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ORIGINAL PAPER

The Effect of Loneliness on Malnutrition in Elderly Population

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Introduction: The clinical and epidemiological data show that proper nutrition plays an important role in maintaining health and combating the danger of developing some chronic diseases in the elderly population. Nutrition is an important factor in many physiological and pathological changes that accompany the aging process. More than 50% of elderly patients are suffering from malnutrition which is information that concerns. Due to various factors, older people are potentially vulnerable groups at risk of malnutrition. Loneliness, isolation from society and neglect of parents by children is a big problem to many people in old age. **Objective**: To determine differences in nutritional status of elderly people living alone compared to those who live in family surroundings. **Subject and methods**: The study was conducted in the municipality of Tuzla in 2009.-2010, in outpatient family medicine Simin Han. The survey covered a total of 200 elderly subjects (age> 65 years). Subject group consisted of 45% of people living alone, and 55% control group consisted of elderly patients who live in traditional family surroundings. Questionnaires used in this study are General geriatric assessment questionnaire and Mini nutritional status. **Results**: The average age (± SD) was 75.4 ± 6.2 years in subject group, while the same in the control group was 74.9 ±5.6 years. In subject group significantly more patients are on the verge of poverty. There are significant differences in the classification of financial status, according to the groups (p =0.043). Members of subject groups have significantly lower BMI categories (p = 0.03) compared with the control group. In our study, people who live alone are at increased risk of malnutrition (p =0030), have reduced the number of daily meals, significantly lower daily intake of protein, fruits and vegetables in the diet in relation to persons living in a family environment. Significantly more patients with loss of appetite live alone. According to the existence of self-reported food problems significantly more people are in subject group. There is a difference value score "Small assessment of nutrition" between the two groups (p = 0.001). About 22% of the total number of respondents said they have not so good health status compared to others. **Conclusions**: Loneliness is a significant predictor of anorexia nervosa, the risk of malnutrition and malnutrition. Results indicate that it is necessary to work on improving the status and protection of elderly. **Keywords:** elderly people, body mass index, malnutrition, proper nutrition, solitude

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1. INTRODUCTION

Clinical and epidemiological data show that proper nutrition plays an important role in maintaining health and combating the danger of developing some chronic diseases in the elderly. However, examples are not rare findings in geriatric patients who are in favour of significant weight loss showing the clinical signs of malnutrition. Nutrition is an important factor in many physiological and pathological changes that accompany the aging process (1, 2). Physiological decrease in appetite during the aging process, in response to a decrease in physical activity level and basal metabolism in aging, is called the"anorexia of aging". Facts that concerns is that more than 50% of elderly patients are suffering from malnutrition. The survey in Finland, which was conducted on a population of 41 400 persons, among whom were 7% (2880 persons) aged 75 years, showed a significant share of malnutrition in this elderly category. Specifically, in this age it was found that 3% were underweight, 48% had a significant risk for malnutrition and 49% among them well fed (3, 4). Due to various factors, older people are potentially vulnerable group at risk of malnutrition.

Anorexia and protein-energy malnutrition in geriatric patients derive

from a number of factors inter-reaction that can be divided into three categories: social, psychological and medical (5). It is known that 85% of chronic disease and disability, in the elderly can be prevented or mitigated with adequate nutrition (6). The aging process follows the lack of many essential nutrients, whether due to impaired absorption and insufficient or poor (undiversified) diet. This phenomenon is often associated with poor socioeconomic status of older persons (7). Diet and nutritional status is influenced by numerous factors: health status of individuals, medical care, therapy and polypharmacy, physical and spiritual activities, cultural heritage and religious attitudes (8).

Older people generally spend more of their time at home or immediate vicinity and are more dependent on others (9). Loneliness, isolation from society and neglect of parents by children is a big problem to many people in old age. Isolation of the elderly from society can be seen in their reduced functional capacity, social status, their family structure, family contacts and difficulties in their accessing organized social services. The older population is in more direct contacts with friends and neighbors than their own children as a result of modern lifestyle. Children often because of education or work do not live in the same place as their parents (10). Chinese proverb says that to elderly people death don't come with age, but with the abandonment. Depression and suicidal ideation and completed suicide are very common in elderly people living alone. Often, suicide is a passive (indirect) when patients simply refuse the geriatric care, stop taking drugs that are necessary or food. Excessive alcohol consumption could not be excluded (11, 12).

