Nursing Home Care Quality: A Multidimensional Theoretical Model

This exploratory study was undertaken to discover the defining dimensions of nursing home care quality and to propose a conceptual model to guide nursing home quality research and the development of instruments to measure nursing home care quality. Three focus groups were conducted in three central Missouri communities. A naturalistic inductive analysis of the transcribed content was completed. Two core variables (interaction and odor) and several related concepts emerged from the data. Using the core variables, related concepts, and detailed descriptions from participants, three models of nursing home care quality emerged from the analysis: (1) a model of a nursing home with good quality care; (2) a model of a nursing home with poor quality care; and (3) a multidimensional model of nursing home care quality. The seven dimensions of the multidimensional model of nursing home care quality are: central focus, interaction, milieu, environment, individualized care, staff, and safety. To pursue quality, the many dimensions must be of primary concern to nursing homes. We are testing an instrument based on the model to observe and score the dimensions of nursing home care quality. Key words: *nursing care, nursing homes, quality improvement, quality measurement*

Marilyn J. Rantz, RN, PhD, FAAN
Associate Professor
*University Hospital Professor of Nursing**

David R. Mehr, MD, MS
Assistant Professor of Family and Community Medicine†

Lori Popejoy, MSN, RN
*Long Term Care Research Nurse**

Mary Zwygart-Stauffacher, PhD, RN
Associate Professor School of Nursing
University of Minnesota
Minneapolis, Minnesota

Lanis L. Hicks, PhD
Associate Professor of Health Services Management†

Victoria Grando, PhD, RN
*Assistant Professor**

Vicki S. Conn, PhD, RN
*Associate Professor**

Rose Porter, PhD, RN
*Associate Professor and Associate Dean**

Jill Scott, MSN, RN
*Doctoral Student**

Meridean Maas, PhD, RN, FAAN
Professor College of Nursing
University of Iowa
College of Nursing
Iowa City, Iowa

**Sinclair School of Nursing, University of Missouri–Columbia, Columbia, Missouri*

†*School of Medicine, University of Missouri–Columbia, Columbia, Missouri*

ALTHOUGH MUCH has been written about the topic of nursing home care quality, little attention has been paid to carefully defining it. Even less attention has been paid to developing a theoretical model of the dimensions of nursing home care quality. This exploratory study was undertaken to discover the defining dimensions of nursing home care quality and to propose a conceptual model to guide nursing home quality research and the development of instruments to measure nursing home care quality.

BACKGROUND

While authors agree that quality is a multidimensional concept laden with personal perceptions and judgment,[1-5] most authors immediately leap to defining criteria or indicators of quality without defining quality.[6-9]

The members of the MU MDS and Nursing Home Quality Research Team gratefully acknowledge the support of the Missouri Division of Aging staff. Research activities were partially supported by a contract from the Missouri Division of Aging to the Sinclair School of Nursing and Biostatistics Group of the School of Medicine, University of Missouri–Columbia, Contract #C-5-31167.

J Nurs Care Qual 1998;12(3):30–46

Glass[10] points out that efforts to evaluate nursing home quality have been hampered by the lack of a conceptual model that specifies the dimensions of quality in nursing homes. Based on an extensive review of the literature, Glass recommends a conceptual model with four major dimensions of nursing home quality: (1) staff intervention, (2) physical environment, (3) nutrition/food service, and (4) community relations.[10] While Glass's model is an important first step in understanding the dimensions of nursing home quality, no empirical evidence to support the model is reported. Further, the Glass model does not include all of the critical dimensions of actual care for residents in nursing homes. A comprehensive definition and conceptual model of care quality are important because people primarily reside in nursing homes to obtain care and services for serious functional disabilities that tend to be of long duration.[11,12] Care quality is important to them and their families.

Donabedian advised that evaluation of quality of care be approached in three ways: by examining structure, process, and outcomes of care.[13,14] Following that advice, most authors organize their discussions of quality of care using these three categories to cluster potential quality measures or indicators. Historically, investigators have primarily used structure and process measures. However, more recently, outcome measures to evaluate nursing home care quality have received substantial emphasis.[6,9,15-21] Viewing quality through the dimensions of structure, process, and outcomes is helpful and guides consideration of multiple measures for determining care quality. However, it begs the question of the definition of nursing home care quality.

In a comparative analysis of 24 models of nursing home quality assessment, Sainfort and associates[22] concluded that specific nursing home quality assessment measures tend to measure only limited attributes of nursing home quality. They believe that quality is under-operationalized in each model. They found that the models typically contained more elements of structural quality such as attributes of the physical plant, staffing, ownership, size, reimbursement rate, and percentage of private pay rather than resident level process or outcome elements. One of the models examined in depth by Sainfort and colleagues[22] is the Quality Assessment Index (QAI) for measuring nursing home quality.[2] The QAI is a judgment-based index with seven dimensions of quality weighted in terms of relative importance. These dimensions reflect outcome, as well as process and structure criteria. The dimensions are: (1) direct resident care—outcome, (2) resident care—process, (3) recreation activities, (4) staff, (5) facility, (6) dietary, and (7) resident/community ties. Categories of items such as grooming, mood, awareness/orientation, physical condition, plan of care, volunteer program, and others are listed for each dimension. However, specific criteria for each of the items are not presented, nor are the theoretical relationships among the dimensions described.

Thus, the dimensions and operationalization of nursing home care quality remain largely undefined and untested. As a research team we set out to explore the concept and dimensions of nursing home care quality, propose a conceptual model of nursing home care quality for further testing and evaluation, better operationalize all dimensions of the model, and develop new instruments for measuring nursing home care quality.

METHOD

Nursing home care quality is a complex multidimensional concept that can be perceived in many ways. The focus group meth-

od is a particularly helpful strategy for exploring complex concepts because it taps into human tendencies, attitudes, and perceptions related to products, services, or programs.[23] Focus groups are intended to promote self-disclosure among the participants. The process of discussion facilitates this disclosure. To include multiple perspectives, a broad base of participants should be selected who have a variety of experiences in relation to the discussion topic. Focus groups have been suggested as an appropriate research technique for nursing,[24] health services research,[25,26] and as a technique to improve research and evaluation in health education.[27] Focus groups are not without disadvantages: they are time consuming and require researchers skilled in group process and qualitative research.[24] However, the method is a sound way to explore research questions such as the ones for this study: "What is nursing home care quality? What conceptual model reflects all of the dimensions of nursing home care quality? And, what measures of nursing home care quality are logically derived from the conceptual model?"

