Research Article

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Quality of Life of Nursing Home Residents: A Comparative Study of Persons with and Without Dementia in Regular Units, and Persons with Dementia in Different Care Settings

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Abstract

Purpose: To compare the quality of life (QoL) between persons with and without dementia in regular nursing home units, and to compare the QoL between persons with dementia in different care settings.

Method: A one-time survey was carried out using the adapted Norwegian version of the dementia specific questionnaire, QoL-AD. Subjects were non-random (convenience) sample.

Results: No significant differences in QoL-AD score between residents with and without dementia in regular units ($p=0.38$) and between residents with dementia in different care settings ($p=0.27$) was found. A significant difference in QoL-AD score between residents with different marital status ($p=0.05$) was observed.

Conclusion: The study identified no significant differences in QoL among people with and without dementia in regular units and between residents with dementia in regular units and special care units. Married residents had significantly lower quality of life than unmarried.

Keywords: Quality of life; Dementia; Non-dementia patients; Interview; Regular nursing unit; Special care unit

Introduction

Dementia is a condition affecting a large number of people with advanced age. The increase in the number of elderly people and the corresponding increase in the prevalence of dementia in society have resulted in more attention being given to the issue of quality of life (QoL) for people with dementia [1]. As the patients' dependency increases, their care becomes more complex [2] and requires more time per week compared to residents without dementia in the same age group [3]. A number of concerns related to care of persons with dementia have been identified, including the need for gainful occupation and companionship during daytime hours [4], neglect (e.g., being given no help with eating, or not receiving a response to calls) [5], a lack of participation in leisure activities such as going out for a walk [6] and no fair standard of care [7]. A study conducted by Ballard and co-workers found that during a six-hour period of observation, patients with dementia spent only 50 minutes (14% of the time) communicating with staff or other residents and less than 12 minutes (3% of the time) participating in everyday constructive activities [7].

To provide the highest level of care and attention, the QoL of residents with dementia as individuals needs to be assessed [8]. Quality of life is a subjective rating by the individual of the overall evaluation of his or her life in general, that is "how satisfied they are, all things considered, with their current lives" [9]. A QoL assessment would recognize residents with dementia as individuals, provide information about the effects of intervention to maintain or enhance life quality [10], help develop guidelines for dementia care [11], and can be of great importance to residents with dementia and to their families [12].

Approximately 70,000 people in Norway live with diagnosed dementia [13], of which about 35,000 live in Norwegian nursing homes [2] making up about 81% of the total Norwegian nursing home population [14]. Eighty-five percent of all municipalities in Norway have established special care units (SCUs) in nursing homes for persons with dementia, constituting only 21% of total nursing home capacity [15]. A considerable proportion of persons with dementia are therefore living in the regular units (RUs) alongside persons without

dementia. SCUs are located within the existing nursing homes, but may differ in terms of physical environment, program, and staffing patterns [16]. The possibility of providing person-centred care was the rationale for establishing SCUs for persons with dementia. As Hoe et al. said, "It would be interesting to look at the quality of life of residents with dementia compared to residents without dementia who live in the same care homes" [17].

The aim of the present study is therefore to compare the QoL of nursing home persons with and without dementia living in RUs, and to compare the QoL of persons with dementia in RUs and SCUs. This study also will assess the relationships between the QoL and socio-demographic variables such as, gender, marital status, and cognitive impairment. It is hypothesized that the quality of life of persons without dementia in RUs would be lower than persons with dementia in RUs; the QoL of persons with dementia in SCUs would be higher than their fellow residents in RUs, and that there would be an association between QoL and background variables such as, gender, marital status, and cognitive impairment (MMSE score).