According to the classification, the third age is reserved for people older than 65 years. Many authorities believe that the boundary moves over 75 years. According to the World Health Organization definition elderly people are those aged 60-75 years, old are aged 76-90 years, and very old people are those aged over 90 years (8). The aim of the research was to determine differences in nutritional status of elderly people living alone compared to those who live in a family environment. The assumption is that loneliness significantly affects the mental status of elderly people and reduces the desire for meals and nutrition.

2. SUBJECTS AND METHODS

The study was conducted in the municipality of Tuzla in 2009.-2010 years, in outpatient family medicine Simin Han. For this area three teams of family medicine physicians are involved with a total of 5500 registered patients. Of the total number of registered, 990 patients (18%) elderly persons (> 65 years).

Previous war in this part of the municipalities led to a considerable human migration. Few patients are living in the Republic of Srpska, and receive health care in this clinic. In this area, there is a small number of employed population and people live mainly from pensions and social assistance. A significant number of people who acquire or improve livelihoods by farming in their own household are very elderly.

The study included a total of 200 elderly subjects (age> 65 years). All subjects were registered patients in family medicine clinics Pozarnica and Simin Han. From the total sample subject and control groups is formed. Subject or experimentally group consisted of 45% of people living alone, and control group consisted of 55% elderly patients who traditionally live in a family environment. The predicted measurement, inspection and testing of questionnaires in accordance with the rules and design research conducted members of the family medicine teams in outpatient Simin Han.

Participation in the survey was voluntary with consent of respondents in accordance with the code of ethics in medicine and medical research. Surveys excluded persons living in the Republic of Srpska, and receiving medical care SiminHan; people who have not given consent for participation, subjects who occasionally are care taken by persons other than family members.

2.1. Questionnaires

General Geriatric questionnaire was created for this research, and includes questions about age, sex, general physical examination, financial status, information about medication.

Evaluation of mini nutritional status (U.S. mini-nutritional assessment MNA) is a valid method used in clinical practice and is used for quick identification of malnutrition and risk or danger of malnutrition. The parameters are very fast measured in fifteen to twenty minutes (13,5). It consists of four sections: *anthropometric assessment* (body mass index or BMI- the mean volume of the upper arm, lower leg volume, measured by weight loss in the last three months), *overall evaluation* (an independent life, drug therapy, psychological stress, mobility, neuropsychiatric problems, skin ulcerations) *dietary assessment* (number of full meals daily intake of certain foods, fruits, vegetables, protein, fluid, method of feeding), *self-rated* health problems and nutritional status compared with persons of the same age (4).The most useful parameter to estimate the nutritional status is the body mass index (BMI) which is calculated as the quotient of body weight (in kilograms) and body height in meters squared (5). Desired BMI of elderly persons is 24, and the smaller values indicate poor nutritional health.

Body weight was measured by the decimal scale "Libela Elsi" (UWE PM-150, 150kg maximum extent, takes into account the100 grams of tolerance). Body height (cm) was measured by anthropometry, which is composed of a vertical measuring rod with a scale with the movable horizontal arm. Respondent stood barefoot on a horizontal surface, body and nape leaned on the measurement scale, movable arm anthropometry to touch the scalp and the apparent height. Body mass index was measured using BMI (or BMI) calculator. Measurements were performed in the outpatient Simin Han and conducted by a team of nurses in family medicine. The maximum number of points in the questionnaire is 30. According to the indicator of poor nutrition value of ≥ 24 points is considered good, the risk of malnutrition reveals scores of 17-23.5 points, a score <17 points malnutrition (3,13).

2.2. Statistical analysis

All data were analyzed using the statistical package SPSS 12.0 (SPSS Inc. Chichago, IL, USA). Standard tests of descriptive statistics with measures of

central tendency and dispersion were done. All variables were tested for association with a normal distribution using Kolmogorov-Smirnov test. Quantitative variables were tested using the Student t-test if they were normally distributed or Mann-Whitney test if they were distributed asymmetrically. Qualitative variables were tested by chi-square test with continuity correction. For significant differences obtained by chi-square test was calculated odds ratio (Odds Ratio - OR) with 95-percent confidence interval. All tests were carried out with a statistical significance of 95% ($p < 0.05$).