Sample

Following approval of the research by the university's institutional review board, purposive samples of participants with a variety of experiences of providing care in nursing homes were solicited. The samples included nursing home administrators, directors of nursing, social workers, activity directors, activity personnel, ombudsmen, physicians, nurses, state regulators, long-term care consultants, professional home care staff, professional hospice personnel, professional mental health personnel, and graduate nursing students specializing in long-term care and chronic illness. Home health, hospice, and mental health personnel either provided services in nursing homes or referred clients to nursing homes. Several participants had prior work experience as nursing assistants in nursing homes. Participants had experience with nursing home care delivery in rural and urban locations, small and large facilities, and profit and not-for-profit homes. Potential participants were told that the purpose of the focus groups was to discuss quality in nursing homes. It was explained that participation was voluntary, the groups would be videotaped and audio-taped for analysis, and reports from the analysis would not reveal individual participant identity.

Procedure

Three focus groups were conducted in three central Missouri communities. Twenty-two people participated in the first group in a major mid-Missouri city. This group was larger than expected. Krueger[23] recommends that focus groups be limited to no more than 12 participants so that each person has the opportunity to share insights and observations. However, the primary researcher was experienced in conducting focus groups and ensured that all participants were able to share their points of view; many of them rather extensively.

The primary researcher greeted participants, made them feel comfortable, and arranged chairs in a circle so that everyone could see each other. A video camera was placed behind the researcher so that it was unobtrusive and provided a view of all participants' verbal and nonverbal discussions. The group began with members briefly introducing themselves and explaining why the topic of quality care in nursing homes was important to them. Participants were told, "We want to understand, from your point of view, what quality care is in a nursing home. We want to understand how you know when you are in a facility that delivers what you think is good quality care." Then, the re-

Participants were told, "We want to understand, from your point of view, what quality care is in a nursing home."

searcher began the discussion, "I would like you to recall a nursing home you recently visited that you think does a particularly good job in giving quality care. What made you think the care was particularly good, what did you see, what did you hear, what did you sense when you were there?" After pausing and waiting for nonverbal cues that people were recalling the location of good facilities, the researcher solicited examples and descriptions of good facilities. Participants' descriptions were probed for sights, sounds, smells, and feelings. Extensive discussion ensued.

To expand the discussion beyond the initial images of the good facilities, the researcher probed for specifics about how quality might be measured and what resident outcomes might be used to monitor quality. Expanding the discussion was important to glean ideas about outcome measures and to prevent participants from relating mirror images of good quality homes when the researcher refocused the discussion on poor quality. To solicit information about poor quality nursing home care, the researcher directed the group, "Think about the last time you visited a facility and thought, 'Wow, this place delivers poor quality care. I sure would *not* want me or my family here.' What made that place particularly bad?" Again, the researcher paused for people to visualize such a facility. Following their nonverbal cues, the researcher initiated a discussion that generated participant descriptions of their experiences in poor quality facilities. Content was again probed for insights and participants continued the discussion until the topic was exhausted and all insights of apparent importance to them were shared.

The same procedures for conducting the first group were used in the two subsequent focus groups. Krueger[23] recommends planning for four groups, with evaluation after the second and third groups. If new insights are provided in the third group, a fourth and additional groups should be conducted as needed. In this study, a second group with five participants in the second largest city in mid-Missouri provided new information so a third group was conducted in a rural community. Eleven nursing home providers, staff, and advocates participated in the third group. Since no new information was gleaned, no further groups were conducted.

Analysis

Focus groups were videotaped and transcribed for analysis. The videotape enabled the researcher to watch participants' nonverbal communication while listening to the verbal communication. The use of videotape during focus groups has been shown to be effective.[28-30] A naturalistic inductive analysis of the transcribed content was completed by the researcher, using the method of constant comparison and analytic induction of the naturalistic paradigm described by Lincoln and Guba[31] and Munhall and Boyd.[32] The analytic method began with a review of the video and transcripts to identify information and categories that assisted in answering the research questions. Words from the participants were analyzed and clustered in six rounds of progressive inductive analysis. Two core variables and several related concepts emerged from the data. Using the core variables, related concepts, and detailed descriptions from participants, three models of nursing home care quality emerged and were constructed during the seventh round of

analysis. A detailed audit of the inductive analysis in the development of the models was maintained by the researcher and reviewed for dependability and confirmability[31] by a second researcher familiar with nursing home care and qualitative analytic methods. Additionally, the models were presented to other experts in nursing home care for reaction and critique. Based on that critique, further reflection, and review of the data, the models were slightly refined and are presented in this article for testing and evaluation by others interested in evaluating nursing home care quality.

FINDINGS AND DISCUSSION

The two core variables that emerged from the data are *interaction* and *odor*. Other related concepts that emerged are environment, milieu, individualized care and treatment, safety, staff, and quality measures.

According to Munhall and Boyd a core variable recurs frequently in the data; links the various data together; explains much of the variation in the data; has implications for a more general or formal theory; moves the theory forward; and permits maximum variation in analysis.[32] Interaction is one of two core variables that emerged as central to the understanding of nursing home care quality. Participants said:

> Staff interaction is the most important thing in the whole nursing home. If I were a resident I could live with a little egg on my shirt if I knew that the staff really care about me, like me, and interact with me.

> Staff really seem like they are listening to what residents say to them.

> Staff touch or put their arms around someone who is distraught and resident allows staff to touch them and it seems to help.

> Staff really interact with residents and residents are not just sitting in hallways with people ignoring them.

Odor was the other core variable that was discussed in detail by every group. Participants said:

> Odors are the pivotal thing to decide when you walk in if you could stay here or not.

> I associate the odors of urine and stool with poor quality because there is generally some *reason* that the odors are strong; residents are incontinent, they are not being toileted, they are not being changed when they are incontinent, they are not getting appropriate hygienic care.

> Odors are strongly correlated with care issues. If there are strong odors the staff are not doing the care properly.

> When I go into facilities *without* these strong odors, I find that residents are toileted, they are not lying in stool or a wet bed or wet diapers.
> There should be the absence of odors of urine, stool, or disinfectants.

> Some places are just unbearable that they smell so bad; I know when I walk in that I cannot imagine having to live there.

Using the core variables, related concepts, and detailed descriptions from participants, three models emerged from the analysis: (1) a model of a nursing home with good quality care, (2) a model of a nursing home with poor quality care, and (3) a multidimensional model of nursing home care quality.

