

Full Length Research Paper

Mobility and quality of life in elderly and geriatric patients

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Quality of life in older people is significantly influenced by their mobilization. Using the statistical comparison of observed groups we found out that the mobilization of elderly and geriatric patients improves their quality of life. We used nonparametric Mann - Whitney test as an evaluation method. To determine relations between variables we used the Spearman correlation coefficient. Geriatric patients have shown rates of mobility in the BREF questionnaire (item 15) and ADL test at the same level. Physical activity represents a significant attribute of mobility in seniors, which confirmed the results of foreign studies. Reduced mobility is a maximum barrier in hospitalized geriatric patients. The positive overall impact of physical activity was reflected in increased confidence of seniors in their own abilities. In nursing there must be a continuous mobilization of geriatric patients according to their degree of dependence.

Key words: Mobility, quality of life, senior, geriatric patient, correlation, self-sufficiency.

INTRODUCTION

Limitation of physical activity, presence of chronic illness and old age does not always mean a decline of life quality. Benefits for the old people can produce the supporting factors, such as social integration, optimism, confidence and desire to lead a fulfilling life and so on. It means in practice that the objective medical findings may not explicitly agree with the current psychological and social state of geriatric patients. A decline in quality of life in the elderly is reflected by the presence of negative feelings, lack of meaning in life, addictions of various kinds (or dependence on others) and a loss of their autonomy.

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Abbreviations: WHOQOL – BREF, Quality of life questionnaire; ADL, activities of daily living; PASE, physical activity scale for the elderly; ESS, exercise self-efficacy scale; LLF-DI, late life function and disability instrument; SWLS, satisfaction with life scale; APACHE, acute physiology, age and chronic health evaluation.

Patient satisfaction is one of the important indicators of health care quality. The current philosophy of nursing care is a priority focus on meeting the needs of the patients, especially as they relate to the actual disease. The rate of overall patient satisfaction is an important indication of the level of a particular medical device. Quality of health care and patient satisfaction tracking results are good feedback for caregivers and health facility management (Bártlová and Hnilicová, 2000).

Our goal was to identify the extent to which mobility is correlated with quality of life of geriatric patients and residents in facilities for seniors. We assumed that the mobility of geriatric patients and residents in facilities for the elderly is an important aspect of their overall assessment of quality of life and will significantly differ between groups.

MATERIALS AND METHODS

In our work we used the causal comparative research, ex - post facto. To confirm the results of the research methods we used descriptive statistics.

Our research was carried out with a total number of 386 patients in the geriatric departments at the University Hospital with Policlinic

of J. A. Reiman in Prešov and the Hospital and Clinic of St. James in Bardejov, together with facilities for elderly people in the same cities. To determine the individual components of research, we used the method of obtaining data using a standardized questionnaire, the quality of life questionnaire WHOQOL - BREF questionnaire and the daily activities of daily living, ADL test. The two questionnaires were filled in with each patient/seniors individually and we respect the particularities of senior age, especially sensory impairment (changes in vision, hearing, etc.). The average length of stay in facilities for the elderly was 13.8 months (SD 1.29).

For statistical comparison of observed groups, we used the test for 2 independent selections, Mann - Whitney test. This non-parametric methodology has allowed us to detect statistically significant differences between groups in measured parameters. To determine relations between variables, we used the nonparametric, Spearman correlation coefficient.

RESULTS

Here are the results of the examination of significant differences between the groups in mobility, saturated questionnaire WHOQOL – BREF (item 15) and mobility item ADL questionnaire.

Based on the results we can conclude that patients in facilities for the elderly are clearly better moved (item 15), but currently show a lower rate of mobility in the ADL test due to greater use of assistive devices in walking (crutches and wheelchairs). We assume that this is a consequence of chronic medical complications in this group. Geriatric patients have shown rates of mobility in the BREF questionnaire (item 15). and ADL test at the same level. This demonstrates that the mobility and self-sufficiency in these patients are equally perceived items (Table 1 and Figure 1).

From the results in geriatric patients we can see that greater mobility in the questionnaire WHOQOL – BREF (item 15), is positively correlated with the overall quality of life scores of the questionnaire and negatively correlated with the value of mobility in the ADL questionnaire. Similar findings were confirmed in a group of residents in facilities for seniors. It follows that greater mobility increases the overall value of quality of life in both examined groups (Tables 2 and 3).

