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Quality of Life in Assisted Living Homes: A Multidimensional Analysis

Judith M. Mitchell and Bryan J. Kemp

Rehabilitation, Research and Training Center on Aging, Rancho Los Amigos Medical Center, University of Southern California, Downey.

This study examined the impact of four domains upon the quality of life (QOL) of senior residents living in assisted living homes: (a) demographic characteristics and health status, (b) social involvement, (c) facility characteristics, and (d) the social climate. Participants were 201 residents with functional impairments living in 55 different assisted living facilities in California. QOL was measured with three scales of depression, life satisfaction, and facility satisfaction. Bivariate correlations and ANOVAs found significant relations between at least one of the QOL measures and age, health status, social and family involvement measures, facility characteristics, and social climate measures. Social climate measures of cohesion, conflict, and independence had the strongest zero-order correlations. Regression analyses for the three QOL measures found cohesion to be the strongest predictor in all three regressions. Other QOL predictors in the regression analyses were fewer health conditions, participation in social activities, monthly family contact, and an environment low in conflict. Findings suggest that assisted living homes can improve resident QOL by creating a cohesive social environment, and encouraging social participation and family involvement.

SENIOR adults have become one of the faster growing age segments in our society, in part due to improved medical care and an increase in life expectancy. In 1990, 12.7% of the U.S. population was over age 65, and by 2020 this will increase to 18% (American Association of Retired Persons [AARP], 1991). However, disability also increases with age. People older than 75 have a disability rate eight times that of those age 45 and younger, and 40% of all persons with a disability are now over the age of 60 (Wedgewood, 1985). In contrast to disability among younger adults, disability among older adults tends to result from multiple medical diagnoses and can lead to many functional limitations.

Older adults with disabilities are likely to need long-term health care services to compensate for their functional impairments and help maintain psychosocial well-being. Residential care facilities or assisted living homes are one choice that can prevent or delay nursing home placement of disabled persons when in-home help is no longer sufficient.

Residential care facilities for the elderly (RCFEs) are known by about 20 different names throughout the United States, such as adult care homes, adult foster care, personal care homes (AARP, 1993; Mollica & Snow, 1996). A comparison of 1990 and 1998 estimates of residential care homes (AARP, 1993, 1998) suggests a 37% increase in facilities within the last decade alone, with services in 1998 provided to approximately 500,000 older adults. California is one of the leading states in residential care, with about 4,090 homes serving 100,000 residents. (AARP, 1993; Mollica & Snow, 1996; Newcomer, Breuer & Zhang, 1994). Residential care homes are licensed to provide board and care, 24-hour personal supervision and assistance with activities of daily living (ADLs), medication oversight, and transportation as needed. Government regulations differentiate between levels of care provided by RCFEs and those provided by nursing homes. Nursing homes typically serve residents with ongoing medical needs and severe functional impairments; they are licensed to provide 24-hour medical care and supervision, have a registered nurse on duty at all times, and operate on a medical model.

Within the residential care field, the term *assisted living* has been applied broadly both to the residential care facilities and to a philosophy of residential care. An examination of definitions of *assisted living* by nine major organizations such as AARP and the Assisted Living Facilities Association of America (ALFAA; Lewin-VHI, 1996) suggests a general interpretation to include a philosophy that emphasizes some form of resident independence, autonomy, and privacy, and that endorses aging in place for the seniors in the facility. *Aging in place* refers to providing health and personal care to an increasingly more impaired and disabled senior population in the least-restrictive and most home-like environment possible. The residential care facilities in California vary on whether they endorse and practice an assisted living philosophy. Many residential care homes in California engage in assisted living practices such as providing private rooms and bathrooms, having unit doors that can be locked by the residents, and retaining residents who meet nursing home criteria in functional impairment (Newcomer et al., 1994). However, other homes may have room sharing without choice and do not have a written statement of resident care that emphasizes independence and privacy (Mollica & Snow, 1996).

Quality of life (QOL) has become a critically important concept for health care in recent years. QOL considerations may be used when making health decisions, and QOL indicators have been used to evaluate treatment outcomes (Ferrans, 1996). Within the assisted living field, examining QOL is relevant for several reasons. First, it is a component of the assisted living philosophy and needs to be taken into consideration when designing health care and social prac-

tices (Birren & Dieckmann, 1991; Teitelman & Priddy, 1988; Williams, 1991). Second, QOL experiences may influence the mental and physical health of seniors who are struggling with diminished control over their lives and the loss of functioning (Compton, 1989; Fawcett, Stonner, & Zepelin, 1980; Gutheil, 1991). Third, some findings suggest that seniors in structured living and institutional settings may be at risk for lower QOL, compared with seniors in the community (Grayson, Lubin, & Van Whitlock, 1995).

QOL is a multidimensional construct that has been defined and studied from a variety of different disciplines. According to Raphael (1996), there are approximately 11 different frameworks from which to examine QOL: some examples are a sociological versus psychological perspective, a quantitative versus qualitative methodology, and a social policy versus a basic research orientation. Identifying the essential components of QOL is based in part on the perspective adopted and the definition of QOL used. According to Arnold (1991), "Because there is no absolute theoretical model of what constitutes quality of life, measures must approximate our understanding of the elements of a very abstract concept."

The psychological perspective is common within the gerontological field. This perspective examines and measures QOL from the viewpoint of the individual, with social domains, health conditions, and the environment providing a context wherein the person's QOL can be understood (Raphael, 1996). Using a psychological perspective, QOL has been defined by Diener (1984) as a measure of subjective well-being, an abstract and multifaceted concept that subsumes related but structurally different concepts such as happiness and life satisfaction. Lawton (1991) has expanded the definition of QOL for older adults to a multifaceted framework that includes components of behavioral competence, such as health, function and social involvement; psychological well-being; subjective impression of QOL, such as life satisfaction; and environmental factors.