MODELS OF NURSING HOMES WITH GOOD AND POOR QUALITY CARE

The models of a nursing home with good quality care and a nursing home with poor quality care are illustrated in Figures 1 and 2. The models contain five components that illustrate the differences in good and poor quality care homes: central focus, staff, milieu, care and treatment, and environment.

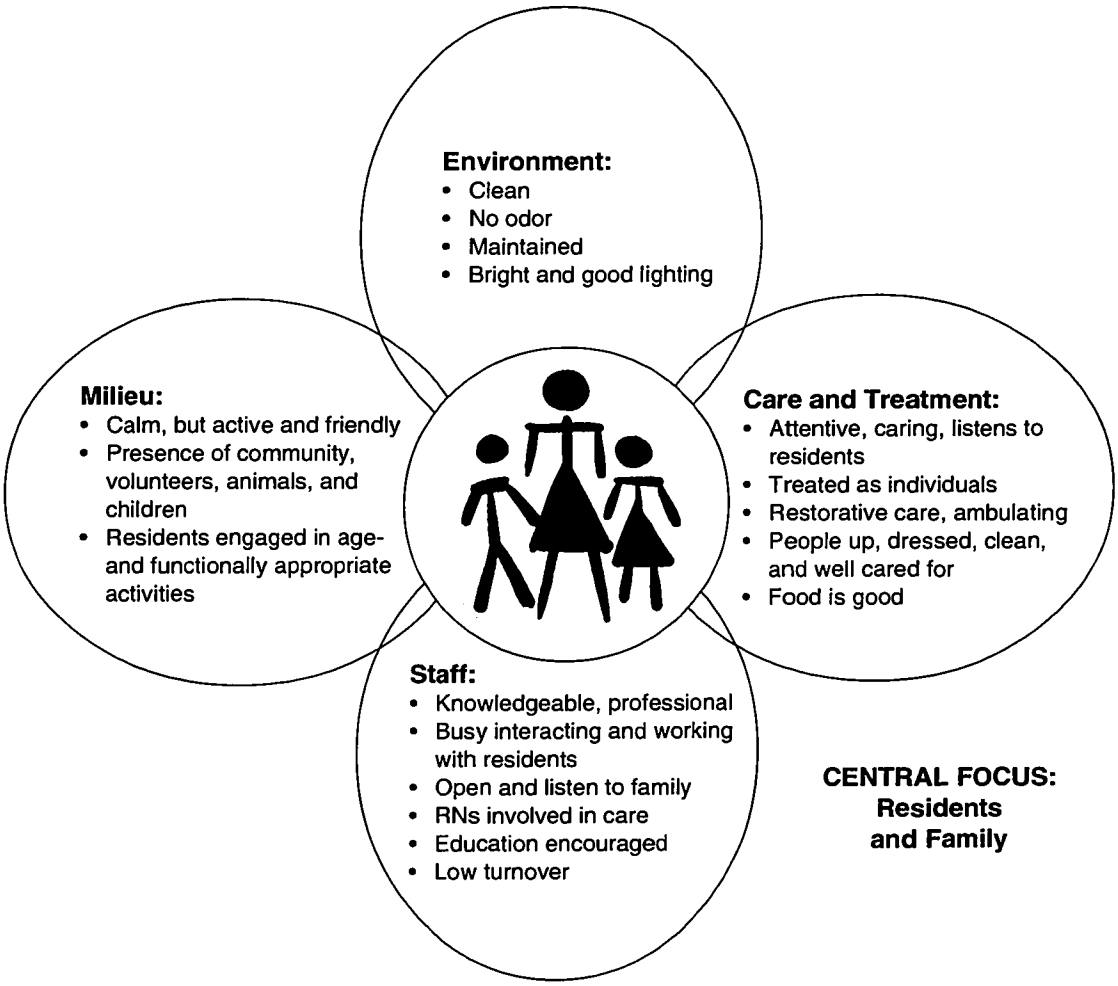

Figure 1. Model of nursing home with good quality care.

The *central focus* of the nursing home with good quality care is clearly the residents and their families. Participants agreed:

> Good facilities have a philosophy that permeates from the administrative staff that the focus of care is on the residents and their families and that the staff are expected to provide appropriate care in a caring way to meet individualized needs.

The central focus of the nursing home with poor quality care is not clear. Perhaps it is survival of the agency, a leadership void, or a focus on financial gain without regard for or understanding of services needed by residents. Participants explained:

> They just don't treat their residents well. It seems like they really didn't care about them. It was just their job and they were there to put in their time and so what if this person falls and breaks a hip or something (pause), it's just money, not a person. They treated residents as one big mass instead of this is a person, this is a person, and this is a person. They did the same thing for every resident and they didn't treat them as individuals.

