

Research Article

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Loneliness in the context of quality of life of nursing home residents

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Abstract: Background. Numbers of the elderly have been on a steady increase both in Poland and other countries of the world. As they age, their health declines and they need help with their housekeeping. This, coupled with the transformation of intergenerational into single-generation or nuclear family structures, causes a markedly rising demand for institutional care. Holistic care of an elderly nursing home resident requires a comprehensive approach and consideration for their feelings. Loneliness and solitude are increasingly common among these feelings, undoubtedly affecting quality of life.

Method. 250 elderly residents of seven nursing home situated in Mazovia, Poland, have been examined using: De Jong Gierveld Loneliness Scale, WHOQOL-BREF Questionnaire, Basic Hope Scale (BHI-12), Satisfaction with Life Scale (SWLS), Acceptance of Illness Scale (AIS).

Results. Loneliness affects nearly 40% residents of the homes surveyed. Quality of their residents' lives is reduced. Relations with their families and levels of motor efficiency imply a sense of loneliness. Degrees of illness acceptance, ability to adjust to change, and life satisfaction influence the level of loneliness felt.

Conclusion. 40% of nursing home residents exhibit a sense of loneliness, while the greater loneliness and solitude, the lower the quality of life.

Keywords: Loneliness; Solitude; Quality of life; The elderly; Nursing home

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1 Introduction

Aging of societies is a process apparent in nearly all countries worldwide, with equally distinct social, medical and economic consequences. A UN report [1] on aging of the global population shows it to be unprecedented, with the 21st century set to witness an even faster pace. The phenomenon is universal, global, yet particular countries are at widely varying stages and the rate of changes is considerably diversified.

Europe, 'the old continent', is greatly exposed to this development and substantial demographic shifts can be observed in Poland as well [2]. Eurostat forecasts the European Union population aged 65 and more will expand from 19.2% in 2016 to 25.7% in 2035 [3].

The United Nations Organisation predicts the share of population aged above 64 relative to those between 15 and 64 years of age will double to reach almost 50% in both the US and Europe in 2015-2100 [4]. A vast majority of seniors stay at home, though more and more elderly will be forced to reside in nursing homes [5], which should display care for their residents' quality of life.

Gerontological and psychological literature distinguish between loneliness and solitude, treated as two separate conditions, objective and subjective, respectively [6]. From the sociological point of view, human loneliness is an individual's avoidance of making contact with groups and themselves. It is presented as a social phenomenon, a lifestyle and a way to satisfying needs, as well as opposition to imposed social roles and reluctance to enter intense social relationships [7]. Specialist literature shows loneliness is most painful to passive individuals without a clear sense of life. Thus, the old age, a traumatic challenge to a senior, brings awareness of the essential fact the condition offers no clear prospects of improvement, which may additionally exacerbate the sense of loneliness. Peplau, Perlman, Van Baarsen, Snijders, Smit, Van Duijn define solitude as an experienced divergence between desired and actual quality and quantity of social contacts [8,9].

In an aging society, issues of loneliness seem of increasing importance. A survey by Pikhartova, Bowling and Victor of more than 4,000 respondents aged above 50

who have not reported loneliness before shows as many as 33% expect it as they get older and 24% believe old age is a time of loneliness [10].

A range of research demonstrates loneliness affects social and health-related behaviour, and thus health condition of seniors [11-13]. Studies into connections between loneliness and physical activity in a variety of countries prove loneliness is associated with a lower likelihood of engaging in physical activity and makes it more likely to be interrupted over time [14]. Reduced social activity of the lonely is indicated by Hawkey et al. They find the extent of social networks, and quality of relationships in particular, to be key determinants of loneliness and point out the lonely are less active socially. It is therefore important to identify precursors of loneliness to exercise appropriate intervention and minimise not only psychological suffering, but also physiological decline associated with palpable deficits of social links [15]. Studies in Chicago demonstrate loneliness anticipates changes of depressive symptoms. Acknowledging significance of loneliness as a risk factor in depressive symptoms may become a major contribution to relieving potentially adverse effects on quality of life of the middle-aged and older [16]. Chronic loneliness may lead to more cigarettes smoked and more chronic illnesses and is an indicator of more average stays at nursing homes [17].

It should be mentioned the sense of loneliness and solitude in the elderly also causes biological changes. Loneliness increases systolic blood pressure and vascular resistance and impairs immunity and is an added risk factor in increased morbidity and mortality [18].

It merits examination as it is associated with quality of life of this age group.

2 Methods

The study was carried out among elderly residents of seven nursing homes in Mazovia, Poland, from April 2018 to June 2018. Approval of the institution directors had been secured in advance.

