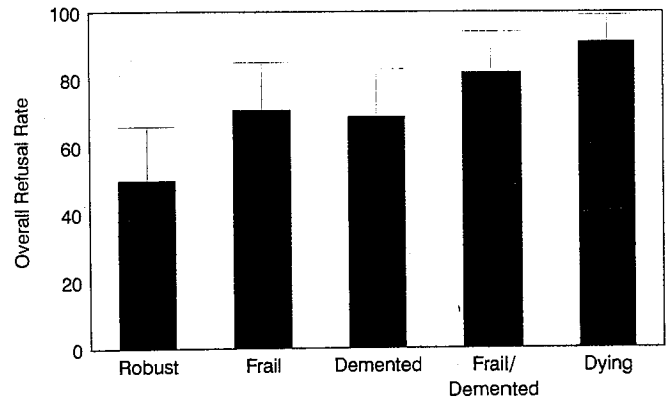

Figure 1. Effect of initial state on preferences of long-term care nurses for care. Overall refusal for each scenario is given, + 2 SE.

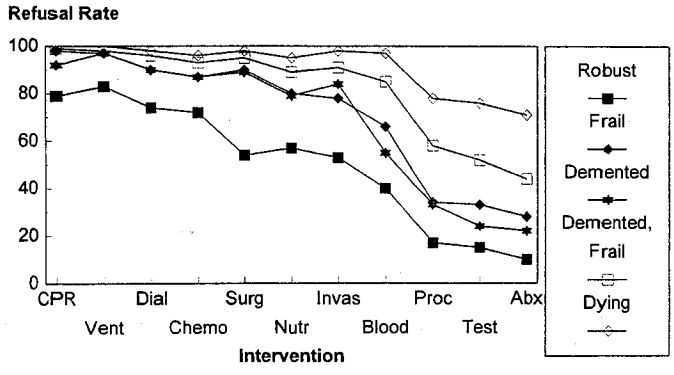

Figure 2. Refusal rate for each of the 11 interventions: cardiopulmonary resuscitation (CPR) ventilator (vent) dialysis (dial) chemotherapy (chemo), major surgery (surg), artificial nutrition (nutr), invasive tests (invas), blood products (blood), minor surgery (proc), simple tests (test), and antibiotics (abx). The differences between rates of refusal for each intervention, compared across the five scenarios, is statistically significant ($P < .001$ in each case).

our subjects stated they would decline a variety of interventions if they were homebound and functionally dependent, if they lived in a nursing home (either with or without dementia), or if they lived at home and were previously healthy. Only 3% contemplated major interventions if they were terminally ill, and 75% did not even consider antibiotics or simple diagnostic tests appropriate in the event of terminal illness. At the other extreme — the case of the vigorous 85-year-old who develops an acute illness — 76.8% would refuse the most aggressive interventions, 50.6% would refuse the moderately aggressive interventions, and 13.6% would even refuse such interventions as simple diagnostic tests or antibiotics. This suggests the importance of expanding advance planning discussions to include care in the final years rather than merely weeks or months of life.

The overall status before the onset of the acute illness was also important in determining the extent to which subjects wanted vigorous treatment: there was a progressive rise in the overall refusal rate as the basic status moved from robust to dying, with no significant difference between the chronically ill, homebound 75-year-old person and the physically robust 85-year old nursing home resident with moderate dementia. Since older people are not typically given a comprehensive assessment of their condition, such an evaluation may be necessary for meaningful completion of advance directives.

Our study may be criticized for our use of an intervention-specific directive. Such directives fail to identify the goals of treatment and to address possible alternative treatments.[10] However, our interest in this variant of the Medical Directive is as a research tool to approximate the intensity of care desired under various circumstances, not because we recommend it for use with patients. We wished to be able to compare preferences for care, given differing pre-existing health states. Hence the primary outcome measure was the overall refusal rate. The breakdown by specific interventions is of interest insofar as it suggests that it is reasonable to define different levels of intensity of care and that the level favored depends on the underlying state of health. The possibility that all older people should be candidates for selecting different approaches to medical care, as is currently done in some nursing homes,[11,12] should be further explored.

We confined our study to nurses working in a chronic care facility because we felt that this group would have intimate and extensive experience with the full spectrum of older individuals, from the robust to the dying. Of note, these nurses had a slightly higher refusal rate than their counterparts in an acute care hospital for the two scenarios presented to both groups: in the situation of the previously healthy, community-dwelling 85-year-old person, the chronic care nurses refused 50.0% of interventions compared with a 43.4% refusal rate among the acute care nurses ($P = .050$); in the case of the chronically ill, homebound 75-year-old person, the chronic care nurses refused 70.9% of the interventions, compared with a 63.6% refusal rate among the acute care nurses ($P = .032$).[13] The difference in refusal rates between the acute care nurses and the chronic care nurses may be the result of demographic differences between the groups: 69% of the acute care nurses were less than age 45, compared with 51% of the chronic care nurses. They may also be attributable to differences in educational attainment, as 100% of the acute care nurses were registered nurses, compared with 82% of the chronic care nurses. Selection bias may also play a role; nurses may have chosen their work site based on their pre-existing views about limitation of care in older people. Nonetheless, the tendency for the nurses working in the long-term care setting to favor fewer interventions

Table 1. Refusal Rates for Aggressive, Moderately Aggressive, and Minimally Aggressive Interventions

	Healthy Age 85 years	Chronically Ill Age 75 years	Demented in NH	Demented, Chronically Ill, in NH	Dying
Aggressive interventions					
CPR, Ventilator, Dialysis, Chemotherapy	76.8%	92.6%	91.3%	96.3%	98.5%
Moderately Aggressive interventions					
Major surgery, invasive tests, artificial nutrition, blood transfusion	50.6%	78.2%	79.0%	89.9%	97.0%
Minimally aggressive interventions					
Minor surgery, simple diagnostic tests, antibiotics	13.6%	31.6%	25.8%	50.7%	75.1%
P value	<.001	<.001	<.001	<.001	<.001

suggests that a good grasp of the realities of physical and mental frailty may be important in making choices about limitations of care.

While some studies have suggested that older people themselves would favor any medical treatment that offered even a small chance of life prolongation,[14] the small number of studies that have addressed the effect of underlying status on preferences confirm that the older prefer less invasive care, especially when there are multiple alternatives. One study looked at preferences for a variety of treatments (ICU care, feeding tubes, or antibiotics and hospitalization for pneumonia) and found subjects said they would refuse these interventions in the majority of cases if they developed dementia.[15] A second study looked at a single intervention — treatment for pneumonia — as a function of several different underlying health states: current health, stroke, early Alzheimer's disease, and late Alzheimer's disease. They found that the refusal rate was 1.8%, 29.8%, 41.3%, and 65.7% respectively.[16] Our study, which sought to examine preferences for several levels of care across a spectrum of health states, amplifies this earlier work by looking simultaneously at multiple underlying states and multiple possible interventions.

The nurses whose views we studied, half of whom are less than age 45, might, of course, feel very differently about limitations of treatment once they themselves become old. They may be biased against vigorous medical treatment for older people because the patients they care for have extensive functional limitations. Their high rate of refusal of interventions, even in the case of the previously intact 85-year-old patient, may reflect a belief about the inevitability of disability which is belied by data. The results of this study should, therefore, not be taken to mean that society as a whole, or health insurance companies, or individual physicians should unilaterally limit care to older people based on age or functional status.[17] Rather, the findings suggest the importance of reviewing with older patients their general state of health and of discussing the level of care they would wish in circumstances far less extreme than terminal illness, severe dementia, or irreversible coma.

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