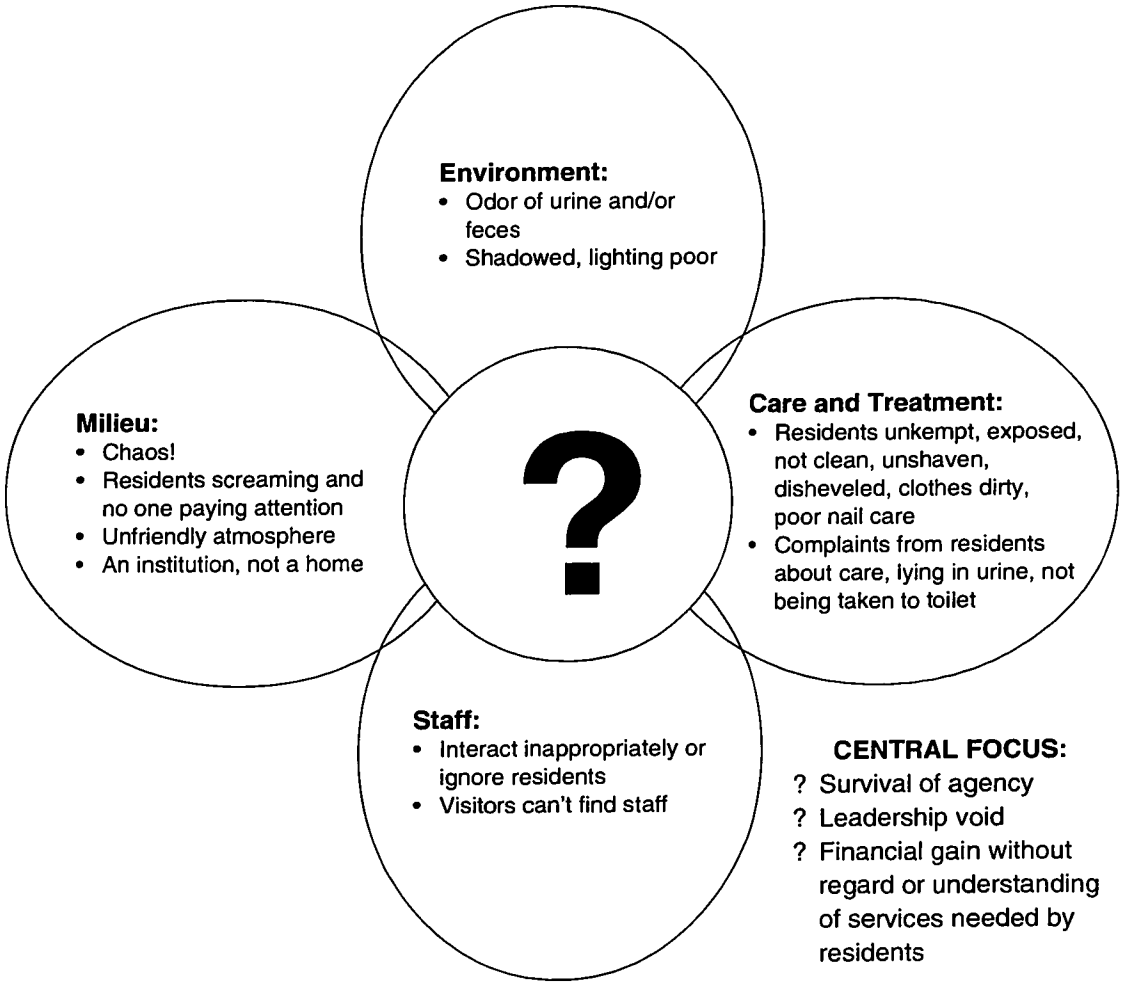

Figure 2. Model of nursing home with poor quality care.

The *staff* component contains the important core variable of interaction. In nursing homes with good quality care, staff interact positively with residents and help residents meet their needs. Staff appear knowledgeable and registered nurses (RNs) are involved in resident care delivery. In homes with poor quality care, the active involvement of staff in the care of residents is not so apparent. Visitors often complain they cannot find staff to help them or residents they are visiting. Staff ignore or interact inappropriately with residents. For example, one participant explained:

> In bad nursing homes, staff do not talk to the residents or treat them as people; they just do what they have to do to them and get it over with so they get their work done; it feels like they are on a production line, not like they are caring for people.

> In the good nursing home I am thinking about, every last one of the staff members were involved with each resident they were working with, whoever was coming by, whoever was crying out and asking for something.

The contrast with *milieu* is strong. Poor quality homes are described as CHAOS! with residents screaming and no one paying any attention to them. The unfriendly atmosphere makes the agency feel like an institution, not a home. On the other hand, facilities characterized as having good quality care were described as calm, but active friendly places where people live; there is a sense that the place is home to the people who live there. Residents, staff, and volunteers are engaged in activities that are appropriate for age, function, and resident interest. Participants explained:

> The good one I am thinking about had an air of dignity about it. It had a calm, serene kind of feel to it and just felt like a place that would be nice, comforting, and relaxing. Staff came up to you and asked if they could help you or direct you to certain places. There wasn't a look of indifference on people's faces, everyone looked like they cared.

> It didn't feel like a nursing home, it was an active place where people lived. A lot of vital activity was going on. There were volunteers everywhere helping out in the facility. Everyone was acting as if everyone was still fully human rather than some kind of vegetable or patient. They were people living in a community.

Care and treatment is an important category. Residents are living in nursing homes because they need care and treatment. The manner and extent to which care and treatment are carried out distinguish good and poor quality homes. In homes with good quality care, residents are up, dressed, clean, and look well cared for. They are treated attentively and as individuals. It is apparent that residents are listened to and cared for in a caring way. They receive active restorative care. In homes with poor quality care, residents are unkempt, exposed at times, not clean, unshaven, and may be wearing dirty clothes. Hygiene needs are not consistently met. Residents are not toileted at regular and frequent intervals, are frequently incontinent, and may lie in urine-soaked bed linens or adult diapers for hours. One participant explained:

> In the good home, the residents were all dressed nice and looked well kept. Residents' hair was set, people were up, many of them were ambulating. There were restorative care activities taking place, you could see them . . . Family members were encouraged to eat with the residents and the food smelled and looked good.

The environment of good quality homes is described as clean, well maintained, and odor-free. The home appears bright, airy, and well lighted.

The *environment* component contains the other important core variable from the data analysis: odor. Pervasive urine or feces odor is a key descriptor of the home with poor quality care. Additionally, these homes are characterized as heavily shadowed because of poor lighting. The environment of good quality homes is described as clean, well-maintained, and odor-free. The home appears bright, airy, and well lighted.

MULTIDIMENSIONAL MODEL OF QUALITY IN NURSING HOME CARE

The third model that emerged from the inductive analysis is a more complete identification of the dimensions of nursing home care quality. The dimensions are accompanied by a list of potential quality measures that are derived from the model and suggested by the focus group participants. Although the contrasting models of homes with good and poor quality care explain many of the features of care quality, it was apparent from the data that additional features needed to be explained to more fully describe the complex

nature of nursing home care quality. Therefore, a multidimensional model of nursing home care quality was constructed that incorporates the features in the contrasting models and other features from the data.

The seven dimensions of the multidimensional model of nursing home care quality are: central focus, interaction, milieu, environment, individualized care, staff, and safety. The model is presented in a sphere with explanatory arrows and sample descriptive statements to illustrate the multidimensional nature (see Figure 3).

In this model, *central focus* is foundational to care quality (see box, "Dimensions of the Multidimensional Model of Quality in Nursing Home Care"). It must be very clear to all who work in the nursing home and all who come in contact with the nursing home that the central focus of the home is residents and their families. Participants were clear that the reason the agency exists is to serve residents and their families and meet resident needs. That fundamental reason must be clear to everyone and must be understood by every staff member.