The sample was selected in two steps. Nursing homes were chosen randomly, then a survey was conducted of randomly selected residents. 350 persons were elected in this way.

Poor mental agility that would preclude answers to the questionnaire (below 7 points on the AMTS) was the key criterion excluding someone from the study. 58 individuals were eliminated, that is, 16.5% of those pre-selected. In addition, 42 of those chosen (12%) refused to take part.

The residents were given the questionnaires to complete on their own. In case of material difficulties, the interview was administered by these authors and responses were marked on the questionnaire. 250 survey questionnaires were completed. The home residents were read written information about the study, assuring their full anonymity and voluntary nature of the survey, use of its results solely for research purposes, and the possibility of withdrawing from the survey at any time without giving reasons. This was supplemented with objectives of the study and details of the researchers.

Criteria of inclusion:

- Gender: female and male,
- Age: 65 and more,
- Time of residence at a nursing home: more than 1 year,
- Conscious consent to participation in the study,
- Scoring 7 or more as per Hodgkinson's Abbreviated Mental Test Score (AMTS).

Criteria of exclusion:

- Time of residence at a nursing home: less than 1 year
- Age: below 65,
- Scoring 6 or less as per Hodgkinson's Abbreviated Mental Test Score (AMTS),
- Lack of conscious consent to participation in the study.

The draft study was approved by the Bioethics Committee with the Rzeszów University in its Resolution No. 2018/04/06 of 12 April 2018.

The method of diagnostic survey and the test technique of surveying were employed. The following research tools were applied: Hodgkinson's Abbreviated Mental Test Score (AMTS), Katz's Activities of Daily Living Scale, De Jong Gierveld Loneliness Measurement Scale, WHO-QOL-BREF Questionnaire, Basic Hope Scale (BHI-12), Satisfaction with Life Scale (SWLS), Acceptance of Illness Scale (AIS).

The results were analysed using the statistical package Statistica 10PL (level of significance $p < 0.05$).

Informed consent: Informed consent has been obtained from all individuals included in this study.

3 Results

3.1 General sample characteristics

250 elderly individuals aged above 65 were surveyed, including 157 women (62.8%) and 93 men (37.2%). The

average age was 71 for men and 75 for women (the latter were statistically significantly older). The oldest female respondent was 98. Agile individuals prevailed among those questioned (69.6%). The men taking part were more agile on average (78.5%) than women, but the difference was on the border of statistical significance. Those surveyed had stayed at their homes for an average of about 7 years. Females were longer residents to a statistically significant degree (more than 2 years) than males. There were 74 residents with 10 years or more of experience, that is, 33.8% of the respondents. A 74-year-old woman had been a resident for longest (28 years). Respondents with maximum scores on Hodgkinson's Abbreviated Mental Test Score constituted the largest group (41.6%), with 12.6% more men than women. As the scores diminished, the groupings shrank. The scoring differences between men and women were not statistically significant.

Health problems were clearly the most common causes (58.4%) that persuaded those surveyed (both male and female) to take residence at a nursing home. Nearly a half fewer (28%) indicated an independent decision. Women twice as often (24.2%) pointed to solitude as the cause of their changing residence. Differences between the sexes were statistically significant in the case of widowhood (4.3% men and 16.6% women), solitude (12.9% and 24.2%, respectively), and children moving out (1.1% and 7.6%, respectively).

Both the resident groups declared distant relatives (women 36.4%, men 26.9%), siblings (33.2% and 41.9%, respectively), and children (31.6% and 24.7%, respectively)

as the most frequent visitors. Women were distinctly more often visited by grandchildren and distant family, while men by their siblings. Statistically significant differences were noted for grandchildren, siblings, and distant relatives. Those declaring good and very good relations with their families clearly prevailed among the study participants. Women evaluated the relations 5.2% better than men did. However, every 9th woman and every 7th man indicated very bad family relations.

3.2 Loneliness and solitude among the surveyed

Women felt loneliness 4.8% more frequently than men. Every 4th woman and almost every 5th man felt loneliness to a high degree (Table 1).

Both women and men scored similarly on average on the loneliness scale: 31.2 and 30.2, respectively (no statistically significant differences were found between the genders).

Separated and married respondents scored maximum on average - 35 and 32.7 points, respectively. The divorced scored the lowest: 29.7.

Analysis of the respondents' family situation demonstrated a sense of loneliness in those declaring bad and rather bad family relations: 32.6 and 32.5 points, respectively (Table 2). The differences were statistically significant.

