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ORIGINAL PAPER

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The Frequency of Multifactorial Syndromes in Geriatrics of Tuzla Canton Population

Enisa Ramic¹, Senada Selmanovic¹, Esad Alibasic², Dzevad Dzananovic¹, Fejzo Dzafic³, Irma Ramic⁴

¹Primary Health Care Center and Polyclinics Dr Mustafa Sehović, Tuzla, Bosnia and Herzegovina

²Primary Health Care Center Kalesija, Bosnia and Herzegovina

³University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

⁴Faculty of Medicine, University of Tuzla, Bosnia and Herzegovina

Corresponding author: Enisa Ramic. Primary Health Care Center and Polyclinics Dr Mustafa Sehović, Tuzla, Bosnia and Herzegovina

ABSTRACT

Introduction: There are four main multifactorial syndromes in geriatrics the so-called “4N”, which specifically occur at elderly patients. Listed syndromes often occur related, and they can be the cause and the result of many other syndromes at geriatric patients. **Objective:** determine the difference in the assessment of the level of immobility, instability, dependence, urinary incontinence (“4N”) in elderly groups. **Materials and methods:** The research included total 200 elderly respondents experimental group made of elderly persons (>65 years) living alone. Control group included elderly persons living in a family environment. Universal geriatric questionnaire was made for this research. For fast orientation the redone questionnaire was used for our conditions: examination in clinics for usual elderly problems “Short list for examination”. For the assessment of the mental abilities reduction at elderly we used “Short portable mental status questionnaire” (SPMSQ). **Results:** In total sample the research included 200 elderly respondents, 45% in experimental group and 55% in control group. The average age (\pm SD) was 75,4 \pm 6,2 years in the experimental group, while in the control group the average age was 74,9 \pm 5,6 years. We notice nearly equal distribution of falling risk according to groups (50%, 47%). In total sample there were 62% mobile, 22,5% limited mobility, and 4% immobile. Dependence frequency was more represented at examination group respondents ($p=0,002$). Dependence chances (OR) were 2,05 times larger (95 %CI=1,12-3,75) in examination group than in control group respondents. Frequency of urinary incontinence problem is significantly represented at all our respondents (42,2% v.s. 35%). **Conclusion:** Permanent gerontology and geriatrics training is needed both family medicine doctors and other experts in the field of elderly health protection and preventive health measures, pharmacotherapy, palliative care,

especially about four main geriatrics syndromes at elderly.

Key words: elderly, immobility, instability, dependence, incontinence.

1. INTRODUCTION

There are four main multifactorial syndromes in geriatrics the so-called “4N”, which specifically occur at elderly patients. Four leading geriatric syndromes that are common for large number of elderly disease refer to the: immobility or geriatric immobilization syndrome at elderly, instability as the main cause of injury and falls at elderly, dependence with the increasing share of dementia and Alzheimer disease at the oldest persons, urinary incontinence i.e. incontinence at geriatric patients. Listed syndromes often occur related, and they can be the cause and the result of many other syndromes at geriatric patients (1).

The main general factor that made the system of movement aging is decreased mobility or immobility. That can be the primary sign of aging and the symptom of many diseases and traumatic damage. Statistic shows that almost more than a half of the population older than 65 years has mobility difficulties (2). Immobility causes can be different as pain, general body weakness, psychogenic setback, iatrogenic damage. Walking instability causes frequent falling, so traumatic damages can directly or indirectly cause immobility. Mobility assessment is established by following criteria: completely mobile, limited mobility, permanent limited mobility, permanent immobility (3). Completely mobile person is moving independently, without help, limitedly mobile person uses occasionally help as cane, crutches, walkers. Permanently limited mobile person uses permanently wheelchair, permanently immobile person can't move with any form of help and lies in the bed without the possibility of independent

body moving (4).

Each year around third of elderly falls, and one third of patients that have confirmed fallen don't remember the fall. Except pain, fear and insecurity, some falls lead to physical injury, health complications and early death. At elderly injury results or complications are extremely accent: bed sores, contracture, infections, decreased mobility and mortality due to hypostatic pneumonia. Every noticed or listed by patient posture change, strength or balance demands further evaluation and even detailed assessment(5). It is evident that injuries make large public health elderly problem and that are necessary more effective preventive programs to decrease the number of hospitalizations and mortality at elderly, caused by injury. Optimistic is that injuries are, as complications and mortality from injury, pronouncedly preventive and at elderly largely can and must be avoided.

