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Original Article

Older Adult Quality of Life within an Assisted Living Facility amid COVID-19

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Abstract *- This study aimed to illustrate assisted living facility (ALF) resident quality of life (QOL) prior to intergenerational living with graduate health science students and allowed investigation of QOL in older adults during COVID-19. A mixed methods approach utilizing the Quality of Life Scale (QOLS), Geriatric Depression Scale-15 item, and demographics survey was utilized with 10 participants at an ALF. Eight participants were recruited to complete interviews to further illustrate the quality of life during COVID-19. QOLS categories with the lowest median scores included: physical health, participation in organizations, learning, understanding self, and socializing. Positive screens for depression risk occurred in 40 percent of the residents. Themes impacting the quality of life included: Disconnectedness & Activity Changes, Uncertainty, and Insight. Conclusion: Disconnectedness and loss of activity were highlighted during COVID-19. Programs to support social connectedness have been recommended to address older adults' uncertainty entering the endemic stages of COVID-19.*

Keywords *- Assisted living facility, COVID-19 pandemic, Intergenerational, Quality of life, Socialization.*

1. Introduction

The elderly population is one of the most rapidly expanding age categories in the United States and is expected to grow from 15 to 24 percent of the population from 2014 to 2060.[1] While older individuals are living longer, the need for medical assistance and the disability rate in this population is expanding. By 2030, there will be an estimated twelve million individuals aged 60 years or older in need of long-term care services across the United States. This statistic parallels the increasing demand for home care services, nursing homes, and assisted living facilities (ALFs).[2] As demand for services increases, efforts to maintain quality of life (QOL) in older adults throughout an increased lifespan has also intensified.[3] QOL encompasses several pertinent domains for assessing one's view on life and can include health, psychosocial, or societal components.[4] As individuals age, many factors can impact QOL, such as environment, autonomy, social isolation, depression, and loneliness combined with diminishing physical vigor and mental status.[3, 5, 6]

QOL has been shown to differ for individuals based on age, mental health status, or meaningful social connections. Age has been shown to have a slightly negative correlation to QOL.[7, 8] Mental health status is a domain viewed as inextricably intertwined with QOL, including feelings of worry and loneliness. In addition, meaningful social connections create positive feelings, and the resultant psychological well-being is related to improved QOL in older adults.[2, 9–11] Lack of close connections or regular family contact and increased loneliness are both associated with lower QOL for older adults [12, 13]. In comparison, higher QOL is linked to emotional or social engagement and support.[2, 7, 8, 11] Older adults who resided in the community and involved themselves in activities with diverse populations had better self-rated health due to increased social relationships and networks.[14]

Horowitz & Vanner[15] report that ALFs, which typically emphasize 'aging in place' and maintaining an independent lifestyle while receiving tailored care and supervision, are increasing in prevalence faster than other long-term care options. QOL in older adults living in ALF is not as vastly studied as QOL of community-dwelling older adults. Independence, social connections to families or communities, and meaningful activities all have been shown to play important roles in QOL for older adults in ALF.[2, 5, 11] Loss of independence has been shown to have a negative impact on QOL in older adults in ALFs.[12] Being able to live independently is something older adults in ALFs prefer overwhelmingly, even though dependent living can, in some instances, provide relief from the physical and cognitive

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demands of living independently.[15] Dependency does not always indicate a decreased QOL for older adults in institutional care. Instead, older adults' purpose in life and sense of meaning have greater importance for QOL than their level of dependence.[2]

Social connections also play a vital role in QOL in older adults living in ALF. Social support in terms of availability of emotional, informational, affection, and positive social interaction support for older adults in ALF is strongly associated with their QOL.[2] Social connections to other residents and staff have been shown to be significantly positively associated with ALF resident QOL.[16] Residents who become socially integrated with other ALF residents have greater life satisfaction and a sense of home than residents with fewer relationships.[16] Integration within a community appears to be important to QOL for residents in ALF and older adults living in the community.