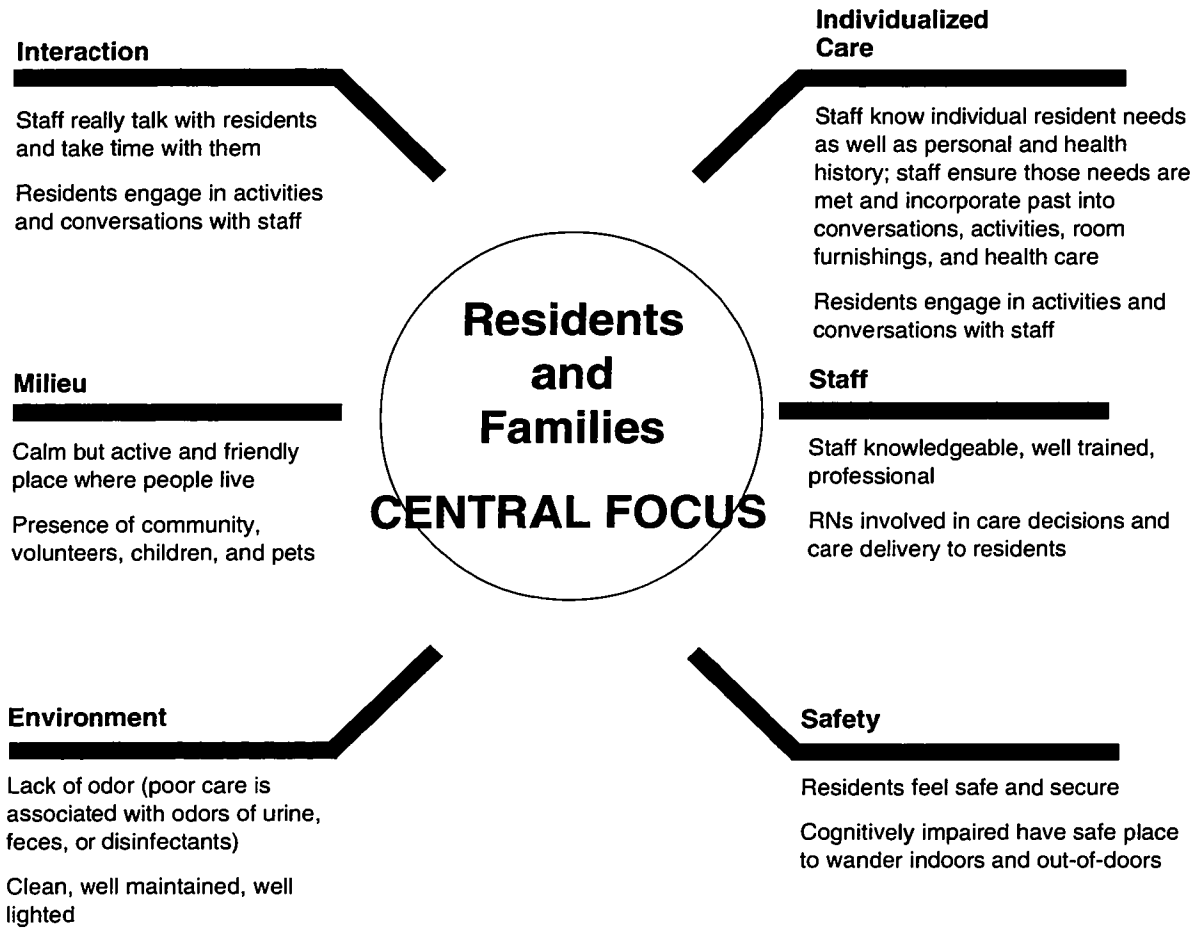

Figure 3. Dimensions of quality in nursing home care.

Dimensions of the Multidimensional Model of Quality in Nursing Home Care: Explanatory Descriptive Statements of Participants

Central focus
- residents and their families are the central focus of the agency
- the reason the agency exists is to serve residents and families and meet resident needs

Interaction
- staff attentive, caring, and listen to what residents say
- staff really talk with residents and take time with them
- staff and residents smile at each other
- residents accept physical touch
- staff prompt and responsive to resident and family needs
- residents engage in activities and conversations with staff
- staff talk with cognitively impaired residents; they don't ignore them
- absence of:
  - talking down to residents
  - talking as if residents are not present
  - referring to residents as "Baby, Sugar, Honey, Grandma"
  - pushing residents to an area to get them out of the way
  - ignoring residents calling out or yelling

Milieu
- calm but active and friendly place where people live
- presence of community, volunteers, and children
- plants, dogs, cats, birds
- lots of activities

Environment
- lack of odor (poor care is associated with odors of urine, feces, or disinfectants)
- rooms personalized for each resident with items from his or her past
- space for privacy
- clean and well maintained
- grounds, furniture, and floors in good condition
- good lighting
- windows for residents to view outside
- space for residents to be outdoors

Individualized care
- active, restorative care; residents ambulating
- residents are up, dressed, clean, and look well cared for
- consistent staff care for residents
- staff know residents well so if something is medically wrong they detect early signs and get treatment initiated
- staff know individual resident needs and personal and health history; staff ensure those needs are met and incorporate past into conversations, activities, room furnishings, and health care
- residents and families involved and have a voice in care
- families feel comfortable talking with staff about care and concerns
- residents involved in activities that are appropriate for age, function, and individual interest
- food is good and attention is paid to individual preferences

Staff
- staff knowledgeable, well trained, professional
- RNs involved in care decisions and care delivery to residents
- education encouraged so nursing assistants become LPNs or RNs and LPNs become RNs
- physicians and advanced practice nurses are involved in care decisions and help improve the clinical skills of staff
- staff education and staffing levels are related to resident outcomes—better staff, better care, better outcomes
- enough staff are present to provide individualized care
- low staff turnover; without stable staff cannot have quality care
- appropriate interaction with residents and families can be taught and role modeled for staff

Safety
- residents and families have confidence residents will be cared for 24 hours a day
- residents feel safe and secure
- cognitively impaired have safe place to wander indoors and out-of-doors
- safe place for residents who choose to be out-of-doors

In this model, interaction and the quality and focus of the interactions between residents and staff emerged as a core variable and the primary dimension of quality in nursing home care. For example, participants explained that it is essential that staff be attentive and caring with residents and truly listen to what residents say, that staff really talk with residents and take time with them, and that residents accept and respond positively to touch initiated by staff. Explanatory descriptive statements of participants from the data are listed in the boxes. It is important that residents, even those who are cognitively impaired, are engaged in activities and conversations with staff. Ignoring or dismissing cognitively impaired residents or treating them in a less than humane and respectful way is perceived as poor quality care.

Not seeing or hearing some types of interactions is as important as what is seen or heard. Participants noted that the absence of talking down to residents, talking as if residents are not present, ignoring residents calling out or yelling, and not referring to residents as "Baby, Sugar, Honey, or Grandma" is equally important to care quality in a nursing home.