Materials and Method

Sample

A convenience sample was recruited from nursing home residents in Bergen, the second largest city of Norway. Nursing staff identified a total number of 195 persons with and without dementia. Information

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Received August 05, 2013; Accepted September 05, 2013; Published September 09, 2013

Citation: Kada S (2013) Quality of Life of Nursing Home Residents: A Comparative Study of Persons with and Without Dementia in Regular Units, and Persons with Dementia in Different Care Settings. J Gerontol Geriat Res 2: 129. doi:[10.4172/2167-7182.1000129](https://doi.org/10.4172/2167-7182.1000129)

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regarding the presence of dementia was based on medical records. In Norway, dementia diagnosis is based on ICD-10 criteria. It was a prerequisite that the participants were alert and oriented to people, place, time, and who could see and hear enough to complete the face-to-face interview. Furthermore, a Mini Mental State Examination (MMSE) score of greater than or equal to 8 was required to be included in the study. Of the potential participants, 135 persons met the criteria (persons with dementia in RUs (N=67), persons without dementia in RUs (N=35) and persons with dementia in SCUs (N=33)) (Table 1).

Procedure

Head nurses and/or Directors of the Boards of Nursing Homes were contacted to request their consent regarding participation in this study. An informational letter along with a consent form was given to all respondents and their family/caregivers. This informational letter clearly outlined the aims of the project, provided an assurance of the confidential treatment of information gathered from the questionnaire/interview, stressed the voluntary nature of participation, and finally informed participants that they could access the results of the survey by contacting the author.

Measures

The quality of life Questionnaire: QoL was measured using the modified version of (QoL-AD) [18]. The original QoL-AD consists of 13 items measuring domains such as physical condition, mood, and relationship with friends and family. The QoL-AD questionnaire adapted for this study changed item “marriage” to “relationship with staff”. Further, based on a study by Edelman et al. (2005) that was adapted for residential settings, two more items (ability to live with others and ability to make own decisions) were included and the wording of three items were changed (“Life as a whole” was changed to “life overall”; “ability to do chores” was changed to “ability to keep busy”; and “self as a whole” was changed to “self overall”) [8]. The Norwegian version of the questionnaire therefore consisted of a total of 15 QoL-AD items (physical health, energy, mood, living situation, memory, family, relationship with staff, friends, self overall, ability to keep busy, ability to do things for fun, money, life overall, ability to live with others and ability to make decisions), and it covered demographic information such as age, gender, marital status, MMSE score and care setting. The 15 items adapted in this study were rated according to a 4-point Likert scale (1 being poor and 4 being excellent), for a total possible score ranging between 15 and 60, with higher scores signifying a better QoL.

Interview: All interviews were carried out individually in the nursing home after residents had eaten breakfast, between the hours of 10 am and 12 pm or after residents had eaten lunch, between the hours of 2 pm and 4 pm. Face-to-face interviews were carried out to motivate subjects and to increase their attention span. A brief introduction was given prior to the interview. In order to avoid influencing the patient’s responses, the interviewer followed a standardized protocol. Residents either filled in the QoL-AD questionnaire themselves in the presence of the interviewer or responded orally and the interviewer filled in the item. The majority of the individuals (n=118) filled the questionnaire themselves (32 persons without dementia in RUs, 58 persons with dementia in RUs and 28 persons with dementia in SCUs). As residents with dementia tire easily [19], the average interview duration was kept to 25 minutes. All assessments were done by a nursing staff that had extensive experience working with nursing home residents.

Ethical considerations: The Regional Ethical Committee for Medical Research and the Norwegian Social Science Data Services

approved this study. The head nurses or Directors of the Board of participating institutions gave their permission for the involvement of their institutions in this study. All patients/relatives gave their informed consent.