3. RESULTS

The total sample was 200 respondents. The average age (± SD) was 75.4 ± 6.2 years in experimental group, while in the control group, the same was 74.9 ± 5.6 years. There was no statistically significant difference compared to the age of subjects in groups (t-test = 0.67, df = 198, p = 0.5). In experimental and the control group there were more women (62.2% vs. 52.7%), we haven't found a statistically significant difference between groups by gender (χ2test = 1.82, df = 1, p = 0.18). Our results confirm the fact that in our population, women live longer than men (average median age of respondents 75). In the total sample, almost half of them are uneducated / illiterate. We haven't detected a statistically significant difference between groups by educational level. (X2test = 7.62, df = 3, p = 0.054). In experimental group there was significantly more respondents in poverty 18 (20%) vs 8 (8%) (Table 1). There are significant differences in the classification of financial status, according to groups (χ2test = 8.15, df = 3, p = 0.043).

Members of experimental group have a lower BMI or BMI category (χ2test = 9.09, df = 3, p = 0.03) compared with the control group.

Median number of meals per day in experimental group was 1 with interquartile range of 1-2 servings, while the control group had two meals a day with the interquartile range of 2 to 3 servings ($p < 0.001$) seen in Figure 1.

According to the protein intake (at least one serving of dairy products per day, legumes and eggs, meat and fish), and based on the number of responses "yes" (maximum 3) the frequency of positive responses was significantly lower in patients in experimental groups compared to controls (χ2test = 11.68 df = 2, p = 0.003). The results reveal that experimental group members significantly less likely to have enough fruit and vegetables in the diet of 34%: 52% compared to the control group (χ2test = 6.06, df = 1, p = 0 , 01). There was no statistically significant difference between groups when it comes to daily fluid intake (χ2test = 3.32, df = 2, p = 0.19). When it comes to self-perceived quality appetite among members of experimental group were significantly more patients with loss of appetite than among members of the control group (χ2test = 7.13, df = 2, p = 0.03). According to the existence of self-reported food problems, problems with eating were perceived significantly more in experimental group compared to controls (χ2test = 13.48, df = 1, p = 0.001). However, when it comes to self-rated health status of patients we found no statistically significant differences between groups (χ2test=5.22, df=3, p=0.16) (Table 2).

Subjects characteristics	experimental group n (%)	control group n (%)	P
Gender			
men	34 (38)	52 (47)	
women	56 (62)	58 (53)	0.18
Educational level			
No education	51 (57)	50 (45)	
Elementary school	26 (29)	36 (33)	0.054
High school	9 (10)	23 (21)	
Higher education	4 (4)	1 (1)	
Economic status			
Above average	2 (2)	6 (5)	
Average	38 (42)	55 (50)	
Below average	32 (36)	41 (37)	0.043
Poverty	18 (20)	8 (8)	

Table 1. Demographic characteristics of subject in groups

Subjects characteristics	experimental group n (%)	control group n (%)	P
Body mass index (BMI) %			
≤17	11 (12)	12 (11)	
17-23	34 (38)	24 (22)	0.030
≥23	45 (50)	74 (67)	
Daily protein intake			
0-1 response yes	49 (54)	39 (36)	
2 response yes	33 (37)	43 (39)	0.003
3 response yes	8 (9)	28 (25)	
Daily fruit and vegetables intake			
sufficient	38 (34)	47 (52)	0.010
insufficient	52 (66)	63 (48)	
Nutrition problems			
No problems	29 (32)	59 (54)	
Moderately weak nutrition	34 (38)	38 (34)	0.001
Wary weak nutrition	27 (30)	13 (12)	