Older adults in an ALF also have opportunities to participate in activities to occupy their free time and help satisfy the fulfillment they previously received from prior roles and activities in life.[3] Activities for older adults have been shown to be important for health-related QOL. Active activities, such as going grocery shopping, are better for health-related QOL than passive activities, such as playing cards.[17] However, there are benefits to life satisfaction for individuals who participate in social activities, regardless of if they are active or passive.[10]

Social connections via activities between older adults and young adults have shown to be beneficial to both parties involved.[18–20] Overall, there was a positive response when older adults were asked about forming intergenerational bonds through programming.[18, 21] This intergenerational interaction is beneficial for both younger and older people.[19] After such interactions, younger people felt a sense of fulfillment and altered preconceived stereotypes of older adults.[34] For older adults, this kind of community engagement program provided a sense of connection or usefulness to others and negated stereotypes they had about younger generations.[21, 23]

2. Materials and Methods

2.1. Study Design

During the summer of 2019, a private University and a local ALF partnered to establish a novel intergenerational living-learning community in Pittsburgh, PA. Within the ALF, health science graduate students in occupational therapy, physical therapy, counseling psychology, and physician assistant programs were invited to live on a floor separate from residents at a discounted rental fee with the requirement to engage at least four hours a week with residents socially. To establish the effects of this novel intergenerational living community on the older adult residents, an initial baseline of resident quality of life was the necessary first step in measuring the impact of the intergenerational living situation on the residents. The initial baseline collection of QOL outcomes from the residents of this assisted living facility was completed for the purposes of this study.

The QOL data collection timeline coincided with the height of the COVID-19 pandemic: Summer 2020 – Fall 2021. The assisted living facility supports older adult residents by providing help with daily tasks such as medication management, activities of daily living, physical mobility, and housekeeping. In recruiting older adult residents, the facility also markets intergenerational programming as a means to promote an active lifestyle. However, during the data collection timeframe, residents were restricted to accessing only their own personal apartments and outdoor locations. They were unable to attend any community areas or group activities within the facility.

Seven students moved into the assisted living facility in 2020 but, due to pandemic restrictions, could not provide face-to-face interactions with the residents. These students had been interviewed by the assisted living facility director, who provided medical and background check clearances prior to living at the ALF. Therefore, baseline results illustrating the resident quality of life need to be interpreted within the lens of the ALF environment and the impact of social isolation on older adults living in a facility during the COVID pandemic.[24] A mixed methods approach was developed through the COVID pandemic by the primary investigators to allow for the results to cover the depth and breadth of quality of life and the impact of the environment on the residents' quality of life.

2.2. Participants

This mixed methods study utilized convenience sampling to recruit participants. Flyers recruited participants, in-person tabling events at the ALF facility when pandemic restrictions allowed, video/virtual recruitment when in-person recruitment was not allowed, and verbal recruitment from ALF staff. Inclusion criteria included residents of the assisted living facility over the age of 60. Exclusion criteria included the inability to read English and residents being disoriented to person and place. Goals for recruitment were initially set at 20 residents, but the difficulty in contacting residents, providing guidance or answering questions about recruitment, and the fluctuating number of residents due to hospitalizations or leaving to live with family during the pandemic resulted in a much lower number of available participants.

2.3. Outcome Measures

The QOL Scale (QOLS) was chosen as the assessment tool for QOL due to its ability to measure several important

domains of QOL for older adults and its validity.[4, 25–27] The study utilized the following other primary outcome measures: Geriatric Depression Scale-15 items,[28] a demographic questionnaire, and a semi-structured interview based on perceptions of quality of life.

The Quality of Life Scale (QOLS)[26] was originally developed to measure the quality of life across patient groups and cultures.[25] The QOLS has been used in population studies of healthy adults and patients with rheumatic diseases, fibromyalgia, chronic obstructive pulmonary disease, gastrointestinal disorders, cardiac disease, spinal cord injury, psoriasis, urinary stress incontinence, posttraumatic stress disorder, and diabetes.[25] The QOLS is scored by considering how satisfied one is with certain relationships and aspects of life. It uses a rating scale from 1-7, with verbal anchors linked to the numeric ratings from 'terrible' to 'delighted.' Even if a person does not participate in an activity or have a relationship, they can still be satisfied or unsatisfied with that aspect of life and are asked to rate that item. Higher scores indicate higher QOL, with a maximum possible score of 112. For the purposes of this study and due to the diversity of pre-existing conditions in residents at the assisted living facility, this scale was selected for its internal consistency (α = .82 to .92) and high test-retest reliability in stable chronic illness groups (r = 0.78 to r = 0 .84).[25, 27]

The Geriatric Depression Scale-15 item survey (GDS-15) was used to assess depressive symptoms among older adults.[28] The GDS-15 focuses on psychiatric symptoms of depression with questions in dichotomous yes/no format to ease understanding. Items are scored by giving one point for every answer that indicates a symptom of depression. Scores greater than 5 indicate a likelihood of depression, and pooled sensitivity and specificity for this cut point have been shown to be 0.89 and 0.77, respectively.[29] The GDS-15 was not utilized as an inclusion criterion but as a descriptor for resident mental health. The ALF facility was notified of pooled results and did routinely have mental health services available for all residents.