Measurement of QOL has typically included objective indicators such as income, education, marital status, and health condition, and subjective indicators such as well-being, happiness, and satisfaction. However, studies in the disability and aging literature suggest that subjective measures are more representative of QOL (Friedman, Furberg, & DeMets, 1985; Pearlman & Jonsen, 1985; Pearlman & Uhlmann, 1988; Prigatano, Wright, & Levin, 1984). According to Campbell and Rodgers (1972), objective indicators account for only 15% of the variance in individual QOL, compared with 50% attributed to subjective indicators. One exception is health status. A consistent finding among quantitative studies is the strong correlation between better health and global ratings of QOL, whether health is measured by health self-ratings (Namazi, Eckert, Kahana, & Lyon, 1989) or by functional status (Gould, 1992; Osberg, McGinnis, DeJong, & Seward, 1987).

Several books have addressed the QOL issues faced by frail older adults (Abeles, Gift, & Ory, 1994; Birren, Lubben, Rowe, & Deutchman, 1991). Some of these issues include (a) the role and support of family and friends, (b) maintaining autonomy in old age, and (c) the potential negative effect of institutionalization upon frail seniors.

Social support has been recognized as having a broad range of positive effects on both the physical and psychological well-being of older adults (Kahn, 1994). Social support may reduce the impact of stressful events such as loss of family or friends or residential relocation (Kahn, 1994), and prevent the negative impact of social isolation such as increased depression. Residential care settings can help maintain social connections for residents through social activities and encouraging visits from family and friends. Social contacts, feeling close to others, and social activities have been positively associated with QOL among seniors living in both board and care homes (Faulk, 1988; Kruzich, Clinton & Kelber, 1992) and nursing homes (Pearlman & Uhlmann, 1988).

Older adults living in residential settings may often feel a loss of autonomy, choice, and decision making (Kane, 1991; Wetle, 1991). Residential settings can restrict autonomy by routines that exist for administrative convenience, regulations designed to protect residents but that also lead to restrictions, and reduced choice in daily activities (Kane, 1991). Research by Kane and Caplan (1990) found that the areas of choice most important to seniors in nursing homes were with daily activities, such as choice of roommate, food, visiting rights, and phone privileges. Research has found autonomy to be associated with life satisfaction (Reid & Ziegler, 1980), emotional well-being (Perlmutter, Monty, & Chan, 1986), and health status (Mancini, 1980) of seniors.

Both researchers and health professionals have been concerned about the possible negative effects of residential and institutional settings upon seniors, such as isolation and increased dependence (Cohn & Sugar, 1991; Teitelman & Priddy, 1988). Some studies have found that seniors living in long-term care facilities report lower life satisfaction (Loomis & Thomas, 1991), increased depression (Grayson et al., 1995), and higher rates of mortality (Stones, Dornan, & Kozma, 1989) compared with community-dwelling seniors. However, Salamon (1987) found higher life satisfaction among frail seniors in a nursing home compared with those receiving home health care in their own homes. According to Gutheil (1991), older persons may be susceptible to either the negative or positive influence of residential care settings, in part because they may spend a lot of time in these homes, have strong reactions to them, and are more dependent on the services to meet their care needs. Model development on the role of environmental factors of senior residential facilities by Moos and Lemke (Moos & Lemke, 1984) has identified relevant environmental components to be physical and policy factors, social climate factors, and social involvement factors. Environmental studies have found senior QOL to be associated with a host of internal organizational characteristics, such as design features, comfort with the home, lower cost, and facility policies (Guthiel, 1991; Kruzich et al., 1992; Namazi et al., 1989), and external facility characteristics, such as nonprofit status and larger size (Lemke & Moos, 1986, 1989).

The purpose of this study was to examine the QOL of seniors with disabilities living in California residential care facilities. We hypothesized four different domains that would influence QOL of frail seniors: (a) patient factors of

demographics and health conditions, (b) social involvement factors of family contact and social interaction, (c) facility factors of facility characteristics, including practices that support resident autonomy, and (d) the social climate or environmental milieu. QOL was assessed by life satisfaction, depression, and facility satisfaction. Choice of the predictor domains and QOL variables were based on a review of the literature, the QOL framework by Lawton (1991), and the facility and environmental components identified by Moos and Lemke (1984).

Method

Recruitment

Facility recruitment.—Stratified random selection on two variables of bed capacity and community income level were used to select licensed RCFEs from Los Angeles and Orange Counties in California. A directory listing of all RCFEs in the two counties was provided by the California Department of Social Services and contained information on facility name, address, phone number, and bed capacity. To ensure a representative sample, RCFEs were first grouped by bed capacity into small (1–15 beds), medium (16–49 beds), or large (50–more) size homes. The assignment of range of beds into groups was based on similar bed-size classifications used by the Licensing Division of the Department of Social Services (Department of Social Services, 1993). To ensure facility selection from a variety of economic levels, the geographical locations of the facilities were grouped into two community levels of being either "below" or "at or above" the county's median family income. The income used for community level was the average family income by facility zip code from the 1990 Census.

Recruitment involved mailing an informational letter to 244 randomly selected facilities, which was followed by telephone calls to solicit participation. To meet selection criteria, facilities had to provide services to elderly residents aged 55 or older and have either all alert residents or a mixture of alert and cognitively impaired residents. Of the 244 facilities contacted, 138 were found to be ineligible to participate for the following reasons: they had gone out of business ($n = 64$), they specialized only in residents with dementia-related diagnoses ($n = 54$), the residents did not speak English ($n = 6$), they no longer served geriatric clients ($n = 8$), or other ($n = 6$). Of the remaining 106 eligible facilities, response rates were 48% ($n = 20$), 50% ($n = 14$), and 44% ($n = 16$) for large, medium, and small sizes respectively, with an overall response rate of 47%. Information about the nonrespondents was limited to that provided by the directory listing and census data. Nonrespondents did not differ from respondents in overall number of beds (respondents = 69.4, nonrespondents = 74.9) or the average yearly family income of the facilities'communities (respondents = $59,528; non-respondents = $57,858). A second recruitment wave was done to increase the number of small-size facilities; a second random sample of 230 facilities was mailed an informational letter and a self-addressed stamped postcard for interested facilities to return. An additional 5 homes were recruited. The final sample consisted of 55 facilities, divided into 20 large, 14 medium and 21 small facilities.