Table 2. Nutritional status characteristics by groups

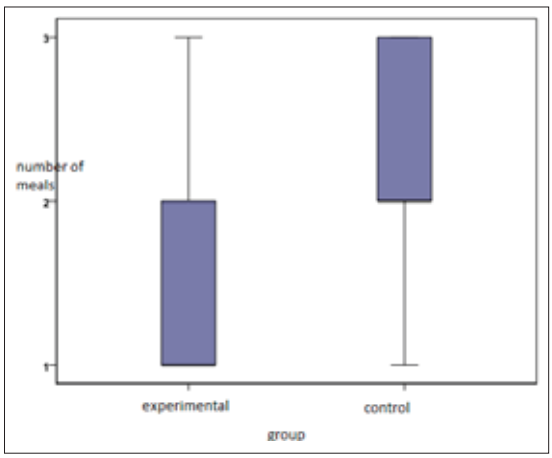

Figure 1. Mean number of meals by group

The value of Mini nutrition assessment score between the two groups was compared. In experimental group median score was 16.75 with interquartile range 13-21, and the ordinary range of 6 to 27.5. In the control group, the median score was 20.5 with interquartile range 15.5 to 24, and the ordinary range of 7 to 28.5 (p = 0.001).

4. DISCUSSION

In Finland, persons over 75 years are in 48% of cases at risk of malnutrition, 3% were malnourished (3). The review study that analyzed the results of 21 compatible studies of malnutrition in geriatric patients (n = 14 149 elderly people) found the prevalence of malnutrition 2 + /–0.1% (mean + /–SE, range

0-8%), and the risk prevalence of malnutrition is 24 + /–0.4% (range 8-76%). A similar prevalence was found in scientific magazine study that included 25 studies that included 3119 geriatric patients who are placed in households and family environment. The prevalence of malnutrition was 9 + /–0.5% (mean + /–SE, range 0-30%), and the risk of malnutrition is 45 + /–0.9% (range 8-65%). The highest prevalence of malnutrition 23 + /–0.5% (mean + /–SE, range 1-74%) was observed in geriatric patients (35 studies, n = 8596) who are in hospital stay and institutions for the elderly 21 + / - 0.5% (mean + /–SE, range 5-71%). The large variability in diversity status of food depends on the health status of elderly people. There was no statistically significant differences between groups according to age (p = 0.05). The total sample was 57.5% women 42.5% of men older than 65 years (4,14,7). In our study, the prevalence of malnutrition is 12% of geriatric patients who live alone, and 11% of respondents who live in a family environment. Poor financial status was present in all patients an average of 36-37% and 8-20% of poverty. Poor financial status and poverty are correlated with the risk of malnutrition and malnutrition evident in accordance with results of other authors (7). An important indicator of quality of life of geriatric patients related to the economic situation (15).

Physiological decrease in appetite may be the cause of protein malnutrition in more than 15% of older people living in the home setting, in 35%–65% of older people in hospital and in 25% to 60% of people in homes for the elderly. Protein malnutrition in clinical practice is rarely recognized, and was not even considering the possibility of its existence in the elderly (16). Besides the physiological changes caused by aging, chronic disease and functional damage in certain organs and organ systems as well as diet, the nutritional status of older persons is affected by the psychological (mourning, apathy), social (isolation) and economic factors. The research about adjusting to single life, the elderly subjects assessed their appetite for eating as generally poor or very poor, would prefer to eat in the company (17). In our study, people who live alone are at increased risk of malnutrition (p = 0030),with reduced number of daily meals, significantly lower daily intake of protein, fruits and vegetables in the diet in relation to persons living in a family environment. Significantly more patients with loss of appetite are living alone than among members of the control group, and also by the existence of self-reported food problems significantly more people were in experimental group. When we compared the score values of "Small assessment of diet," the difference between the two groups was statistically significant (p = 0.001). Meals in nursing homes for the elderly (18) in the total energy value of a meal does not significantly differ from the recommendations, the menus are dull, according to a survey under-represented are the following foods: fish, fish products, milk and dairy products, legumes and fruits and vegetables, fat meal are often used.

Self-rated health appears to be very significant predictor of morbidity and mortality in elderly persons (19). It was found that subjective health, for most people, is the primary determinant of quality of life associated with health. Self-perceived health status of elderly patients is relatively good, if we take into account the high percentage of present chronic disease and disability, and comorbidity, poor and very poor health has only 35% and 66% of respondents have a chronic illness or physical disability (17). Most older people are with 41.3% excellent or very good health in Denmark and least in Portugal at 3% and Germany 5.2% (10). In our study we found no statistically significant differences between groups of self-reported by the respondents about their own health status in relation to persons of the same age. About 22% of the total number of respondents said they have not so good health status in relation to others, which is about research in Finland, 17% (3).