DISCUSSIONS

Physical activity represents a significant attribute of mobility in seniors, what was confirmed by the results of foreign studies. Those aspects (impact of physical activity on quality of life) in a community of old people were found by White et al. (2008) in USA. He assessed the physical activity, personal productivity, global quality of life, ranking their own values and boundaries of disability in a sample of 321 participants. The author found in the surveyed sample that the ranking of personal values affect the relationships between physical activity and quality of life in seniors. Similarly Proházka et al. (2006) made important observations and assessed the reasons

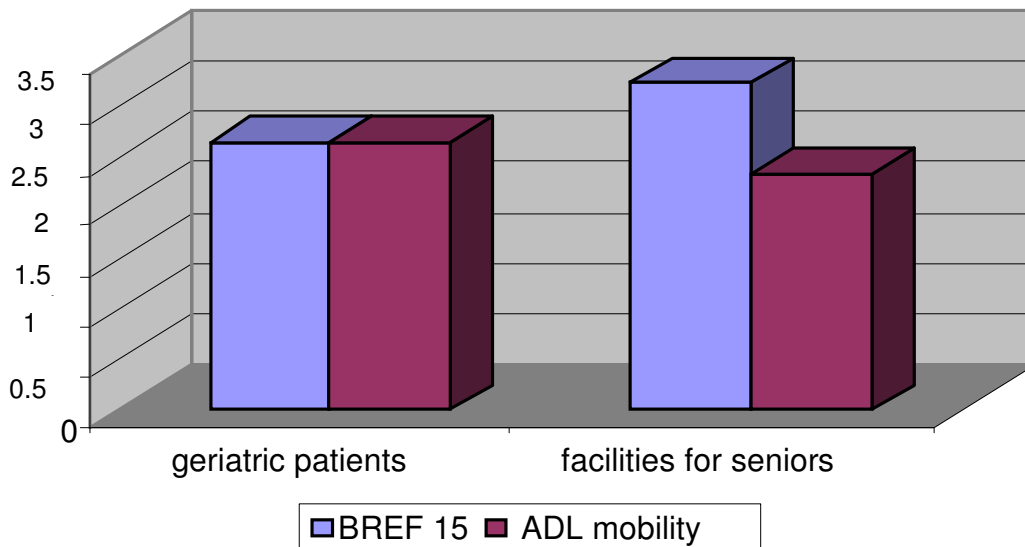
for altering physical activity and the consequences of its damage in the elderly. He found that the lowest level of physical activity often presents lower socioeconomic status of individuals. Another author, McAuley et al. (2006) tested a number of alternative models of physical activity and relationship of life quality in the community of old men and women. Physical activity scale was valued by PASE (Physical Activity Scale for the Elderly). Values of life were measured by a modified version of ESS (Exercise Self-Efficacy Scale). Physical health was measured by the instrument of LLF-DI (Late Life Function and Disability Instrument). Global quality of life was valued by the standard range SWLS (satisfaction with life scale). Using descriptive statistics he found that age ($p = .05$) was significantly associated with physical activity ($\beta = -.34$), with its own performance ($\beta = .30$), with personal values ($\beta = .22$) and satisfakciou ($\beta = .12$). He pointed to the fact that personal values play an important role in the results of physical activity and subject to the quality of life indicators. However, investigated relations depends on the impact of demographic factors. Based on these findings, the author proposes programmes to improve physical activity. It also reaffirms the values that seniors who get physical exercise, change their view of their disability status.

Thus, foreign studies, show that mobility is a central aspect of quality of life in all seniors. They agree with an evaluation of our research, where mobility is essential to the quality of life in seniors, the level of significance is $p < .001$. High probability of finding "provokes" us to create the similar programmes to improve mobility as McAuley et al. (2006) suggested in his research. Reduced mobility is a maximum barrier in hospitalized geriatric patients. This is confirmed by research conducted in Birmingham, UK, in a sample of 498 hospitalized patients aged over 70 years. The results of reduction in mobility or immobility during hospitalization was studied. During this period, a senior state was characterized by increasing disability, risk of iatrogenic damage and needs of nursing care. In research, these tests were used, Mini-Mental test, ADL test, test APACHE (Acute Physiology, Age and Chronic Health Evaluation). Mobility of geriatric patients was evaluated in addition to the patients themselves and nurses have used the methods of controlled interviews. Low mobility was observed in 16% of patients, moderate levels of mobility were found in 32% of elderly individuals and high level of mobility up to 52% in geriatric patients. Those results have initiated the needs to mobilize and increase self-sufficiency in terms of treating these patients (Brown et al., 2004). Foreign studies from the UK and Asia are consistent with our assertion that mobility brings self-reliance and dependence to the patients. In our research, geriatric patients showed the same values in the BREF scale (item 15), mobility ($M = 2.64$) and the ADL test ($M = 2.64$). For these reasons, the collaboration of nursing staff and physiotherapists related to a geriatric patient is very important. We suggest setting up the rehabilitation

Table 1. Statistical results of difference investigation between the two groups identified by Mann - Whitney test.