The demographic questionnaire surveyed residents on their age, years living at the ALF, and changes in activity level due to COVID-19 restrictions. Depending on clients' visual and handwriting abilities, this survey could be hand-written by the resident or verbally reviewed and answered by the primary investigators.

Following a preliminary review of the survey-based data (QOLS, GDS-15, and Demographic Questionnaire) and limited recruitment during the pandemic, the primary investigators modified data-gathering techniques to illustrate further the impact of the environment on the resident's quality of life through semi-structured interviews. The purpose of the semi-structured interviews was to gain additional insights into the environmental and pandemic impact on quality of life. Questions addressed quality of life generally and specifically activity changes due to the COVID-19 pandemic and restrictions present within the assisted living facility environment.

2.4. Procedures

Residents were informed of the study by facility staff distributing study packets to resident rooms and mailboxes and consented to the survey collection of data through signed consent forms. All ALF residents were initially given a printed packet, including the demographic questionnaire, the GDS-15, and the QOLS. Residents could fill it out independently and return it to a drop box at the facility or have staff assist in completing the survey packet. All packets were given a numeric code and separated from consent forms upon data entry to facilitate participant privacy. The primary investigators communicated regularly with the ALF staff to see if surveys were completed and ready to be collected.

After a preliminary review of survey data, residents who consented to further contact on the initial demographic questionnaire were asked to participate in a semi-structured interview further to illustrate the pandemic's impact on quality of life. Interviews were completed by the primary investigators (KS and MC). The interviews typically took 10 – 45 minutes, depending on the residents' disclosure of the questions administered. The interviews were scheduled at the residents' convenience at the assisted living facility when pandemic restrictions allowed for visitors. The interviews were recorded, transcribed, and deidentified prior to analysis.

2.5. Data Analysis

Descriptive analysis of survey data occurred in Microsoft Excel. Trends in demographics, GDS-15, and QOLS were analyzed by measuring central tendencies, ranges, and percentages. Qualitative data collected from short answer responses within the demographic surveys and the transcriptions of the semi-structured interviews were reviewed by three authors (KS, MC, AD) using content analysis. Investigators began their content analysis by identifying their assumptions regarding the potential negative impact of COVID-19 on the social isolation of the residents at the ALF. After reviewing assumptions, the three investigators individually began inductively coding the data for themes. Following individual coding, the investigators met two additional times to collectively agree upon formulated themes or return to transcriptions to recode based on differences in categorization. Final content themes were summarized upon the collective agreement of the research team.

2.6. Ethical Approval

This research study was approved and supported by the University's Institutional Review Board (IRB-FY2021-41). All participants completed and signed a consent form identifying their understanding of the research requirements and process. A modification to the original study procedure was approved to include the resident semi-structured interviews.

3. Results

Resident survey data is reported in Table 1. The survey return rate based on the total number of ALF residents (65) was 15%, with 10 residents completing the full survey packet. Over half of the survey respondents had a college education. Our sample was split evenly between males and females, with an average age of 79. Results of the GDS-15 identified 60% of the respondents as normal on the depression scale; however, 40% of respondents had scores indicating a risk of depression.

Based on QOLS scoring recommendations from Burkhardt & Anderson[25], when compared to a healthy population's average score of 90, five residents scored at or above this average quality of life rating, and five residents scored below average quality of life. The mean QOLS score was 86.6, the median 92, and the range of resident QOLS scores was 50-112. The categories of the QOLS that had the lowest collective median score included: physical health, participation in organizations, learning, understanding self, and socializing with others. The categories of the QOLS with the highest collective median score included: close relationships with significant others and work. Additional medians and ranges of scores for QOLS items are included in Table 2.

Table 1. Demographics of ALF Resident Surveys

ALF Resident Surveys (n=10)		
	Mean/ Median /n	**Range/ %**
Age, mean	79	66-92
Education, n		
High School	2	20
Associates Degree	1	10
Bachelor's Degree	2	20
Graduate Degree	5	50
Gender, n		
Male	5	50
Female	5	50
GDS-15, n		
Normal scores < 5	6	60
Possible depression, scores >5	4	40
Individual Total QOLS, n		
QOL score greater than or equal to 90	5	50
QOL score less than 90	5	50
Collective Total QOLS, median	92	50-112