5. CONCLUSIONS

Loneliness is a significant predictor of anorexia nervosa, the risk of malnutrition. A significant factor is impairment of quality of life of the elderly people and the perception of poor health status. Half of the elderly in the total sample lives in deprived financial condition, or below average in the real poverty that is also associated with risk of malnutrition. Results indicate that it is necessary to work on improving the status and protection of old.

REFERENCES

1. Rosenberg IH. Nutrition and ageing.In:Hazzard WR(ed).Principles of geriatrics medicine and gerontology. McGraw-Hill, New York. 1994; 49-59.
2. Pranjic N. Prehrana i zdravlje. U: Pranjic N. (ur) Zdravstvena ekologija. Tuzla, Univerzitet u Tuzli: Off-set; 2006: 111-141.
3. Soini H, Routasalo P. Lagström H. Characteristics of the Mini- Nutritional Assessment in elderly home- care patients. Eur J Clin Nutr. 2004: 58(1): 64-70.
4. Guigoz Y. The Mini nutritional assessment (MNA) review of the literature: What does it tell us? J Nutr Health Aging. 2006; 10(6): 466-85.
5. Milanovic P, Miloševic D, Davidovic M. Medicinska gerontologija. MST Gajic, Beograd,2007:81-9.
6. Barrocas A, Belcher D, Champagene C, Jastram C Nutrition assesment: practical approaches. Clin Geriatr Med 1995;11:675-708.
7. Volkert D, Saeglitz C, Gueldenzoph H, Sieber CC, Stehle P Undiagnosed malnutrition and nutrition- related problems in geriatric patients.J Nutr Health Aging.2010;14(5):387-92.
8. Durakovic Z i sar. ur. Gerijatrija- Medicina starije dobi. CT- Poslovne informacije, Zagreb. 2007;1-21.
9. Džakula A, Vončina L, Puljak A, Šogoric S. Zdravstveni menadžment u skrbi za starije osobe. Medicus. 2005; 14 (2): 287-290.
10. Dobrotic I, Hromatko A, Japec L, Matkovic T, Šucur Z Kvaliteta života i rizik od socijalne isključenosti u Hrvatskoj. Program Ujedinjenih naroda za razvoj (UNDP) u Hrvatskoj, LDK, Zagreb, 2007; 115-171.
11. Bartels SJ, Coakley EM, Oxman TE, Constantino G, et al. Suicidal and death ideation in older primary care patients with depression, anxiety and at risk alcohol use. American Journal of Geriatric Psychiatry. 2002; 10(4): 417-27.
12. Schulberg HC, Bruce ML, Lee PW, Williams WJ, Ditrich AJ Preventing suicide in primary care patients:the primary care physician's role. Gen. Hospital Psychiatry. 2004; 26(5): 337-345.
13. Guigoz Y, Laugue S, Vellas BJ. Identifying the elderly at risk for malnutrition: The Mini Nutritional Assessment. Clin Geriatr Med. 2002; 18(4): 737-57.
14. Cuervo M, Ansorena D, Garcia A, Astiasaran I, Martinez JA. Food consumption analysis in Spanish elderly based upon the mini nutritional assessment test. Ann Nutr Metab. 2008; 52(4): 299-307.
15. Leutar Z, Štambuk A, Rusac S. Socijalna politika i kvalitet života starijih osoba s tjelesnim invaliditetom. Rev soc pol. Zagreb. 2007: 327-346.
16. Miličević-Kalašic A. Anoreksija starenja - faktor rizika proteinske malnutricije osoba treceg životnog doba. U: Gerijatrijski praktikum Sekretarijat za zdravstvo Gradske uprav Beograd, Beograd: 2007; 108-115.
17. Poredoš D. Prilagodba na samački život kod osoba starije životne dobi. Ljetopis Studijskog centra socijalnog rada: 2001; 8(1):7-35
18. Curin K, Marušic J, Čulin S. Prehrana u domovima za starije osobe u Splitu. Med Jad; 2006; 36(1-2): 23-30.
19. Idler EL, Kasl S. Health perceptions and survival: do global evaluations of healtth status really predict mortality? Journal of Gerontology: Social Sciences: 1991; 46(2): S55-S65.

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