Variable	Geriatric patients		Facilities for seniors		z
	M	SD	M	SD	
BREF 15	2.64	1.25	3.22	1.17	- 4.761***
ADL moving	2.64	1.45	2.33	1.48	- 2.541**

Significance level: * $p < .05$; ** $p < .01$; *** $p < .001$

**Figure 1.** Comparison of mean values using WHOQOL - BREF questionnaire and using mobility of ADL questionnaire in geriatric patients and residents in facilities for seniors.**Table 2.** Statistical results of Spearman correlations among the survey items as WHOQOL - BREF 15, ADL mobility and total score of WHOQOL - BREF in geriatric patients.

Variable	BREF 15	BREF gross score	ADL mobility
BREF 15	-	0.647***	- 0.674***
BREF gross score	0.647***	-	- 0.432***
ADL mobility	- 0.674***	- 0.432***	-

Significance level: * $p < .05$; ** $p < .01$; *** $p < .001$.

programmes for geriatric patients, depending on their level. This would be a part of standard operating procedures in the geriatric departments and clinics.

For comparison with earlier findings in Latin America a lot of old people combine the property for good health with positive quality of life. Up to 62% of subjects aged over 65 years suffer from chronic diseases (Eberhardt et al., 2001). Potential chronicity of diseases associates with the functional and cognitive decline, reduced mobility and personal care. The high level of physical performance in old age supports mobility, flexibility and protection against falls. There is a significant relationship between physical

activity and emotional well-being, which affects the chronic, social and financial stress. Similarly, reduced levels of emotional well-being contribute to increased mortality of this group (Dunn et al., 2004).

The findings of American experts agree with our assertion that physical activity associates with the quality of life. Residents of sanitary facilities, showed lower rates of assistance for mobility in the ADL test ($M = 2.33$), because of the use of compensatory aids (crutches and most mallet). Geriatric patients in hospitals often lack this type of device, which was confirmed in our study. Items such as the mobility of the WHOQOL-BREF test and

Table 3. Statistical results of the survey items among Spearman correlations as WHOQOL - BREF 15, ADL mobility and total score of WHOQOL - BREF for residents in facilities for seniors.

Variable	BREF 15	BREF gross score	ADL mobility
BREF 15	-	0.475***	- 0.785***
BREF gross score	0.475***	-	- 0.319***
ADL mobility	- 0.785***	- 0.319***	-

Significance level: * $p < .05$; ** $p < .01$; *** $p < .001$.

mobility with the help of the ADL test are shown in both studied groups as equal ($M = 2.64$). We acknowledge the fact that physical incapacity means accumulation of problems that will culminate in the immobilization syndrome than it means after treatment nursing, which mainly includes the care of health complications of geriatric patient. Movement as the basis of quality of life of older people was confirmed by the finding of the Faculty of Physical Education and Sport, Charles University in Prague, entitled "Physical activity as an active style of life of seniors". Its intention was to verify the model of rational lifestyles in old age, which is the essence of motion and relaxation activities, suitable for seniors. Through monthly journal for Prague, people over 60 years of life were invited to participate in the project. It enrolled more than 100 individuals, which confirms the interest of the elderly towards physical activity. Due to limited opportunities for faculty just 30 seniors were monitored. Some candidates were not included because they had a positive recommendation from a doctor. Age range of participating was 62 to 78 years. Throughout the duration of the project (3.5 years) was evaluated long-term impact of physical activities regularly carried out on the lifestyle and sense of personal independence. Participants completed a number of functional, motor and psycho - social tests during the project, which were evaluated. This mainly relates to the following assessment:

- (a) Heart rate was monitored by controlled exercises.
- (b) Evaluation of aerobic fitness means walking for 1600 m.
- (c) Evaluation of lower limb strength.
- (d) Evaluation of postural stability.
- (e) Consideration of selected parameters of body composition.
- (f) Monitoring the feelings and mood before and after exercise.