Dementia is clinical syndrome characterized by degradation of the previously acquired mental functions, which leads to decreasing or impossibility of doing everyday activities. That is one of the most serious elderly disorders, significant factor for development of other geriatric problems as falling, urinary incontinence, and similar. For establishing dementia diagnosis, and better disorder explanation, these deficits need to appear without changing awareness or other medicine cause (6).

The lack of cognitive functions due to dementia is important in such measure how much it affects the physical and social function of the patient and his relations with other persons. Observations of the patients family members and other caregivers are therefore important for determining the functional level of damage that elderly shows.

Urinary incontinence (the loss of willingly micturition control) is frequent elderly disease and its result can be permanent catheter placement, urinary tract infection, urosepsis, immobility, falls, bed sore. It affects around 13 million persons in USA, and the largest prevalence is in over 65 years elderly population. It is evaluated that it appears in 11 to 34% elderly men and 17 to 55% elderly women (7). It is considered that 60% of women over 65 years has retention and delay urinary disorder (8). At older men urinary incontinence is usually caused by prostate enlargement. Enlargement is benign or malign. During time bladder is overly distending, and its muscle wall weakens. It leads to micturition coordination loss and incontinence. Urinary retention favors the emergence of urinary tract infection and possible kidney damage. Large number of persons with urinary incontinence does not seek professional help, or gives anamnesis information about it unless they are asked direct questions. Urinary incontinence evaluation needs to include cognitive function evaluation, taking fluid, mobility, medicine side effects, pre urinary diseases.

Research objective is to determine the difference in the assessment of the level of immobility, instability, dependence, urinary incontinence ("4N") in elderly groups.

2. MATERIALS AND METHODS

The research included total 200 elderly respondents experimental group made of elderly persons (>65 years) living alone. Control group included elderly persons living in a family environment. Examination and filling in the questionnaire was done in the family medicine clinic, and one number of

the respondents was examined in home environment in suburbs. Universal geriatric questionnaire was created for this research, and it contains questions related with age, gender, general physical examination, living conditions, economic conditions, mobility, everyday life activities, home safety, neglect, apparatus, smoking, alcohol, urination disorders, sexuality, information on the use of medicines. The adjusted questionnaire for our conditions was used for fast orientation: examination in clinics for usual elderly problems "Ten Minutes Screen for Geriatric Conditions" (9). This part of the questionnaire contains sight, hearing and mobility checkup, questions about urinary incontinence, diet and weight loss, questions about physical restrictions. For the assessment of the mental abilities reduction at elderly we used "Short portable mental status questionnaire"(SPMSQ). This questionnaire is filled by medical worker from elected doctors team, and it does not require the patient to fill in the questionnaire so it can be applied to patients with physical disorders and patients with limited mobility.

3. RESULTS

In total sample there were 200 respondents, 90/200 (45%) in the examination and 110/200 (55%) in the control group. The average age (±SD) was 75,4±6,2 years in the experimental group, while in the control group the average age was 74,9±5,6 years.

Groups	Immobility n (%)				p
	Immobile	Limited mobility	Mobile	Permanent limited mobility	
Experimental	3 (3)	18 (20)	57 (63)	12 (13)	0.76
Control	5 (4)	27 (25)	67 (61)	11 (10)	