Resident recruitment.—Cognitively alert residents were sought to take part in a one-hour structured interview and were randomly selected from resident rosters. For logistic purposes, the facility administrators were first asked to identify the obviously cognitively impaired residents on their rosters so they would be eliminated from selection. Eliminating residents with apparent memory impairment was suggested by three facility owners/operators who functioned as advisors for this study. They believed that the participating administrators could identify obviously impaired residents accurately and were not likely to use this opportunity to remove undesirable residents from the selection rosters. To ensure uniformity of resident elimination, all administrators were given a definition of "nonalert" residents based on the Folstein Mini-Mental States Exam (MMSE; Folstein, Folstein, & McHugh, 1975). "Nonalert" residents were defined as seniors who were unable to remember three specific words after two minutes, and who were not oriented to person or place. Remaining residents were randomly selected from the roster for each of the large and medium facilities. After selection, cognitive status was reconfirmed by assessing orientation to person, place and time, and short-term memory through the use of selected questions from the MMSE (Folstein et al., 1975). Residents who were alert and agreed to participate were interviewed. Approximately five residents per facility were interviewed from the large and medium size facilities. In the small facilities, all of the residents who met the inclusion criteria and agreed to participate were included in the study. The final sample consisted of 201 participants, with 100 from large facilities, 67 from medium facilities, and 34 from small facilities.

Sample

Facility descriptive information was collected from a survey instrument filled out by the facility administrator. Resident data were collected by individual interviews conducted by the first author and three trained research assistants.

Facilities

Characteristics of the 55 participating facilities in areas of ownership, ideology, payment, services offered, administrator traits, and training were provided. Eighty-nine percent of the facilities were for-profit and 11% of the facilities were nonprofit. The main categories of ownership of for-profit facilities were 41% corporate owned or managed, 30% individually owned, 20% family or partnership owned, and 9% other. For the nonprofit facilities, all but one identified sponsoring religious organizations that were either Christian, Unitarian or Jewish foundations. Payment methods for all facilities were 45% private pay only, 53% a combination of private pay and Supplemental Security Income (SSI), and 2% all SSI. The nonprofit homes had a payment mix of 60% private pay only and 40% combined private and SSI payment. Ninety-eight percent of the facilities reported having at least one resident with cognitive impairments, with an av-

erage of 34% of residents (SD = .24) per facility having cognitive impairments. Small homes were more likely to report a higher percentage of residents with cognitive impairments (50%) than were either large (28%) or medium homes (36%). Nonprofit homes were compared with for-profit homes on variables of payment method, percentage of residents on SSI, and percentage of residents with cognitive impairments. Nonprofit homes were similar to for-profit homes in payment method and percentage of residents with cognitive impairments, but had significantly fewer residents receiving SSI ($t = 3.35$, $p < .01$; nonprofit = 6%, for-profit = 25%).

The predominant services offered by the facilitates were medication management (100%) and assistance with activities of daily living (ADLs) of bathing or showering (100%), dressing (98%), bathroom care (98%), incontinence care (96%), ambulation or wheelchair assistance (90%), bed or chair transfers (89%), and transportation (80%).

Operator/administrator traits were predominantly female (71%), with an average age of 48 (SD = 9.1). Eighteen percent completed 18% high school and 57% had college (AA or BA) degrees. Twelve percent had a nursing background. Staff administrators had worked at the current facility for an average of 8 years (SD = 6.4) with 14 years (SD = 8.5) of experience in the field. Staff training was provided by more than 90% of the facilities in areas of CPR (94%), chart and record keeping (96%), medication management (98%), behavioral problems management (96%), medical conditions management (94%), management of residents with memory problems (90%), and fire safety (100%).

To determine sample representativeness, descriptive information of this sample was compared with a California statewide survey of facility and resident characteristics of residential care homes (Newcomer et al., 1994). The survey data were obtained from a randomly selected sample of 384 facilities drawn from a database of 4,317 licensed California facilities. Our facility and staff characteristics were similar to those reported by Newcomer and colleagues, suggesting that our sample is reasonably representative of facilities in California. Their results indicated that RCFEs within California are predominantly private for-profit operations, (86%). A majority of facilities had at least one resident with memory problems (ranging from 60% to 100%), with mean percentage of memory-impaired residents ranging from 17% to 41% depending on facility size. Between 53% and 76% of their sample facilities had a payment mix of both private pay and SSI residents. Their administrator characteristics were similar to ours, with a majority reporting a college education (ranging from 56% to 65%) and a smaller percentage having a nursing background (ranging from 9% to 18%). Facility services offered were also congruent with our sample, with the predominant services being medication supervision (95%–100%), personal care (93%–100%), and transportation (86%–100%).