Milieu refers to the overall setting and sensations of the nursing home. In a quality facility, it feels calm, but it is an active and friendly place where people live. There is a presence of community, volunteers, and children. There are plants, dogs, cats, birds, and other things that are active and alive. There are lots of activities. On the other hand, there is absence of residents calling out or yelling and no one paying attention to them or trying to help or engage them in conversation or activities.

Environment in a nursing home with quality care has many important components. Residents' rooms are personalized with items from the past and present that are meaningful to each resident. Perhaps a favorite chair, dresser, or other furniture is used instead of institutional furniture. Personal items, such as pictures or other mementos, decorate and personalize each room. There are spaces for privacy; places where a resident and family or friend can visit comfortably or persons can spend time alone if they choose. The environment is clean and well maintained; the grounds, furniture, and floors are in good condition. There is good lighting so visibility is good and shadows are minimized. There are windows for residents to view the outside and space for residents to be outdoors.

Odor is an extremely important aspect of the environment. It emerged as the second core variable in the analysis. Virtually every participant talked about odor, or the lack of odor. The lack of unpleasant odors and the presence of pleasant smells are strongly associated with quality. Participants clearly associated poor care with the odors of urine, feces, or disinfectants. Odors accompany not bathing residents well or frequently enough, not toileting residents, and not changing clothes and linens frequently enough. In the participants' opinion, these odors are not dissipated by disinfectants and chemicals, although some facilities try to cover the odors rather than deal with the root cause: poor care.

The perspectives of the participants are consistent with the observations made by Keyser-Jones.[33,34] Sights, sounds, and smells of the environment are described as they affect the quality of care in nursing homes. Many of the descriptors of Keyser-Jones are identical or very similar to the statements of the participants in this study.

Individualized care requires that staff know residents well and plan to meet individual needs. There should be visible active restorative care taking place in the facility. Residents who are able should be ambulating; those who can no longer ambulate should have other active restorative interventions and be encouraged to improve their remain-

ing abilities. When walking about the facility, one should observe that residents are up, dressed, clean, and look well cared for.

Individualized care also means that staff know each resident well so if something is medically wrong, they detect early signs and implement treatment. Staff should be able to detect early signs that a resident's condition is changing. They should conscientiously pursue relaying changes in medical conditions and ensure that residents obtain the treatment they need. For this to happen successfully, it is essential that consistent staff care for residents. Consistent staff can detect the subtle changes that often indicate something is medically wrong.

In facilities delivering high-quality care, staff know individual resident needs and each person's history. They make sure individual needs are met and incorporate each person's past into conversations, activities, and room furnishings. When observing staff talking with a resident, references to unique features of the resident's past can be heard. Residents are involved in activities of interest to them. If asked, residents who can respond can explain that they choose to be involved in the activity. If they cannot respond, the activity should appear to be appropriate to age, function, and restoration potential.

Other features of individualized care include that residents and families are involved and have a voice in care. If asked, residents and families can relate how they are involved in care and that they have choices. Food is critically important. If asked, residents respond that the food is good and that attention is paid to individual preferences. Those residents who cannot respond should eat the food offered and appear to be enjoying meals. The food should appear appetizing.

Staff is the next dimension of quality in nursing home care. It is important that staff be knowledgeable, well trained, and professional. Participants were clear that registered nurses (RNs) must be involved in care decisions and care delivery. Attempting to deliver complex care to frail, chronically ill nursing home residents without the active involvement of RNs in care delivery places residents at risk. Care delivery in nursing homes is a team effort. Much of the direct care is provided by nursing assistants and licensed practical nurses (LPNs). However, participants were clear that RNs must be actively involved in meeting individual health care and personal needs. From their perspectives, the active involvement of RNs in care delivery is critical to positive resident outcomes.

Their perspectives have support in the literature. Some studies suggest that increased registered nurse staffing improves the quality of nursing home care.[6,17,35–37] A significant and positive relationship between nursing home quality and the ratio of RN hours to LPN hours was identified in data from 455 Medicare-certified skilled nursing facilities in California.[35] For every 25 percent increase in the ratio of RN to LPN hours, there was a decrease of 0.53% in the number of health-related deficiencies in the facilities. Similarly, in a cohort study of 390 veterans RN staffing was one of four nursing home quality indices significantly and inversely related to mortality.[6] Higher levels of RN staffing were associated with better care quality as measured by an index of outcome measures of decubitus ulcer development, catheterization, urinary tract infections, and rates of antibiotic use.[36] Spector and Takada[37] found that higher staff levels and lower RN turnover were related to functional improvement in residents. The Institute of Medicine Committee on the Adequacy of Nurse Staffing in Hospitals and Nursing Homes[17] concludes from their extensive review of research that RN coverage in nursing homes is essential to quality of care.

According to participants, education is encouraged in quality facilities so it is com-

mon for nursing assistants to become LPNs, or RNs, and for LPNs to continue their education and become RNs. It is an environment of learning and continuing staff education is encouraged. Again, the perspectives of participants have support in the literature. Organizational researchers have known for many years that work environments must challenge workers to contribute to the mission of the organization and continuously grow and learn.[38-41]

Participants believe that staff education and staffing levels are related to resident outcomes. Clearly, if staff are stretched to the limit, care suffers. To ensure that staff know each resident well, it is essential to have low staff turnover. Without stable staff, individualized high-quality care cannot be achieved. The literature supports their beliefs. In an analysis of 2,500 residents in 80 Rhode Island nursing homes, higher staff levels and lower RN turnover were related to functional improvement.[37] In a later analysis of data from the National Medical Expenditure Survey, Spector[42] found that having a greater number of RNs was associated with fewer deaths annually and having more LPNs was associated with improvement in activities of daily living. In a recent study of staffing in Maryland nursing facilities, as the ratio of total staffing increased a quality of care index increased and a survey deficiency index decreased.[43] In another study comparing three nursing homes, residents on units with a higher staffing ratio of licensed personnel had fewer instances of behavior disturbances.[44] Staffing makes a difference for residents and their outcomes.

Another aspect of the staff dimension of quality nursing home care that was made clear by study participants is that appropriate interaction with residents and families can be taught. Administrators and others in leadership and education positions in each nursing home can teach courtesy and guest relations and insist that staff behave in courteous and caring ways. Staff will respond to the challenge if leaders explain, teach, and role model that the central focus of the facility is high-quality care; that residents and families are the reason they (the staff) are there; and that all staff (including themselves) are expected to behave respectfully, courteously, and appropriately. Examples of the way staff are to behave and examples of inappropriate interactions can be role modeled in training sessions so it is clear what behaviors should and should not be used with residents and families.