Statistical analysis: Cronbach’s alpha was used to assess the internal consistency reliability of the adapted QoL questionnaire. Descriptive statistics (frequencies, percentages, means and standard deviations (SD) were presented for QoL-AD item scores. An independent t-test was used to compare the QoL-AD scores by gender (Group 1=Men; Group 2=Women). Statistical comparisons were made using a one-way analysis of variance (with Scheffé post hoc tests) between resident age, MMSE and QoL-AD score. Statistical comparisons were also made using a one-way analysis of variance (with Scheffé post hoc tests) to assess QoL-AD score as the dependent variable, with subjects’ group (Group 1=persons with dementia in RUs; Group 2=persons without dementia in RUs; Group 3=persons with dementia in SCUs); MMSE score (Group 1=MMSE score above 23; Group 2=MMSE score between 20 and 23; Group 3=MMSE score between 10 and 19; Group 4=MMSE score under 10), and marital status (Group 1=Married; Group 2=Unmarried; Group 3=Widowed). A general linear model (GLM) procedure was used to identify possible associations between gender, resident groups, marital status and MMSE score with the QoL-AD score. The QoL-AD scores (dependent variable) were analyzed as a continuous variable. Differences with a p-value of 0.05 and less than 0.05 were considered to be statistically significant. All statistical analyses were carried out with SPSS, version 17.0 (SPSS Inc, Chicago, USA).

Results

The internal consistency reliability measured by Cronbach’s alpha was 0.85. Mean and standard deviations of age, MMSE score and QoL-AD score are shown in Table 2. The percentage of participants who responded with ‘excellent’ or ‘good’ to each of the QoL-AD items is shown in Table 3.

Independent t-test identified no significant gender difference in QoL-AD scores (p=0.802). Analysis of variances showed significant differences in QoL-AD scores by marital status (p=0.013), MMSE score (p= 0.004) and residents group (p=0.002). Post-hoc multiple comparisons (Scheffe) tests indicated that the married participants had significantly lower QoL-AD score than unmarried (31.17, SD 7.12 versus 36.77, SD 7.64, p= 0.050) and widowed persons (31.17, SD 7.12 versus 36.54, SD 7.00, p=0.015). With regard to MMSE score,

Age , years; mean (± SD)	86.05 ± 7.8
Care setting, N (%)	
Residents with dementia in RUs	67 (49.6 %)
Residents without dementia in RUs	35 (25.9%)
Residents with dementia in SCUs	33 (24.4%)
Gender, N (%)	
Female	106 (78.5%)
Marital status, N (%)	
Married	18(13.3%)
Unmarried	22 (16.3%)
Widowed	95 (70.4%)
MMSE score, N (%)	
<10	14(10.4%)
10-19	53(39.3%)
20-23	26(19.1%)
>23	42(31.2%)

Table 1: Resident characteristics N=135.

Variable	Residents with dementia in RUs	Residents without dementia in RUs	Residents with dementia in SCUs	P values	
				*	**
Age	87.28 ± 6.84	83.57 ± 9.38	86.18 ± 7.56	0.075	0.800
MMSE Score	17.99 ± 5.11	27.23 ± 1.35	12.09 ± 3.71	<0.001	<0.001
QoL-AD Score	35.54 ± 6.94	39.17 ± 6.63	33.00 ± 7.51	0.049	0.239

*P value for residents with and without dementia in RUs

** P value for residents with dementia in RUs and SCUs

Table 2: Mean age, MMSE score and QoL-AD score and standard deviations between resident groups.

QoL-AD items	Excellent / Good (%)		
	Residents with dementia in RUs	Residents without dementia in RUs	Residents with dementia in SCUs
Physical health	23.9	20.0	27.3
Energy	16.4	28.6	27.2
Mood	47.7	57.2	44.5
Living situation	46.2	68.5	54.6
Memory	40.3	54.3	30.3
Family	73.2	91.4	78.5
Relation with staff	67.2	82.9	63.6
Friends	44.8	54.3	30.3
Self overall	31.3	37.2	30.3
Ability to keep busy	17.9	22.9	27.2
Ability to do things for fun	17.9	28.6	18.2
Money	62.7	71.4	33.3
Life overall	43.3	48.5	45.4
Ability to live with others	41.8	60.0	39.4
Ability to make decisions	35.8	68.6	18.2

Table 3: Frequency distributions of responses to individual QoL-AD items.