Table 1: Feeling of loneliness among those surveyed on the DJG scale depending on sex

	Man		Woman		Total	
	n	%	n	%	n	%
Low feeling of loneliness	59	63.4	92	58.6	151	60.4
Moderate feeling of loneliness	17	18.3	26	16.6	43	17.2
High feeling of loneliness	17	18.3	39	24.8	56	22.4
Total	93	37.2	157	62.8	250	100.0
Chi-square test	0.4844					

Table 2: DJG scale of loneliness depending on relations with family

	n	Average	sd	low.-qu.	Median	upper-qu.	Anova KW
Very good	63	27.7	7.0	23.0	28.0	33.0	0.0041
Good	111	31.5	7.3	26.0	32.0	36.0	
Rather bad	45	32.6	6.2	30.0	32.0	35.0	
Very bad	30	32.5	7.1	27.0	33.0	38.0	
Total	249	30.8	7.2	25.0	31.0	35.0	

As far as the sense of loneliness and age were concerned, the level of loneliness felt was found to escalate in those over 76 as they grow older (Table 3), yet the connection proved statistically insignificant both in ANOVA rank and the more sensitive correlation testing (Table 4).

Katz’s mobility scale displayed a statistically significant dependence ($p=0.0141$) with De Jong Gierveld loneliness scale in the nursing home residents studied. The correlation is weak and the dependence inversely proportional (Table 4).

Women felt a greater loneliness in both the social and emotional areas than did men (by 0.09 and 0.1 pts, respectively), yet no statistically significant differences in feeling lonely were detected between the sexes (Table 5).

3.3 Quality of nursing home residents’ lives

The group surveyed undertook an overall assessment of the quality of their lives. Both men and women tended to indicate an average quality of life (50.5% and 47.8%, respectively). A good quality of life was the second most commonly ticked answer (men 38.7%, women 35%). Women pointed to a very good and poor quality of life more frequently than men did (by 3.5% and 2.7%, respectively). These differences between the genders were not statistically significant (Table 6).

Men most often declared satisfaction or dissatisfaction with their health (33.3% and 30.1%, respectively); women generally avoided specifying a level of satisfaction (31.8%), followed by the same share selecting satisfaction and dissatisfaction with their health (28.7% both). 3 individuals of both the genders were very satisfied (Table 7). The environment was evaluated as the best by both the groups (men 14.2 points, women 13 pts). Women scored

Table 3: DJG scale of loneliness depending on age (5-year brackets)

Age bracket	n	Average	Sd	Low.-qu.	Median	Upper-qu.	Anova KW
<66	35	30.9	6.6	26.0	30.0	34.0	0.9375
66-70	88	30.3	7.5	24.5	31.0	35.0	
71-75	39	30.9	6.7	26.0	31.0	36.0	
76-80	33	30.5	7.5	25.0	32.0	34.0	
81-85	23	31.2	7.1	27.0	32.0	36.0	
86-90	18	31.3	8.0	27.0	31.5	34.0	
>90	14	33.5	7.9	28.0	32.0	38.0	
Total	250	30.8	7.2	25.0	31.0	35.0	

Note: low.-qu. – lower quartile, upper-qu. – upper quartile.

lowest in the psychological domain (11.9 pts), while men in the social area (12.1 pts). Only assessments of the social area by women and men showed no statistically significant differences (Table 8).

There were highly significant, inversely proportional dependences in all the areas between De Jong Gierveld Loneliness Scale and WHOQOL-BREF Questionnaire, although coefficients of correlation suggested weak and moderate dependences.

3.4 De Jong Gierveld Loneliness Measurement Scale and psychometric scales

There were highly significant, inversely proportional dependences in all the areas between De Jong Gierveld Loneliness Scale and psychometric scales, although coefficients of correlation suggested weak and moderate dependences (Table 9).

4 Discussion

Moving into a nursing home is an extremely difficult and traumatic decision for many seniors. Swedish studies

Table 4: Dependence between DJG loneliness scale and age, duration of residence at nursing home, and mobility

Characteristic studied	Coefficient of Spearman rank correlation	Test p
Age	-0.071	0.2692
Time of home residence	-0.009	0.8851
Katz’s mobility scale	-0.155	0.0141

Table 5: Feeling of social and emotional loneliness as per DJG (the values are question averages)

DJG	Sex	n	Average	sd	Low.-qu.	Median	Upper-qu.	Man-Whitney test
Overall	Man	93	2.75	0.58	2.36	2.73	3.09	0.2636
	Woman	157	2.84	0.70	2.27	2.91	3.18	
	Total	250	2.80	0.66	2.27	2.82	3.18	
Social	Man	93	2.83	0.78	2.20	2.80	3.40	0.4422
	Woman	157	2.92	0.86	2.20	2.80	3.60	
	Total	250	2.89	0.83	2.20	2.80	3.60	
Emotional	Man	93	2.67	0.72	2.17	2.50	3.17	0.4093
	Woman	157	2.77	0.86	2.17	2.67	3.33	
	Total	250	2.74	0.81	2.17	2.67	3.33	

Note: low.-qu. – lower quartile, upper-qu. – upper quartile.