Participants

The demographics for the participant sample were similar to those reported by Newcomer and colleagues (1994). Demographics of the 201 sampled residents were 74% female, 96% non-Hispanic White, and 69% widowed. The average age was 81 (SD = 9.6, range = 56–100), and the average educational level was 12.5 years (SD = 2.6, range = 6–20). Residents reported having an average of four chronic health conditions (SD = 1.5, range = 1–10), and 33% used a wheelchair either in the home or in the community. Seventy percent received assistance with ADLs, and 100% received assistance with instrumental activities of daily living (IADLs). Participants reported dependency in an average of 1.6 (SD = 1.64) out of 7 ADLs, and 5.2 (SD = 1.03) out of 6 IADLs. Eighteen percent received routine nursing care, such as insulin injections and blood sugar and blood pressure checks. Twenty-one percent were dependent in 3 or more ADLS, with functional limitations similar to those found among nursing home residents. Data by Newcomer and colleagues (1994) and ALFAA (1993) both report similar findings in ADL dependency, with 21% to 40% of RCFE residents in the Newcomer study having 3 or more ADL limitations, and residents reporting an average of 3.1 ADL deficiencies in the ALFAA study. Participants with higher levels of dependency in ADLs and IADLs tended to be found in the smaller size facilities. No other demographic differences existed by facility size. For nonprofit facilities, the participating residents did not differ in impairment levels in ADLs, IADLs, chronic health conditions, or family contact compared with those in for-profit facilities, but the nonprofit residents were slightly older ($t = 2.6$, $p < .01$) and more educated ($t = 2.5$, $p < .01$).

Measures

Three QOL measures were used for this study: life satisfaction measured by the Life Satisfaction Index A, depression measured by the Older Adult Health and Mood Questionnaire, and satisfaction with the facility.

The *Life Satisfaction Index A* (LSIA; Neugarten, Havighurst, & Tobin, 1961) is 20-item scale designed to measure subjective feelings of well-being and satisfaction among older adults. Life satisfaction is viewed as a multifacted concept incorporating domains of well-being, finding life meaningful, a feeling of success in achieving major goals, a positive self-image, and an optimistic attitude (McDowell & Newell, 1987; Neugarten et al., 1961). Validity studies compared the LSIA scale to the Philadelphia Geriatric Center Moral Sale (Lohmann, 1977) and life satisfaction ratings by clinical psychologists (Neugarten et al., 1961), with correlations of .76 and .64, respectively. Independent factor analysis studies (Adams, 1969; Hoyt & Creech, 1983) have reported consistent findings of a three-factor solution of congruence, mood tone, and optimism. The LSIA is one of the more widely used scales of life satisfaction for older adults, and has several strengths of reliability, strong correlations with other scales, and consistent validity findings (McDowell & Newell, 1987). It has been used in senior board and care homes to examine well-being (Clough, 1981) and quality of life (Faulk, 1988). This study used the original agree/disagree response format. Higher scores represent higher levels of life satisfaction.

The *Older Adult Health and Mood Questionnaire* (OAHMQ; Kemp & Adams, 1995) is a true/false, 22-item screening instrument designed to measure geriatric depressive disorders and symptoms reported by older adults. It

provides a three-part division of "normal" (score range = 0–3), "clinically significant depressive symptoms" (range = 4–10), and "probable major depression" (range = 11–22).

The *Facility Satisfaction Questionnaire* was created for this study and contains 10 items addressing the global environmental features of senior residential facilities. This questionnaire was developed around the four conceptual domains identified by Moos and Lemke (1984) as representing a comprehensive assessment of social settings in adult residential environments. These four domains were (a) resident and staff traits, (b) physical features, (c) policies and services, and (d) social climate/empowerment. Twenty-two items were originally created. Input was provided by an advisory council consisting of two facility administrators, two senior facility residents, and the researcher (the first author). The items were narrowed to 9 and one new item was added on the cost of the facility. The final 10 items cover satisfaction with the following topics: cost, comfort and privacy of one's room, physical condition of the home as a whole, the staff, the other residents, personal care services received, availability of transportation, the meals, the social activities, and the opportunity for residents to have a say in how the home operates. Residents rated their satisfaction with each item, using a 7-point scale with 1 = "very dissatisfied" and 7 = "very satisfied". The alpha coefficient was .76.

There were three sets of independent variables: (a) health status variables of function and chronic conditions, (b) social involvement variables of family contact and participation in social activities, and (c) facility variables of facility characteristics, opportunities for resident autonomy, and social climate.

Function and health status.—Resident functional status was measured by self-report information on dependency in ADLs and IADLs, and resident health status was measured by the number of identified chronic health conditions reported by the resident. For functional status, residents were asked whether they received ongoing assistance from a person with each of seven ADLs of ambulation, transfers, grooming, dressing, bathing, feeding, and toilet care. For each ADL that they received personal assistance, they were scored as being dependent in that task. Residents who used only equipment to manage an ADL task were scored as independent for that task. For IADLs, residents were asked whether they received assistance from a person with transportation, medication management, and money management. Using the transportation provided by the facility was viewed as being dependent with transportation needs. Those residents who owned their own cars and were able to drive, or who regularly used the bus without personal assistance for their transportation were scored as independent in their transportation needs. Lastly, because the facility provided cooking, shopping, and housekeeping services for all residents regardless of capability, residents were asked whether they would be able to perform these activities without personal assistance if they lived on their own rather than in a residential facility. Activities were scored as either independent or dependent. Chronic health was the number of chronic conditions the resident identified out of a list of 17 conditions common among older adults.

Family availability contact.—Family availability was first measured by asking the resident how many family members or other relatives lived within an hour's drive of the resident. Family contact was then assessed with a single-item measure used by Newcomer and colleagues (1994) in their survey of 384 California residential care facilities. This item asked residents how often they had received visits from their family or other relatives within the last month. Answers were scored as either "none" or "some" contact.

Social activities.—Residents were asked whether they had participated in a list of eight facility social activities within the last three months. Activities covered were table games, ping-pong, group exercise, musical activities, arts and crafts, social gatherings, celebrations, and participation in resident council meetings. Residents could also add two additional activities not covered in the list. Activities added were discussion groups, group speakers, and cooking classes.