The last dimension of quality in nursing home care is *safety*. Residents and families need to have confidence that residents will be cared for 24 hours a day, that staff will assume responsibility for helping each resident, and that staff will consistently meet residents' needs. Families need to feel that they can talk with staff about any concerns they have about the care or environment. Residents need to feel safe, secure, and free to talk to staff and get help when they need it. They need to be free from fear of harm from staff or other residents. In a quality nursing home environment, the cognitively impaired have a safe place to wander, ideally where they can also wander safely and enjoy the out-of-doors.

QUALITY MEASURES

The multidimensional model of nursing home care quality provides direction for quality measures. The box, "Potential Measures of the Multidimensional Model of Quality in Nursing Home Care" is a list of examples of potential measures derived directly from the model and from participant suggestions. The dimension that is tapped is noted following each potential measure; whether the item is

measuring structure, process, or outcome is also indicated. It is important to note that the potential measures include structure, process, and outcome. Process measures are particularly emphasized. This is not surprising when one considers that care delivery is heavily dependent on processes carried out by nursing home staff.

The first ten on the list could be measured by making observations in nursing homes. The last five would require additional data collection from facilities. Comparative facility outcomes for care problems such as incontinence, skin breakdown, declining activities of daily living, restraint use, and medication use could be analyzed from assessment data collected by facilities and submitted for statewide or nationwide analysis. Results of a standardized, benchmarked resident and family satisfaction survey could potentially tap all dimensions of the model of nursing home care quality.

IMPLICATIONS AND FUTURE DIRECTIONS

Understanding the dimensions of quality nursing home care is an important step toward achieving quality. Much of what was learned in the study would seem to be achievable. Nursing home care quality is multidimensional and can be explained in a conceptual model. To pursue quality, the many dimensions must be of primary concern to the nursing home. Central focus, interaction, milieu, individualized care, staff, environment, lack of odor, and safety all must be considered seriously and resources must be committed to operationalizing each dimension. Paying attention to these dimensions, making it clear that the central focus of the agency is residents and families, and committing to the pursuit of nursing home care quality is sure to improve the quality of care residents receive.

Potential Measures of the Multidimensional Model of Quality in Nursing Home Care

- rooms personalized for each resident with items from his or her past (environment, structure)
- grounds, furniture, and floors clean and in good condition (environment, process)
- lack of odor (environment, process)
- presence of community, volunteers, and children (milieu, process)
- staff and residents smile at each other (interaction, process)
- residents engaged in activities and conversations with staff (interaction, process)
- active restorative care, ambulating (individualized care, process, outcome)
- residents are up, dressed, clean, and look well cared for (individualized care, process)
- residents involved in activities of choice, age and functionally appropriate (individualized care, process)
- cognitively impaired have safe place to wander (safety, structure)
- RNs involved in care decisions and care delivery to residents (staff, structure, process)
- consistent staff and low staff turnover (staff, structure, process)
- physicians and advanced practice nurses involved in care decisions and help improve the clinical skills of staff (staff, structure, process)
- comparative facility outcomes for care problems such as incontinence, skin breakdown, declining activities of daily living, restraint use, medication use (individualized care, outcome)
- standardized benchmarked resident/family satisfaction survey (potentially all dimensions)

We are further developing and testing the model using participant observation methods in nursing homes. We are also testing an instrument based on the model to observe and score the dimensions of nursing home care quality. Validity and reliability studies using the instrument are in process. Preliminary results are encouraging.

An important future step is to interview residents and families about their perspective of nursing home care quality. Families have expressed interest in sharing their points of view, and the focus group method will most likely be used. Some residents may find participating in a focus group too physically demanding, so individual interview may be necessary.

Another step being considered is to conduct homogeneous focus groups of nursing assistants, the primary provider of direct care services in nursing homes. While some of the participants in this study had experience as nursing assistants, groups conducted only with nursing assistants may prove insightful. Their perspectives explained in groups with their peers are likely to further illuminate the care quality model.

With input from families, residents, and more nursing assistants it is likely that the model will be revised and refined. Importantly, we may find the model may also be helpful for potential residents and their family members to use when selecting a nursing facility. Instruments developed from the multiple dimensions of the model could guide families to assess areas they might not have considered. More informed consumers and their families can only help improve care quality in nursing homes.

Providers have a challenging task of providing a positive environment and effective care for nursing home residents. Our model encompasses broad categories of care delivery that make nursing homes pleasant or horrible places to be. While the model primarily focuses on care processes, it is complementary to other structure and outcome measures developed for nursing home care.[2,9,18] The model, and instruments derived from it, can help us interpret the multidimensional concept of nursing home care quality and the variety of approaches to measuring it. Strikingly, participants did not primarily identify clinical outcomes as measures of quality. This does not mean they are not important. However, it identifies that complementary approaches to ensuring quality are needed to fully interpret and use outcome-based measures.

Just as much attention is needed to improve the quality of care provided in nursing homes,[16] focusing effort on developing a conceptual model of nursing home care quality is important. A well-developed conceptual model can guide research and instrument development. Model development is a dynamic, never-ending process. The model presented is a current illustration of the important multidimensional nature of nursing home care quality. As our understanding of quality advances, new or additional features of the model may emerge. As features emerge, it will be necessary to refine the model to ensure it accurately reflects the complex multidimensional nature of nursing home care quality. Indeed, the pursuit of quality and our understanding of it is dynamic and continuous.

REFERENCES

1. Atchley, S.J. "A Time-Ordered, Systems Approach to Quality Assurance in Long-Term Care." *Journal of Applied Gerontology* 10, no. 1 (1991): 19–34.

2. Gustafson, D.H. et al. "The Quality Assessment Index (QAI) for Measuring Nursing Home Quality." *Health Services Research* 25, no. 1(1990):96–127.