Table 2. QOL Scale

ALF Resident Surveys (n=10)		
QOLS Categories	**Median**	**Range**
Material Comforts	5.5	3-7
Physical Health	5	3-7
Relationships with Relatives	6.5	2-7
Raising Children	6	2-7
Relationship with Significant Other	7	2-7
Close Friends	5.5	2-7
Helping Others	6.5	2-7
Participating in Organizations	5	2-7
Learning	5	3-7
Understanding Self	5	3-7
Work	7	4-7
Creative Expression	5.5	2-7
Socializing	5	2-7
Entertainment	6	3-7
Active Recreation	5.5	2-7
Independence – Do for Self	6.5	2-7

Eight residents agreed to participate in a semi-structured interview. The two resident attritions occurred due to one resident not responding to outreach by the investigators, and one had moved from the assisted living facility. The eight interviews identified three primary themes: Disconnectedness & Activity Changes, Uncertainty, and Insight.

3.1. Disconnectedness and Activity Changes

The resident emotional responses stemmed from a continued sense of disconnectedness from others due to reduced activity and interaction. Participants frequently commented on less physical activity: 'less exercise', 'less active', and 'very little walking'. Greatly reduced activity was a common report and was tied to strong emotional reactions. However, individual residents responded differently to the disconnectedness emotionally. For a few residents, disconnectedness led to feelings of disappointment with statements of missing the 'freedom' to be with others, 'missed having company' and 'contact.' One resident stated, 'We do not hug and kiss people anymore…And that used to be something you did all the time…It is just too bad because I love doing that.'

Others responded to the disconnectedness with frustration or anger, identifying that the disconnectedness was 'obnoxious.' They responded with emotions of frustration to staff when they were told they were physically unable to share space with others. One resident recalled a heated conversation with a staff member about wanting to leave the facility. The resident had asked the staff member, 'What about you? You go home; you have kids in school. You are more of a detriment [to COVID precautions] than I am.' The frustration of knowing others could leave could not be echoed in other comments about feeling 'confined',

‘imprisoned’, and ‘stuffed.’ Others noted it was unusually quiet; they were ‘going nowhere, doing nothing.’

3.2. Uncertainty

Residents responded to the lifting of strict pandemic restrictions with feelings of uncertainty. Residents’ statements about the lifting of restrictions included: ‘Far more difficult than I expected,’ and ‘All of a sudden, it is like what do I do?’ One resident stated it was difficult to ‘just turn the light switch back on.’ One resident described a circumstance of trying to go out of the facility after reopening procedures, ‘I was trying to wear the regular mask over this [nasal cannula oxygen] and then a pair of glasses. And that did not work.’ Another stated, ‘I get a little nervous when people start not wearing their masks.’ A resident reported that hybrid Sabbat services were appreciated to remain connected but noted they were ‘a little bizarre.’ However, when services resumed in person, the resident had difficulty hearing because of the need to be spaced out and wear masks for safety protocols. He described his experience as ‘frustrating.’ One resident stated that her daughter does not want her to ‘go out’ after the lifting of restrictions. One stated that there still was ‘little to do’. Some were still uncertain about reopening but reported being more optimistic, emotionally being ‘pretty comfortable’ and finding the reopening ‘reassuring.’

3.3. Insight

Interestingly, four participants reported Covid did not affect their quality of life. In one person, this was a by-product of a heart condition that required intervention at the beginning and during the pandemic. Therefore, he discussed that his heart health, and not Covid, restricted his activity and interactions for most of the pandemic shutdown. Others, however, indicated that nothing had changed. Three residents mentioned never being restricted to their rooms and not being offered the vaccine, both of which occurred at the facility where they lived.

4. Discussion

The major themes of disconnectedness and loss of activity were not surprising considering the restrictions in place across society during the early months of the pandemic. The resident feelings of isolation, sadness, loss, frustration, and anger coincide with similar feelings reported regardless of the living situation.[30] Social support and connectedness have been shown to be related to QOL.[7, 8] The survey results aligned with reports of reduced activity in interview transcripts. The lowest scoring sections in this sample were looking at the components of the QOLS, physical health, participating in organizations, learning, understanding self, and socializing with others. With the restrictions to socialization and movement around the ALF, it is easy to see why many of these sections were scored lower by residents. During qualitative interviews, these themes were independently reported with additional details and emotional reactions to disconnectedness from others and reduced physical activity when being restricted to rooms. The importance of social connectedness and physical activity for older adults in pandemic restrictions is well supported by reports and additional studies into quality of life during COVID-19.[30–32] While resident qualitative interviews indicate a loss of QOL, the QOLS results indicate that QOL, at least per the domains in this standardized survey, was still rather good. The residents who completed the QOLS at this ALF had a mean score of 86.6, with healthy populations reporting mean scores of 90 in prior research.[25]

The uncertainty expressed by ALF residents in this sample is not unlike the uncertainty expressed by many in healthcare about personal and professional actions and policy-making following the public health emergency phase of this pandemic.[33] The shift from the earlier pandemic as an emergency to a more routine phase is complex. The healthcare decisions that are being made often rely on emerging and imperfect data, which is inherently uncertain. That those outside of healthcare experience this same uncertainty is not surprising.