Facility opportunities for resident autonomy.—Facility practices and policies that promote resident autonomy were measured in two areas of resident participation in facility decision making and facility flexibility with residents' daily activities. The first variable, called "resident decision making," was measured using 16 items from the Resident Control subscale of the Policy and Program Information Form (POLIF) developed by Lemke and Moos (1980). The POLIF measures nine policy and program characteristics of senior living facilities, and the information is reported by the facility administrator. The 16 items included in this study measure the extent to which residents are involved in decision making in the facility. Items range from decisions about social activities to decisions about admitting new residents and changes of staff. Some examples of topics are having a voice in planning social activities, planning weekly menus, welcoming new residents, and decisions about facility décor. The final score is the percentage of items that involved resident participation. The second variable, called "resident flexibility," measured the extent to which the facility is flexible in 11 areas of resident daily activities. The 11 items for this measure were drawn from the California Residential Care Facility survey by Newcomer and colleagues (1994). It covers topics such as flexibility with meals and meal times, visiting hours, overnight visitors, having a pet, and availability of laundry facilities. The final score is the percentage of items endorsed by the facility. Both measures were filled out by the facility administrator.

The Sheltered Care Environment Scale (SCES; Lemke & Moos, 1987; Timko & Moos, 1991) is a social climate scale designed to measure the social environment of residential settings for older adults and has been tested on residents in nursing homes, residential care facilities, and congregate apartments for the elderly. The measure contains seven subscales of which four were used for this study: Cohesion, Conflict, Independence, and Resident Influence. The Cohesion subscale measures how helpful and supportive staff members are toward residents and how involved and supportive residents are with each other. Some topics covered include whether staff members spend a lot of time with resi-

dents, whether residents receive individual attention, if there are many social activities, and if the discussions with staff and other residents are interesting to residents. The Conflict subscale measures the extent to which residents express anger and are critical of each other and of the facility and staff. Some topics covered include whether residents feel angry often, criticize the facility, and criticize each other, and how peaceful it is at the home. The Independence subscale measures how self-sufficient residents are encouraged to be in the facility and how much responsibility and self-direction they are able to exercise. Some topics covered include whether residents take charge of some social activities, if activities are challenging to residents, and if residents are learning to do more things on their own. Lastly, the Resident Influence subscale measures the extent to which residents may influence rules and policies of the facility and are free of restrictive regulations. Some examples of items include whether residents help make the rules, if resident suggestions are acted upon, and how strict the staff members are with the rules. Each subscale has nine yes/no items, with each score being the average percentage of items answered in the scored direction by the residents. The subscale scores were based on resident interviews and reflect the experiences and impressions of the residents. The alpha coefficients for the Cohesion, Conflict, Independence, and Resident Influence subscales were .64, .78, .63, and .50, respectively, and are similar to those reported by Timko and Moos (1991).

Analytic Framework

A three-part analytic framework consisting of descriptive results, bivariate correlations and hierarchical regression analyses was used in this study. Descriptive findings for the resident QOL measures, social climate scales, and facility variables of resident autonomy were reported. Preliminary data analysis of bivariate correlations and analyses of variance were computed to assess the single-order relationship between variables representing each of the hypothesized domains and QOL. Finally, three hierarchical regression analyses were performed on each of the QOL measures to test the relative contribution of the four hypothesized domains to QOL.

RESULTS

Descriptive Findings

The means and standard deviations for the resident study variables are shown in Table 1 for the total sample and by gender. The findings for social involvement by the residents suggested moderate levels of social interaction through either family contact or social activities. Residents had an average of 2.7 family members within an hour's drive of their residence. Seventy-seven percent of the residents reported monthly visits from family members. Residents participated in an average of 3.3 ($SD = 1.9$) facility activities. Only 3% ($n = 6$) participated in no activities. The mean life satisfaction score for residents was 11.3 ($SD = 3.9$). This is indicative of moderate life satisfaction and is similar to other reported findings with older adults (McDowell & Newell, 1987). The overall facility satisfaction score was 5.6 ($SD = 0.8$), which suggests moderate to high satisfaction with the facilities. Five percent of the participants had an average score below four suggesting low facility satisfaction, and 36% had an average score at or above six, suggesting high facility satisfaction.

The average depression score was 5.2 ($SD = 4.5$). This score is moderately low and is similar to the average scores reported by persons judged to be nondepressed in Kemp and Adams (1995). Twelve percent of the sample scored within the range of probable major depression (score = 11+), and 41% scored within the range of possible clinically significant symptoms (scores = 4–10; Kemp & Adams, 1995).

The average scores for the four social climate measures of Cohesion, Conflict, Independence, and Influence were 58.3, 34.9, 26.4, and 41.2, respectively. Residents scored highest in the areas of Cohesion and Influence and lowest in their perceptions of opportunities for Independence in the facility.

Two gender differences were found in social activities and the social climate scale of Independence. Women participated in more social activities ($M = 3.5$) than men ($M = 2.7$), $t = 2.92$, $p < .001$, and reported higher perceptions of Independence in the facility environment ($M = 28.7$) than men ($M = 20.8$), $t = 2.23$, $p < .05$.