Table 6: Answers to general WHOQOL questions (quality of life assessment) divided by sex

	Man		Woman		Total	
	n	%	n	%	n	%
Very bad	1	1.1	2	1.3	3	1.2
Bad	7	7.5	16	10.2	23	9.2
Neither good nor bad	47	50.5	75	47.8	122	48.8
Good	36	38.7	55	35.0	91	36.4
Very good	2	2.2	9	5.7	11	4.4
Total	93	35.9	157	62.8	250	100.0
Chi-square test	0.64795					

Table 7: Answers to general WHOQOL questions (how satisfied with life) divided by sex

	Man		Woman		Total	
	n	%	n	%	n	%
Very dissatisfied	12	12.9	14	8.9	26	10.4
Dissatisfied	28	30.1	45	28.7	73	29.2
Neither satisfied nor dissatisfied	19	20.4	50	31.8	69	27.6
Satisfied	31	33.3	45	28.7	76	30.4
Very satisfied	3	3.2	3	1.9	6	2.4
Total	93	35.9	157	62.8	250	100.0
Chi-square test	0.33874					

claim sense of loneliness in an unfamiliar place like a nursing home is associated with waiting for death as release from the present, necessity of subordinating yourself to values and standards set by personnel, and the need for courage to function in that community [19].

Our research has found loneliness affects 39.6% residents of the homes examined (the average response of 2.80), with as many as 22.4% respondents exhibiting high loneliness. The same average was produced in a study of Lublin nursing home residents by Herman, Ciszek, Gortat, who generated an average response of 2.8091 [20]. A less intense loneliness was found by Jansson et al., with 9% of those surveyed feeling lonely often or always and 26% sometimes [21]. Reports from Norway show a far greater loneliness than our own study, with 56% of old people's home residents experiencing loneliness, although that study concerned cancer patients [22]. Extremely high results are reported in Malaysia, where all elderly home residents feel lonely and 75% very lonely [23].

Ausín, Muñoz and Castellanos in Spain attempted to identify variables that best predict age-related loneliness. They believe individuals of low economic status, impaired quality of life, and low life satisfaction are most exposed to loneliness. In addition, they point to those unsatisfied with their social contacts and suffering from mental disorders, in particular, anxiety disorders. Women are more prone to feelings of loneliness than men [24].

Our study has shown relations with family and level of mobility determine the sense of loneliness in nursing home residents. Age and time of residence do not exhibit such a dependence. These results correspond with those reported by Aung et al., namely, a resident's functional condition and frequency of family visits have a substantial effect on feelings of loneliness. Such relations are not identified for age, gender, marital status or standard of education [23]. Lack of a correlation with age and marital status have been noted by these authors as well.

Table 8: Quality of life of those surveyed as per WHOQOL-BREF split into domains and sex

WHOQOL	Sex	n	Average	sd	Low.-qu.	Median	Upper-qu.	Man-Whitney test
Physical	Man	93	13.2	2.8	10.9	13.1	14.9	0.016196
	Woman	157	12.1	3.0	10.9	12.0	13.7	
	Total	250	12.5	3.0	10.9	12.6	14.3	
Psychological	Man	93	12.8	2.4	11.3	12.7	14.7	0.0276
	woman	156	11.9	3.1	10.0	12.0	14.7	
	Tota	249	12.2	2.9	10.0	12.7	14.7	
Social	Man	93	12.1	2.1	10.7	12.0	13.3	0.1357
	Woman	157	12.5	2.3	10.7	13.3	13.3	
	Total	250	12.3	2.3	10.7	12.0	13.3	
Environmental	Man	93	14.2	2.3	12.5	14.5	16.0	0.0003
	Woman	156	13.0	2.7	11.0	13.0	15.0	
	Total	249	13.5	2.6	12.0	14.0	15.5	
Total of the domains	Man	93	52.2	7.5	47.8	52.9	57.0	0.0173
	Woman	156	49.5	9.1	43.5	50.0	55.8	
	Total	249	50.5	8.6	45.0	51.3	56.2	

Note: low.-qu. – lower quartile, upper-qu. – upper quartile.