This investigation also indicates that the resumption of activity may have challenges for older adults not considered by many in the planning processes. Specifically, it was reported that returning to in-person events was hindered by spacing and the acoustic issues involving masks. Gatherings in large spaces were purported to be safer. However, the acoustics and lighting needed to be assessed with accommodations considered for normal and pathological aging changes to make the resumption of activity accessible for older adults. In addition, new programs to support social capital and connectedness with technology and intergenerational connections have been recommended within reports to address the uncertainty and variability of the environment for older adults as we enter the endemic stages of COVID-19.[30]

A few participants reported limited insight into the changes that occurred during the pandemic; some even stated that ‘nothing changed’ during the pandemic. These statements could result from living in an ALF itself (and having a more routine daily schedule) or not remembering the changes that occurred over the preceding year. The potential for cognitive impairment in a few participants may lead those residents not to experience the intense emotional losses that other participants reported during the pandemic shutdown.

4.1. Limitations

Limitations of this mixed methods study include the small sample size, recruitment during the COVID-19 pandemic, and potential investigator interpretation biases in the analysis of qualitative themes. This study only recruited 10 participants for the survey collection and 8 participants

for interviews primarily due to difficulty communicating with residents during the stricter shutdown policies of the pandemic. This limits the generalizability of the results. However, expanding the survey data collection also to include semi-structured interviews allowed the investigators to further triangulate the QOL results with a richer context for analysis.

Due to the ongoing pandemic restrictions, participants recruited were typically those who self-initiated activities within the assisted living facility with minimal prompting. The investigators could not consistently complete recruiting methods as envisioned due to the assisted living facility's variability in the in-person pandemic restrictions. The participants that joined the study were able to read through the flyers delivered to their apartments and were willing to join with minimal verbal prompting. There is the potential that residents with low vision were less likely to participate due to the recruitment methods being primarily visual, with a few staff verbally reminding residents about the study when available in their schedule. In addition, clients with mild cognitive impairment may have had increased difficulty completing survey items due to short-term memory loss and/or poor executive functioning. Investigators attempted various means of increasing recruitment methods, such as sending a recruitment video to broadcast to residents and frequent emailing/communication regarding recruitment efforts to the program director at the assisted living facility.

Investigator biases may be present in interpreting qualitative themes given the primary investigator's backgrounds as physical and occupational therapists who primarily worked with older adults. When reviewing participant interviews of those who reported no changes and/or only positive reports of quality of life during the pandemic, the investigators were led to question the participants' cognitive insight into circumstances. There were specific items in these extreme cases where the participants' self-reports did not match the factual information provided by the ALF. However, the interpretation that their sense of the quality of life being positive or unchanged during the pandemic was strictly due to cognitive decline may be unrepresentative of all factors influencing the participants' mindsets. Kasar & Karaman[30] found within their scoping review that variability in the older adult quality of life impact from COVID-19 pandemic restrictions may also be influenced by personality traits of optimism versus anxiety and the interpreted threat of the pandemic based on the older adults' living situation.

4.2. Future Research

As pandemic restrictions lift, there now exists more opportunity for regular intergenerational contact to increase social capital, allowing investigation into QOL and intergenerational programming in an ALF facility. Future research will focus on age-related perceptions and attitudes before and after regular intergenerational contact for both the student and older adult residents. Specific program evaluation and how different intergenerational activities (e.g. individual vs. group activity) impact QOL and age-related attitudes in the facility will be explored. Additionally, student residents can be compared to non-resident peers to see if there are reasons that students choose to live in an intergenerational living facility. The benefits of intergenerational contact between younger and older residents will help guide future ALF programming and communication with potential future residents.

5. Conclusion

Older adult residents in assisted living facilities would benefit from additional socialization, purpose-driven interactions, and physical activity programming to maintain and sustain the quality of life within the endemic stages of COVID-19. Investigating quality of life amid the global pandemic leads to additional questions of how the context of the living environment and cognition versus the pandemic circumstances influence older residents' self-perceived quality of life. Intergenerational programming and living opportunities may provide a novel avenue to support the quality of life of older adult residents in assisted living facilities.

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