The two facility variables of resident autonomy were resident flexibility and resident decision making. Data were reported from 50 of the 55 facilities. The average scores by facility were 71.7 ($SD = 14.6$) for flexibility and 33.6 ($SD = 19.4$) for decision making. These scores suggest high levels of flexibility in everyday activities, and modest opportunities for decision making by the residents in facility policy. The two measures correlated .39 ($p < .01$) with each other and were both significantly correlated with the social cli-

Table 1. Means (and Standard Deviations) of Social Involvement, Depression, Satisfaction Measures, and Social Climate Scales by Total Sample and Gender

Variables	Total Sample ($N = 201$)	Men ($n = 52$)	Women ($n = 149$)
Social Involvement			
No. family members close by	2.7 (3.2)	2.9 (3.9)	2.6 (3.0)
% Monthly family contact	77%	73%	78%
Social activities participated in	3.3 (1.9)	2.7 (1.5)	3.5 (1.9)**
Satisfaction			
Life satisfaction[a]	11.3 (3.9)	11.1 (3.9)	11.3 (3.9)
Facility satisfaction	5.6 (0.8)	5.5 (0.9)	5.6 (0.8)
Depression Scores[a]	5.2 (4.5)	5.5 (4.4)	5.1 (4.5)
Social Climate Measures[b]			
Cohesion	58.3 (23.4)	55.7 (24.4)	59.3 (23.0)
Conflict	34.9 (28.8)	40.1 (29.7)	32.9 (28.4)
Independence	26.4 (20.2)	20.8 (18.2)	28.7 (20.6)*
Resident Influence	41.2 (21.8)	39.9 (17.3)	41.7 (23.3)

[a]Total sample is 199, sample sizes for men and women are 52 and 147, respectively.

[b]Sample size for SCES subscales are Cohesion $n = 166$; Conflict $n = 159$; Independence $n = 158$; Resident Influence $n = 154$. Sample sizes for men are 47, 44, 45 and 43, respectively. Sample sizes for women are 119, 115, 113, and 111, respectively.

*$p < .05$; **$p < .01$.

Table 2. Correlations and Analyses of Variance Between Resident, Social Involvement, and Facility Variables and Quality of Life Measures

Variables	Depression (n = 199)	Life Satisfaction (n = 199)	Facility Satisfaction (n = 201)
Demographics			
Age	−.05	.04	.20**
Sex	n.s.	n.s.	n.s.
Education[a]	.06	.06	.02
Function			
ADL	.05	.03	.07
IADL	−.02	−.00	.15*
Chronic health	.16*	−.18**	−.21**
Social Involvement			
Family contact	n.s.	F = 12.2**	n.s.
Social activities	−.23***	.28***	.16*
Facility[b]			
Nonprofit	n.s.	n.s.	F = 5.9*
Size	n.s.	n.s.	F = 4.1*
%SSI	.03	−.18**	−.26***
%Cognitive impairment	−.00	−.03	.09
Resident decision making	.05	−.06	.04
Resident flexibility	−.07	−.00	.03
Social Climate Measures[c]			
Cohesion	−.46***	.41***	.65***
Conflict	.26***	−.23**	−.41***
Independence	−.16*	.29***	.32***
Resident Influence	−.09	.02	.17*

[a]Education n = 199.

[b]Sample size for % SSI, n = 184; for % cognitive impairment, resident decision making, and resident flexibility, n = 183.

[c]Sample size for SCES subscales are Cohesion n = 166; Conflict n = 159; Independence n = 158; Resident Influence n = 154.

*$p < .05$; **$p < .01$; *** $p < .001$.

mate measure of Influence (flexibility $r = .23$, $p < .01$; decision making $r = .26$, $p < .01$).

Bivariate Correlations and Analyses of Variance

Table 2 reports the bivariate correlations and analyses of variance between the independent variables and QOL measures.

Demographics and health status. —With the exception of age, no demographic variable was significant. Older residents reported higher levels of facility satisfaction (.20). The health variable of chronic health conditions had the strongest correlation with QOL measures. It correlated significantly with depression (.16), lower life satisfaction (−.18), and low facility satisfaction (−.21). The functional variables of dependence in ADLs and IADLs were not significantly correlated with the QOL measures, with the exception that IADL dependency was associated with higher facility satisfaction (.15).

Social involvement.—Both of the social involvement variables of family contact and social activity participation were significantly correlated with QOL measures. Monthly family contact was associated with higher life satisfaction, $F(1,197) = 12.2$, $p < .001$, but not depression or facility satisfaction. Participation in social activities negatively correlated with depression (−.23) and positively correlated with life (.28) and facility (.16) satisfaction.

Facility characteristics.—With one exception, the facility characteristics were associated with facility satisfaction, but not the other QOL measures. Facilities that were nonprofit, $F(1,199) = 5.9$, $p < .01$, and smaller in size, $F(2,198) = 4.1$, $p < .05$, had higher facility satisfaction ratings by the sampled residents. The percentage of facility patients receiving SSI was negatively correlated with both facility satisfaction (−.26) and life satisfaction (−.18), whereas the percentage of facility patients with cognitive impairments was not related to facility satisfaction. The facility measures of resident flexibility and resident decision making were not significantly related to the three QOL measures.

Social climate.—The four social climate variables had the strongest correlations of all the measures with QOL. Cohesion and Conflict correlated significantly with all three QOL measures. Cohesion was positively correlated with life (.41) and facility satisfaction (.65), and negatively correlated with depression (−.46). Conflict had the opposite relationship, and was negatively correlated with life (−.23) and facility satisfaction (−.41), and positively correlated with depression (.26). The social climate variable of Independence correlated with three of the QOL measures, being positively associated with life satisfaction (.29) and facility satisfaction (.32), and negatively associated with depression (−.16). The social climate measure of Influence was correlated positively with facility satisfaction (.17).

Regression analyses.—Three hierarchical regression analyses were performed on three QOL variables of depression, life satisfaction, and facility satisfaction. Predictor variables were selected that had significant bivariate correlations with the QOL variables and that represented the four hypothesized domains. The selected variables were the number of chronic health conditions, monthly family contact, social activities, facility characteristics of nonprofit status, bed size and percentage of SSI residents, and social climate variables. Because the social climate variables were significantly intercorrelated with each other, Cohesion and Independence were selected to represent positive components of the social climate, and Conflict was included to represent a negative aspect of social climate. Influence was not included because of its nonsignificant correlation with two of the three QOL measures and its modest correlation with facility satisfaction. Other variables not included were resident demographics, measures of ADLs and IADLs, the percentage of residents with cognitive impairments in the facility, and the facility variables of resident autonomy. One hundred forty cases had complete data on all the variables. Intercorrelations between the predictor variables are listed in Table 3.