participants with an MMSE score more than 23 reported significantly higher QoL-AD scores than residents with an MMSE score between 10 and 19 (38.71, SD 6.40 versus 33.32, SD 7.06, $p=0.004$). No other significant differences were identified. In relation to resident groups, residents with dementia in RUs had significantly lower QoL-AD score than residents without dementia in RUs (35.54, SD 6.94 versus 39.17, SD 6.63, $p=0.049$), and residents with dementia in RUs had higher QoL-AD score than residents with dementia in SCUs (35.54, SD 6.94 versus 33.00, SD 7.51, $p=0.239$), however this difference was not significant. An item-by-item QoL-AD score between residents with and without dementia in RUs showed significant differences for the items “living situation” ($p=0.024$), “family” ($p=0.022$), and “ability to make decisions” ($p<0.001$) (Table 4). Significant difference between residents with dementia in RUs and SCUs was reported for the item “money” ($p=0.006$) (Table 4).

The results of the general linear model are shown in Table 5. There were no significant differences in QoL between residents with and without dementia living in RUs ($p=0.38$) and between residents with dementia in RUs and their fellow residents in SCUs ($p=0.27$). The study identified significant association between QoL-AD score and marital status and that married residents reported significantly lower QoL than unmarried residents ($p=0.05$). No other statistical significant differences were observed between the groups.

Discussion

The current study compared the QoL between residents with and without dementia in RUs, as well as between residents with dementia in RUs and in SCUs. The results indicate that the hypothesis regarding the quality of life of persons without dementia in RUs would be lower than persons with dementia in RUs and the QoL of persons with dementia in SCUs would be higher than their fellow residents in RUs were not supported. A finding that indicates that there is no significant

difference between people with and without dementia in RUs is surprising, as one might expect that the QoL of residents without dementia might be adversely affected as a result of living with dementia residents. Residents with and without dementia have different needs [16], therefore living in close proximity to residents who might have been more appropriately placed in a SCUs could have decreased the QoL for residents without dementia. A possible explanation for this finding may be that the number of places at SCUs in Norwegian nursing homes is smaller than the number of residents that qualify for residence in nursing homes. Residents must exhibit substantial dependency due to physical and/or mental impairment to be granted residence in Norwegian nursing homes [20], and, since space is limited, residents without dementia might be satisfied with simply being placed in a nursing home regardless of their fellow residents.

With regard to dementia residents in different care settings, there was no significant differences in QoL between residents with dementia living in RUs and in SCUs. This is unexpected as SCUs aim to address dementia residents’ needs in relation to their physical and environmental requirements, thereby having a positive effect on the QoL [21]. Residents benefit from living in purpose-built SCUs by experiencing conditions that allow them to flourish; they experience feelings of greater well-being and calm and function better, and there is less utilization of anti-psychotic medications and physical force [16]. One possible explanation for the finding could be that the residents with dementia in RUs with less cognitive impairment than residents in SCUs may have more opportunities for social engagement and to communicate their feelings, thus leading to a better QoL. Another possible explanation could be that the SCUs in Norwegian nursing homes following a medical model may have not provided a highly suitable environment for these patients. Environmental factors may have influenced the QoL rating [22].