The results of the final set of tests and self tests for seniors have confirmed that the functional, psychological and motor activity has been demonstrably exhibited by slow aging. The positive overall impact of physical activity in seniors was reflected in increased confidence in own abilities. Other positive aspect of the programme was that the medical and social institutions dealing with the elderly were interested in their concept (Štilec, 2004). In old age, the muscle mass is reduced and the body accumulates fat and the connective tissue. Muscle strength is reduced

to about 30%, we can see a loss of muscle fibers to about 40 to 50% in an 80 year old individual. Many studies have confirmed that the average amount of seniors have decreased in muscle mass from 1.5 to 2 cm and waist circumference was increased from 3 to 4 cm. The amount of total body water decreases from 40 to 50%, which affects the functioning of the internal environment, muscle activity and joint condition (Wold, 2004). There is reduced mobility and decreased range of joint mobility (Kalvach, 2004). The most common criterion is the value of movement intensity of the heart rate (hereafter SF). Synonymous with the maximum value of SF is Karvonenov 's scale: $SF_{max} = 220 \text{ beats / min}$. The measured age of the person (Štilec, 2004), SF value can be reliably measured at any time and without major complications. For this reason, we can measure the elderly in social institutions. We propose to create a movement therapy group, which would be carried out under the supervision of senior nurses and physiotherapists. The role of nurses would be the monitoring of physiological functions, hence the value of SF, the overall health of senior, and also his positive motivation. Responsibility of physiotherapists would be drawing up plans for senior exercises. Nurses would carry out the selection of seniors sent for completion of therapy by the available functional tests. When investigating a specific geriatric patients (compared with those obtained by children and young patients), functional testing, which is now known as comprehensive geriatric examination includes several areas:

1. Internal clinical examination.
2. Mental health examination.
3. Examination of functional skills, self-sufficiency in activities of daily living (ADL Test) and activities, ensuring independent functioning of the elderly (IADL test).
4. Social situation and living way - relationships, finances, social environment, decor, and other compensatory aids (Klevetová and Dlabalová, 2008).

In the framework of a comprehensive geriatric examination many measurements and scales are used. Screening test for mobility is known to determine mobility, muscle strength, stability and agility. Specific interventions comprehensive geriatric examination could be transformed into a nursing course within the competence of nurses. We argue on the basis of Decree 364/2005 of the

Ministry of Health, which determines the scope of nursing practice provided by nurse independently and in collaboration with the physician and the scope of midwifery practice provided by the midwife independently and in cooperation with the physician. In Section 2 of Decree 364/2005, the Ministry of Health states that the nurse "decides on the acts concerning the provision and management of nursing care depending on the identified needs of people, families or communities, which provides nursing care is used in nursing scale referral." As Assessment scale indicator is used assessing changes in health status of people, while changes can be measured directly or indirectly, and evaluation is often performed by the numerical sum. Individual assessment of geriatric patient intervention in the nursing process should be included in the particular practice of his examinations. It would be largely accepted and dealt with in our scientific assumption that mobility is an important aspect of an overall assessment of quality of life in both studied groups of seniors.

Conclusions

Demographic variables motivate us to the execution of the analysis of life in senior population. The aging population is a challenge for governments, but particularly for health. Life expectancy at birth has an upward trend and reached in 2008, 70.85 years for men and 78.73 years for women (Hegyí et al., 2009). In the world as a growing and aging population, Europe will be added in the elderly and by 2050 only one third of Europe's population is 60 or more years (aging population, 2008). In Canada, in 2004, the treaty on the importance of quality of life in all areas was adopted, thus in the senior population as well.

A task of the national programme in the elderly is to maintain their self-sufficiency, social participation, integration, and thus maintain and promote quality of life in seniors. According to these recommendations and our research results we indicate that there is an urgent need to mobilize and increase self-sufficiency in geriatric patients and seniors in social institutions. Geriatric age is characterized by many specifications, but the satisfaction of hospitalized patients is an important indicator of quality care from the perspective of nursing. In nursing there must be a continuous mobilization of geriatric patients according to their degree of dependence. It is also necessary to develop training programmes for geriatric

patients in collaboration with physiotherapists to create so-called movement therapy group and to ensure enough tools to increase self-sufficiency in activities of daily living (their continuous use).

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