Regression analyses found that predictor variables accounted for 54% of the variance for facility satisfaction, $F(3,136) = 53.45$, $p < .001$, 32% of the variance for life satisfaction, $F(4,135) = 15.98$, $p < .001$, and 34% of the variance for depression, $F(3,136) = 23.59$, $p < .001$, (see

Table 3. Intercorrelations of Regression Predictor Variables ($n = 140$)

Variables	1	2	3	4	5	6	7	8	9
1. Chronic health	—	—	—	—	—	—	—	—	—
2. Family contact	−.12	—	—	—	—	—	—	—	—
3. Social activities	.03	.00	—	—	—	—	—	—	—
4. Nonprofit status	.12	.00	.06	—	—	—	—	—	—
5. Facility bed size	.00	.14	.03	−.05	—	—	—	—	—
6. % SSI residents	−.04	−.30***	−.20*	−.32***	.19*	—	—	—	—
7. Cohesion	−.14	.04	.24**	.23**	−.12	−.29***	—	—	—
8. Conflict	.16	−.17*	.04	−.10	.24**	.29***	−.40***	—	—
9. Independence	−.08	.19*	.26**	.31***	.03	−.18*	.44***	−.19*	—

*$p < .05$; **$p < .01$; ***$p < .001$.

Table 4). The main contributor in all three regression analyses was the social climate measure of Cohesion. The findings for each of the regression analyses were as follows: (a) facility satisfaction was predicted by the social climate measures of high Cohesion and low Conflict, and by fewer chronic health conditions; (b) life satisfaction was predicted by higher Cohesion, fewer chronic conditions, and social involvement through social activities and monthly family contact; and (c) depression was predicted by fewer social activities, and facility measures of low Cohesion and nonprofit status.

Discussion

This study investigated the impact of four domains of resident health and demographics, social involvement, facility characteristics including resident autonomy practices, and the facility social climate upon the QOL of older adults living in assisted living homes. Three QOL measures of life satisfaction, facility satisfaction, and depression were used. The facility residents in this study had moderate to severe functional limitations, had multiple chronic health conditions, and were on average more than 80 years old.

The resident QOL scores show a satisfactory level of QOL for frail seniors living in residential care homes. Other studies have also reported reasonable quality of life levels for seniors experiencing severe impairment (Pearlman & Uhlmann, 1991) and those living in long-term care facilities (Salamon, 1987). For facility satisfaction, the seniors were most satisfied with the comfort and privacy of their rooms, the cleanliness of the home, and the personal care services provided. They were least satisfied with cost of the facility and the effectiveness of the resident councils. The majority of the participants also did not report serious symptoms of depression, although 12% did score within the range of probable major depression, endorsing at least 11 of the depressive symptoms. Even though this group is small, the existence of depression highlights the importance of monitoring residents for depression and providing treatment.

The average resident scores on the social climate scales suggested a profile of slightly above average levels of Cohesion ($M = 58.3$) combined with modest levels of Resident Influence and feelings of Conflict. Both Resident Influence and Conflict scores were similar to those reported by Moos & Lemke (1992) for seniors living in facility settings. In contrast, the average score for Independence was quite low ($M = 26.4$) and much lower than the norm of 45 reported by Moos & Lemke (1992). This subscale measures how self-sufficient residents are with their personal affairs inasmuch as they relate to facility activities such as learning new skills, taking charge of activities, focusing on the future, and suggesting ideas to staff. This does not necessarily mean lack of independence in one's life or dealings with family, friends, or health.

For the two facility measures of promoting resident autonomy, average scores were very high in the area of "flexibility," but low in the area of "resident decision making." The high flexibility scores indicate that many facilities are operating in a flexible manner when it comes to the daily activities of the seniors, providing them with choices and a voice in areas such as mealtimes, visiting hours, or having a pet. According to Kane and Caplan (1990), these are the choices that matter the most to seniors. In contrast, the low decision-making score suggests that residents are not as involved in making decisions about facility policy such as creating rules and regulations, planning meal menus, or

Table 4. Stepwise Regression Analyses for the Three Quality of Life Measures ($n = 140$)

Variables	*B*	Beta	*p* value	R^2	Cummulative R^2
Facility Satisfaction					
Regression Analysis					
Cohesion	.02	.59	<.001	.48	.48
Conflict	−.005	−.18	<.01	.03	.51
Chronic health	−.09	−.16	<.05	.03	.54
					$F(3,136) = 53.45$*
Life Satisfaction					
Regression Analysis					
Cohesion	.06	.37	<.001	.21	.21
Chronic health	−.49	−.21	<.01	.05	.26
Social activities	.42	.21	<.01	.04	.30
Family contact	1.39	.15	<.05	.02	.32
					$F(4,135) = 15.98$*
Depression					
Regression Analysis					
Cohesion	−.10	−.54	<.001	.28	.28
Nonprofit status	2.46	.19	<.01	.04	.32
Social activities	−.33	−.14	<.05	.02	.34
					$F(3,136) = 23.59$*

*$p < .001$.

handling resident complaints. This low score also corresponds with the low satisfaction scores residents gave to the effectiveness of resident councils and the low mean score on the social climate variable of Independence. It is possible that many facilities may reserve the main decision-making power to management and staff and limit involvement from residents to a few areas such as recommending social activities or being involved in the welcoming committee.

The regression analyses identified the pattern of relationships between the predictor variables and QOL. While slightly different combinations of variables predicted different measures of QOL, we found that, overall, high QOL was associated primarily with a cohesive environment, participation in social activities, and contact and visits with family. These regression findings suggest that it is the social component of residents' lives that makes the greatest contribution to positive QOL and fewer symptoms of depression.