Table 1. Immobility symptome structure according to groups

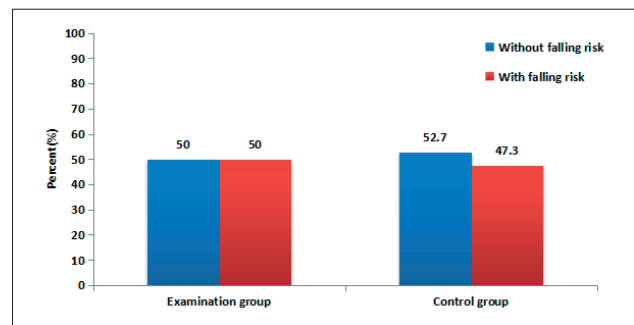


Figure 1. Respondents structure according to fall risk (score) and groups

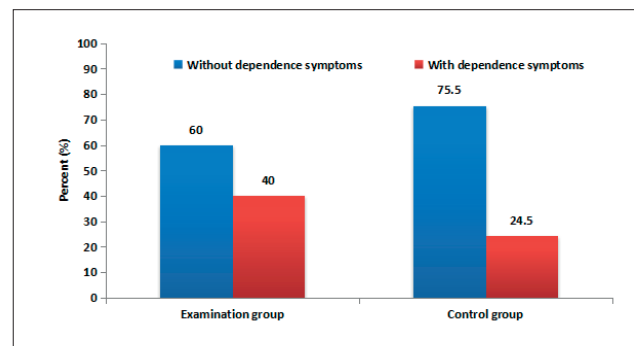


Figure 2. Respondents structure according to dependence symptoms and groups

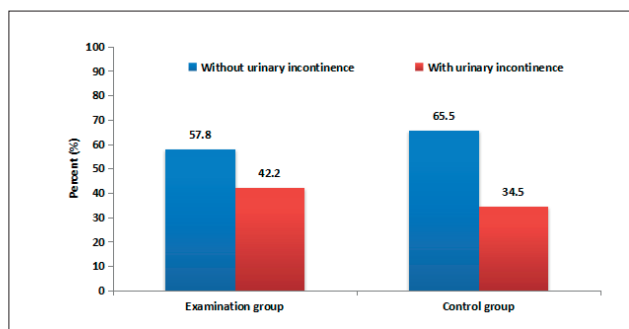


Figure 3. Respondents structure according to urinary incontinence symptoms and groups

4. DISCUSSION

Gerontological researches show how aging increases risk factor activity for the appearance of many elderly diseases. Simultaneous presence of the leading main diagnosis of several following diseases necessarily leads elderly patient to functional disability.

This reflects in simultaneous appearance of the four main manufacturing geriatrics elderly syndromes ("4N" in geriatrics: immobility, dependence, urinary incontinence and instability). Listed defined health problems reflect consequently in functional disability of the geriatric patient. By applying preventive elderly health measures it is possible to prevent the appearance risk factors leading to sick aging, and thus to preservation of the functional ability and elderly health promotion. Our research has shown that in total respondents sample there were 62% mobile, 22,5% with limited mobility, and 4% immobile in total sample. The results of gerontological research conducted at elderly gerontological center users in Croatia show that 65,12% is independent, 20,05% limitedly dependent, while 11,26% elderly users are permanently dependent. At our research dependence frequency was statistically more prevalent at examination respondents group than at control group respondents ($p=0,02$). Independence chances (OR) were 2,05 times larger (95% CI= 1,12-3,75) at examination group respondents than control group respondents.

Having considered that the elderly number increases respectively to population in general, the number of falls among elderly increases also. The fall, according to Sehested represents sudden, unexpected change of position, through which statistical and mechanical mechanisms are not able to do their function, and will mechanisms or reflexes responsible for balance correction are not adequate (10). In their study of 264 examined falls 117 happened while the persons were walking, 60 falls happened of chair or cart, 32 when getting up or going back to bed, 26 have fallen over bed, and 18 have fallen in the toilette. Year falls prevalence at elderly from 65 years is 28% (11), 15% persons that fall are in the group the so-called healthy elderly persons(12). Around 15% falls has hip fracture as its consequence (13). It is noticed in the research that the fall risk distribution according to groups is almost equal (50% v.s. 47%). When we examined instability we noticed that there is not statistically significant difference of instability symptoms frequency according to groups ($p=0,80$). In the examination group dementia functional scale median was 30 with interquartile range from 26 to 40, while in the control group it was 28 with interquartile range from 24 to 37.

Urinary incontinence represents significant psychosocial and hygienic problem both for the affected person and her family. It usually more often affects women than men, it appears mostly at elderly from 50 years forward. Early recognition of the urinary incontinence problem is important for good treating effect, where main part in early recognition has the primary health protection doctor. It is considered that 15-30% uninstitutionalized elderly has incontinence 81(14), and over 50% elderly users is incontinent (15). In nursing homes around 40 to 50% of elderly users are incontinent. Gerontological public health indicator shows that 50 to 70% users of dispensaries elderly and helpless nursing homes are incontinent (16). The frequency of urinary incontinence problem is significantly represented at all our respondents (42.2%, 35%).

5. CONCLUSION

By applying the preventive health measures the appearance of risk factors which lead to premature aging at elderly is prevented, and thus the preservation of the functional abilities and elderly health promotion. Permanent gerontology and geriatrics training is needed both family medicine doctors and other experts in the field of elderly health protection and preventive health measures, pharmacotherapy, palliative care, especially about four main geriatrics syndromes at elderly patients.

- **Conflict of interest:** Authors have no conflict of interest to declare.
- **Author's contributions:** Study conception and design: RE. Acquisition of data: RE, SS, RI. Statistical analysis and interpretation: AE, DZF. Drafting of the manuscript: RE. Critical revision of the manuscript for important intellectual content: DZDZ. Final approval of the version: AE.

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