Table 9: Dependence between DJG scale of loneliness and selected psychometric scales

Characteristic tested	Coefficient of Spearman rank correlation	Test p
Satisfaction with life scale SWLS	-0.362	p<0.0001
Basic Hope Scale BHI-12	-0.285	p<0.0001
Acceptance of Illness Scale AIS	-0.339	P<0.0001

Other factors are stressed by Jansson et al. They regard loneliness as related to low self-assessment of health, worse moods, dependence on others, disability, depression, and poor sight. They note no such connection with age or co-morbidities [21].

A group of Spanish researchers have proposed a connection between satisfaction with place of residence and loneliness. Satisfaction with place of residence influences the sense of belonging to a community and is adversely related to loneliness. These authors emphasise such a relationship obtains for the elderly who live in nursing homes and in family environments [25].

Drageset et al. point out social integration, contacts with nursing home personnel, and value modifications are unrelated to loneliness. Gender and marital status among the socio-demographic variables were significantly related to loneliness [22], which is not corroborated by our research.

Our analysis demonstrates the degree of acceptance of your medical condition, ability to adapt to change, and life satisfaction have a major effect on the level of loneliness felt. The higher the respondents scored on these scales, the less lonely they felt.

The tendency to interdependence between loneliness and life satisfaction is affirmed by Herman et al. They say a greater loneliness, especially in the social area, is associated with poorer satisfaction with life. Duration of residence in a nursing home was unrelated to loneliness in their study, which nonetheless detected a marked tendency [20].

Górna and Jaracz point out nursing home residents suffer from a lower quality of life as they have to adapt to living with individuals over whose presence they have no control [26].

According to Farzianpour, Foroushani, Badakhshan, Gholipour, Roknabadi, quality of life of nursing home residents is significantly correlated with gender. Men scored higher than women. The authors postulated their results related to women's more negative attitude to their physical health [27].

Our study has shown a reduced quality of life of residents of the institutions examined. The environment was evaluated as the best by both women and men. Women scored minimum in the psychological domain and men in the social area.

This corresponds with Kurowska and Kajut's results, where the highest average assessment was assigned to the environment and the lowest evaluation to the social and psychological domains. Quality of life is affected by a resident's everyday living, independent decision to live at an institution, and maintaining contacts with family [28]. Kurowska and Błaszczuk report residents describing quality of their life as average. The environment was evaluated as the best and the physical sphere as the worst in that case, too. The authors conclude residents need social, chiefly emotional support [29].

A study by Unalan, Gocer, Basturk, Baydur, Ozturk shows men enjoy a higher quality of life than women, with social support an important influence [30].

Research in Serbian nursing homes points to illness as a significant factor reducing quality of life, whereas age, education and marital status have no effect. Like in our own study, men scored lower in the social domain [31].

Out of four areas of quality of life, the physical scored highest and social the lowest in Indonesian studies. The authors cited social support, chronic co-morbidities, gender, outdoor activity, and entertainment as factors associated with quality of life [32].

An interesting study of elderly nursing home residents has been carried out in Brazil. Emphasis was placed on connections between strategies of dealing with spiritual and religious stress and quality of life. The ability to manage stress was positively correlated with a majority of WHOQOL-OLD and WHOQOL-BREF domains. On the other hand, inability to handle spiritual and religious stress was adversely correlated with aspects of 'death and dying' in WHOQOL-OLD [33].

Hong Kong researchers note analgesia, family links, and special attention to cognitive disorder individuals are important factors in providing an improved quality of life to elderly in nursing homes [34].

Nursing home residents in Łódź region described their quality of life as 'neither good nor bad'. This is true of both women and men [35]. This tendency is corroborated by our own study.

We have noted a significant dependence between loneliness and quality of life, which is affirmed by research in Turkey. It has demonstrated the lonely score far lower on all aspects of quality of life (with the exception of death and dying) than those who are not lonely [30].

5 Conclusion

1. Loneliness affects nearly 40% residents of the nursing homes studied, with more than 22% experiencing high loneliness.
2. Relations with family and level of mobility imply a sense of loneliness in residents of nursing homes. Such a dependence has not been proven for age or duration of home residence.
3. Degree of illness acceptance and ability to adjust to change influence the level of loneliness felt.
4. There is a significant dependence between life satisfaction and level of loneliness, namely, the higher the satisfaction, the lower the loneliness.
5. An inversely proportional dependence applies to the levels of loneliness and solitude felt by nursing home residents and quality of their life, which means the greater loneliness and solitude they feel, the lower their quality of life.

Conflict of interests: The authors do not declare a conflict of interest

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