The social climate measure of Cohesion contributed the most variance in all three regression analyses and was predictive of life satisfaction, facility satisfaction, and lower depression scores. The social climate represents the "personality" of a facility environment and the perceptual experience people have with their environments (Moos & Lemke, 1992). High cohesive environments have staff members who are involved with and supportive of residents, and residents who are involved with each other. In the facility satisfaction regression, a second social climate measure of Conflict also emerged as a predictor, providing additional weight to the importance of the facility social milieu. Environments high on Conflict are tense and have residents that express anger and are critical both of each other and the facility (Moos & Lemke, 1992). Facility environments that were low in Conflict predicted higher levels of facility satisfaction.

The second strongest set of predictors of QOL were family contact and participation in social activities, representing interpersonal relationships and social involvement. Participation in social activities was predictive of higher life satisfaction and low depression scores. Other studies have documented the importance of social participation for functionally impaired seniors. For example, social activity has been associated with fewer symptoms of depression (Pedersen, 1986), decreased social isolation (WindRiver, 1993), and maintaining mental stimulation and cognitive and social skills (Parker & Wagner, 1988). The second measure of social involvement, monthly family contact, was predictive primarily of life satisfaction. According to Stephens and Bernstein (1984), family bonds are the ones most valued by residents and viewed as the most supportive, whereas social contacts with other residents do not always lead to friendships or strong bonds.

Health status, as measured by the average number of chronic health conditions, was significant in two of the three regression analyses. Results found that residents with more chronic health problems had both lower life satisfaction and facility satisfaction. These findings suggest that seniors who are aging in place in assisted living homes and are likely to experience increased health problems over time may also be at risk for reduced QOL and increased depression. To prevent this from happening, facilities will need to find ways to maintain QOL among residents as the number of chronic health conditions increases with age.

After accounting for the three main predictors of QOL, the facility characteristics did not contribute to the QOL regression findings and did not add to the prediction of the QOL outcome measures. Other studies have reported similar findings (Kruzich et al., 1992; Namazi et al., 1989) when examining the impact of several different predictor categories on resident well-being. In these studies, the predictive ability of organizational or facility variables was reduced considerably when predictors other than organizational variables were included in the analyses. This does not mean that organizational factors are unimportant, but that other variables within the organization such as social climate and social activities may have a stronger relationship to resident well-being than the objective environmental factors. In this study, facility characteristics were significantly correlated with some of the social climate subscales. Nonprofit facilities were positively correlated with Cohesion ($r = .24$) and Independence ($r = .31$), and larger size facilities were positvely correlated with levels of Conflict ($r = .24$). The intercorrelations between these two sets of predictors probably limited the predictive ability of facility characteristics over and above what was accounted for by the social climate variables.

Policy and Practical Implications

The findings of this study indicate that a more homelike and warm environment with a less conflictual setting is the key to contented residents and QOL along with both family and social involvement. A cohesive environment is often developed on a personal level by staff members spending one-on-one time with a resident. If the staff feels comfortable taking that extra moment to explain something to a resident, assist a resident, or simply spend some time with a resident, this will help to create feelings of cohesion. Administration can take practical steps designed to develop a cohesive environment by hiring direct service staff members who have good interpersonal skills and a warm and friendly personality, and communicating a message that spending time with residents is an important part of a staff member's job.

Because the social climate plays such a strong role in QOL of residents, policy may need to address this issue. Some policy recommendations are as follows: (a) developing training and educational programs that emphasize the role of the social environment and how to create it; (b) developing and providing manuals of best practices that illustrate how social climates have been created in other facilities; (c) encouraging facilities to build smaller homes, or clusters of homes in a large facilities, instead of one large facility, as increased bed size was correlated with higher levels of conflict; and (d) including a statement about developing QOL in the licensing requirements similar to those statements that emphasize the importance of resident autonomy. Just as autonomy is encouraged through actions such as resident councils, choice of roommate and resident privacy, so can QOL be encouraged through supporting positive patient-staff interactions and emphasizing a humane philosophy of care rather than a profit-focused philosophy

of care. Current residential public policy has focused on residents having a stronger say in the running of the facilities, but according to this study's findings of nonsignificant correlations between resident decision making and QOL measures, that may not be as important an issue as creating a cohesive community for residents.

Spending levels may also influence resident QOL through their impact on the number of staff members and range of social activities. At the bivariate level, this study found that as the percentage of patients receiving public assistance (in the form of SSI) increased, the life satisfaction and facility satisfaction of the study participants declined, although this was not supported by the regression analyses. A similar finding was reported by Fottler, Smith, and James (1981), who found an inverse relationship between quality of care and percentage of low-income patients in nursing homes. At the time of this study, California residents who received SSI paid $702 per month for facility services, compared with the range of $1,000–$1,650 private-pay residents paid for a single room (Newcomer et al., 1994). Facilities with more SSI residents may have lower revenues than those with fewer or no SSI residents. However the creativity of the administration in making the best use of their resources may help to offset low revenues. For example, the administration could use free community social activities, volunteer groups, and senior citizen centers to provide additional social interaction for the residents. Further investigation on the role of revenue and spending levels upon resident QOL is warranted.

A limitation of this study was the small number of facilities in each of the bed sizes and a facility response rate of under 50%. Although nonrespondents did not differ from respondents in bed size or geographical location, it is possible that nonrespondents might have differed in organizational traits associated with resident QOL. Further investigation with a larger number of facilities in different bed sizes, more nonprofit facilities, and more aggressive recruitment efforts is warranted and would provide more conclusive information about resident QOL in assisted living homes.

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Address correspondence to Judith Mitchell, PhD, Rehabilitation, Research and Training Center on Aging, Rancho Los Amigos Medical Center, 7601 Imperial Hwy, Annex 800-W, Downey, California 90024. E-mail: judithmm@earthlink.net

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