The study found that the QoL-AD score was significantly higher

QoL-AD items	Residents with dementia in RUs	Residents without dementia in RUs	Residents with dementia in SCUs	P -values	
				*	**
Physical health	2.04 ± 0.86	2.03 ± 0.62	2.00 ± 0.90	0.995	0.967
Energy	1.99 ± 0.69	2.11 ± 0.68	1.94 ± 0.86	0.698	0.958
Mood	2.48 ± 0.82	2.66 ± 0.80	2.24 ± 0.90	0.591	0.421
Living situation	2.46 ± 0.89	2.97 ± 0.86	2.48 ± 0.87	0.024	0.993
Memory	2.40 ± 0.74	2.80 ± 0.83	2.03 ± 0.85	0.059	0.090
Family	2.97 ± 0.80	3.46 ± 0.74	2.91 ± 0.98	0.022	0.942
Relation with staff	2.94 ± 0.85	3.23 ± 0.73	2.70 ± 0.98	0.276	0.412
Friends	2.36 ± 1.15	2.57 ± 1.12	2.00 ± 0.86	0.640	0.300
Self overall	2.34 ± 0.84	2.40 ± 0.88	2.06 ± 0.72	0.948	0.283
Ability to keep busy	1.88 ± 0.88	1.80 ± 0.87	2.03 ± 0.81	0.904	0.716
Ability to do things for fun	1.85 ± 0.82	1.94 ± 0.92	1.88 ± 0.69	0.867	0.987
Money	2.72 ± 0.83	2.97 ± 0.95	2.12 ± 0.82	0.369	0.006
Life overall	2.40 ± 0.78	2.63 ± 0.81	2.33 ± 0.99	0.441	0.927
Ability to live with others	2.40 ± 0.93	2.66 ± 0.77	2.30 ± 0.81	0.374	0.863
Ability to make decisions	2.30 ± 0.71	2.94 ± 0.76	1.97 ± 0.64	<0.001	0.099

*P value for residents with and without dementia in RUs

** P value for residents with dementia in RUS and SCUs

Table 4: Mean Scores, Standard Deviations (±) and P-values for residents with and without dementia in different care settings on QoL-AD components.

Variable	Coefficient (B)	SE	P value	95% CI	
				Lower bound	Upper bound
Resident group					
Residents with dementia(RUs)	Ref	Ref	Ref	Ref	Ref
Residents without dementia (RUs)	2.506	2.9	0.38	-3.183	8.195
Residents with dementia (SCUs)	-1.804	1.6	0.27	-5.046	1.438
Gender					
Woman	Ref	Ref	Ref	Ref	Ref
Man	0.196	1.5	0.89	-2.789	3.181
MMSE score					
>23	Ref	Ref	Ref	Ref	Ref
20-23	-0.326	2.9	0.91	-6.185	5.533
10-19	-2.019	2.8	0.48	-7.733	3.696
<10	0.466	3.4	0.89	-6.192	7.123
Marital status					
Unmarried	Ref	Ref	Ref	Ref	Ref
Married	-4.432	2.3	0.05	-8.906	0.041
Widowed	-0.063	1.6	0.97	-3.342	3.216

Ref= reference

Table 5: Factors associated with QoL-AD score and resident group, gender, MMSE score or marital status using a general linear model.

for unmarried residents compared to married residents. This result was surprising, as it is expected married residents to have greater support. Spouses provide closeness, intimacy and sharing [23]. Possible explanations for this finding could be that the married persons, used to the presence of their partner, feel sad and lonely in these environments. It has been reported that married persons are less likely to include friends and neighbours in their social network [24].

As with any study, this study was constrained by certain limitations. The adapted Norwegian version of the 15-items QoL-AD questionnaire was not validated. Only 35 residents without dementia and 33 residents with dementia in SCUs qualified according to the criteria and participated in this study. In addition, a convenience sample was recruited and there is no information about the duration of the residents' stays in nursing homes and other somatic diseases. The QoL of residents without dementia was also measured using the questionnaire that measured the QoL of dementia residents. It is therefore suggested that another study be conducted in which a larger representative population is included, and the SF-36 generic quality

of life questionnaire for people without dementia is employed, and in which the importance of various residential environments is taken into consideration.

Conclusion

The study showed no significance difference in QoL-AD score among residents with and without dementia in RUs and between residents with dementia in different care settings. Married residents reported significantly lower QoL-AD score than unmarried.

Acknowledgement

I thank Prof. Emeri. Harald Nygaard and Dr. Jon Terje Geitung for their comments and valuable corrections, Tore Wentzel-Larsen for his valuable assistance in statistical analysis and am indebted to all participants.

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