3. Gustafson, D.H. et al. "The Quality Assessment Index (QAI) for Measuring Nursing Home Quality." *Health Services Research* 25, no. 1(1990):96–127.
4. Miller, T.V., and Rantz, M.J. *Quality Assurance for Long Term Care: Guidelines and Procedures for Monitoring Practice.* Gaithersburg, MD: Aspen Publishers, 1991.
5. Sainfort, F. et al. "A First Step in Total Quality Management of Nursing Facility Care: Development of an Empirical Causal Model of Structure, Process, and Outcome Dimensions." *American College of Medical Quality* 9, no. 2(1994):74–86.
6. Braun, B.J. "The Effect of Nursing Home Quality on Patient Outcome." *Journal of the American Geriatrics Society* 39, (1991): 329–338.
7. Dimant, J. "From Quality Assurance to Quality Management in Long Term Care." *Quality Review Bulletin* 17, no. 7 (1991): 207–215.
8. Phillips, C. J. "Developing a Method of Assessing Quality of Care in Nursing Homes, Using Key Indicators and Population Norms." *Journal of Aging and Health* 3, no. 3 (1991): 407–422.
9. Zinn, J.S. et al. "The Use of Standardized Indicators as Quality Improvement Tools: An Application in Pennsylvania Nursing Homes." *American College of Medical Quality* 8, no. 2 (1993): 72–78.
10. Glass, A.P. "Nursing Home Quality: A Framework for Analysis." *Journal of Applied Gerontology* 10, no. 1 (1991): 5–18.
11. Kane, R.L. et al. "Do Rehabilitative Nursing Homes Improve the Outcomes of Care?" *Journal of the American Geriatrics Society* 44, no. 5 (1996): 545–554.
12. Vladeck, B.C. et al. "The Changing Face of Long-Term Care." *Health Care Financing Review* 14, no. 4 (1993): 5–23.
13. Donabedian, A. "Some Issues in Evaluating the Quality of Nursing Care." *American Journal of Public Health* 59, no. 10 (1969): 1833–1836.
14. Donabedian, A. "The Quality of Care: How Can It Be Assessed?" *Journal of the American Medical Association* 260, no. 12 (1988): 1743–1748.
15. Committee on Nursing Home Regulation, Institute of Medicine. *Improving the Quality of Care in Nursing Homes* (IOM-95-10). Washington, DC: National Academy Press, 1986.
16. Committee on the Adequacy of Nurse Staffing in Hospitals and Nursing Homes, Institute of Medicine. *Nursing Staff in Hospitals and Nursing Homes.* Washington, DC: National Academy Press, 1996.
17. Kane, R.L. " Special Communication: Improving the Quality of Long-Term Care." *Journal of the American Medical Association* 273, no. 17 (1995): 1376–1380.
18. Gagel, B.J. "Health Care Quality Improvement Program: A New Approach." *Health Care Financing Review* 16, no. 4 (1995): 15–23.
19. Jencks, S.F. "Measuring Quality of Care under Medicare and Medicaid." *Health Care Financing Review* 16, no. 4(1995):39–54.
20. Kane, R.A. "Assessing Quality in Nursing Homes." *Clinics in Geriatric Medicine* 4, no. 3 (1988): 655–666.
21. Zimmerman, D.R. et al. "Development and Testing of Nursing Home Quality Indicators." *Health Care Financing Review* 16, no. 4 (1995): 107–127.
22. Sainfort, F. et al. "Conceptual and Methodological Sources of Variation in the Measurement of Nursing Facility Quality: An Evaluation of 24 Models and an Empirical Study." *Medical Care Research and Review* 52, no. 1 (1995): 60–87.
23. Krueger, R.A. *Focus Groups: A Practical Guide for Applied Research.* Newbury Park, CA: Sage Publications, 1988.
24. Kingry, M.J. et al. "Focus Groups: A Research Technique for Nursing." *Nursing Research* 39, no. 2 (1990): 124–125.
25. DesRosier, M.B., and Zellers, K.C. Focus Groups: A Program Planning Technique. *Journal of Nursing Administration* 19, no. 3 (1989): 20–25.
26. Gelb, G.M., and Gelb, B.D. "Physicians and Hospital Decision Making: A Two-Stage Technique for Improvement." *Hospital & Health Services Administration* 32, no. 2 (1987): 139–149.
27. Basch, C.E. "Focus Group Interview: An Underutilized Research Technique for Improving Theory and Practice in Health Education." *Health Education Quarterly* 14, no. 4 (1987): 411–448.
28. Rantz, M.J., and McShane, R.E. "Nursing Home Staff Perception of Behavior Disturbance of Confused Residents." *Applied Nursing Research* 7, no. 3 (1994): 132–140.
29. Rantz, M.J., and McShane, R.E. "Nursing Interventions for Chronically Confused Nursing Home Residents." *Geriatric Nursing* 16, no. 1 (1995): 22–27.

30. McShane, R.E., and Rantz, M.J. "Focus Groups: A Methodology for Nursing Research." *Journal of Nursing*, in press.
31. Lincoln, Y.S., and Guba, E.G. *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications, 1985.
32. Munhall, P.L., and Boyd, C.O. *Nursing Research: A Qualitative Perspective*. New York: National League for Nursing, 1993.
33. Keyser-Jones, J.S. "The Impact of the Environment on the Quality of Care in Nursing Homes: A Social-Psychological Perspective." *Holistic Nursing Practice* 5, no. 3 (1990): 29–38.
34. Keyser-Jones, J. "The Environment and Quality of Life in Long-Term Care Institutions." *Nursing & Health Care* 10, no. 3 (1991): 125–130.
35. Munroe, D. "The Influence of Registered Nurse Staffing on the Quality of Nursing Home Care." *Research in Nursing and Health* 13 (1990): 263–270.
36. Cherry, R. L. "Agents of Nursing Home Quality of Care: Ombudsmen and Staff Ratios Revisited." *The Gerontologist* 31, no. 3 (1991): 302–308.
37. Spector, W.D., and Takada, H.A. "Characteristics of Nursing Homes That Affect Resident Outcomes." *Journal of Aging and Health* 3, no. 4 (1991): 427–454.
38. Peters, T. J., and Waterman, R.H. *In Search of Excellence*. New York, Harper & Row: 1982.
39. Peters, T., and Austin, N. *A Passion for Excellence*. New York, Randon House: 1985.
40. Senge, P. *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Currency Doubleday, 1990.
41. Senge, P. et al. *Fifth Discipline Field Book: Strategies and Tools for Building Learning Organizations*. New York: Currency Doubleday, 1994.
42. Spector, W.D. Presentation at special session on nursing home staffing and quality of care. Gerontological Society of America, Atlanta, GA, 1994.
43. Johnson-Pawlson, J., and Infeld, D. L. "Nurse Staffing and Quality of Care in Nursing Facilities." *Journal of Gerontological Nursing* 22, no. 8 (1996): 36–45.
44. Kolanowski, A. et al. "Contextual Factors Associated with Disturbing Behaviors in Institutionalized Elders." *Nursing Research* 43, no. 2 (1994): 73–79.