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## Samodzielność osób starszych mieszkających na wsi w zakresie podstawowych i złożonych czynności życiowych

### Streszczenie

**Cel.** Celem niniejszej pracy była ocena funkcjonowania osób starszych mieszkających na wsi.

**Materiał i metody.** Badania przeprowadzono metodą sondażu diagnostycznego. Użyto techniki wywiadu bezpośredniego. Zastosowano następujące narzędzia badawcze: Kwestionariusz wywiadu własnej konstrukcji, Skrócony Test Sprawności Umysłowej wg Hodkinsona, Skala Katza (ADL), Skala Lawtona (IADL), Skrócony Test Tinetti. Badaniami objęto 102 (56 kobiet, 46 mężczyzn) osoby w wieku od 60 do 86 lat (średnia 73,18) z województwa podkarpackiego, w pełni sprawnych intelektualnie.

**Wyniki.** Większość badanej grupy (90,2%) była sprawna w wykonywaniu podstawowych czynności dnia codziennego (ADL). Zdecydowana większość (66,7%) badanych była natomiast znacznie niesprawna w wykonywaniu złożonych czynności dnia codziennego (IADL). Nie wykryto istotnych różnic w wykonywaniu prostych i złożonych czynności życiowych między kobietami a mężczyznami. Wykazano natomiast, że samodzielność w wykonywaniu prostych jak i złożonych czynności dnia codziennego pogarszała się wraz z wiekiem badanych (odpowiednio  $p<0,01$  i  $p<0,001$ ). U większości (80,4%) respondentów stwierdzono minimalne ryzyko upadków. Wykryto, że ryzyko upadków wzrastało wraz z pogarszającą się sprawnością w wykonywaniu zarówno podstawowych jak i złożonych czynności dnia codziennego ( $p<0,001$ ).

**Wnioski.** Samodzielność w wykonywaniu podstawowych (ADL) i złożonych (IADL) czynności życiowych osób starszych mieszkających na wsi pogarsza się wraz z wiekiem niezależnie od płci.

## Independence of elderly persons living in the rural areas in performing basic and complex everyday activities

### Abstract

**Aim.** The aim of this thesis was to evaluate functioning of elderly people living in rural areas.

**Material and methods.** The research method was based on a survey with the direct interview technique. It included six research tools: a self-made questionnaire, Hodkinson's Abbreviated Mental Test Score, the Katz ADL Scale, the Lawton IADL Scale, the Tinetti Assessment Tool. The study was carried out among 102 people (56 females, 46 males), 60-86 years old (average 73.18) in the Podkarpace Province. The investigated group had good intellectual performance.

**Results.** The majority of the researched group (90.2%) were independent in activities of daily living (ADL). The majority of the investigated (66.7%) had a lot of problems with instrumental activities of daily living (IADL). No significant differences in activities of daily living and instrumental activities of daily living were discovered between men and women. However, it was found out that when people get older, their functioning worsens in ADL and IADL ( $p<0.01$  and  $p<0.001$  respectively). The majority of the respondents (80.4%) stated a low risk for falls. A correlation was also found between lower scores in ADL and IADL scales and a higher risk of falling ( $p<0.01$ ).

**Conclusion.** Independence in the performance of daily living activities (ADL) and instrumental activities of daily living (IADL) by elderly rural inhabitants worsens with age regardless of gender.

**Słowa kluczowe:** sprawność funkcjonalna, populacja wiejska, osoby starsze.

**Key words:** functional performance, rural population, elderly persons.

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## INTRODUCTION

The societies are getting old, which is very characteristic of many countries - especially highly developed ones. Nowadays, there are about 600 million people over 60 in the world. It is possible that there will be one billion people in their sixties by 2020 [1] and in the middle of the 21st century it might be even 37% of the whole world population [2].

In Poland the process is more advanced in rural areas and elderly people living there belong to the category which is most exposed to health and social hazards. There are a few reasons of such a situation: the pauperization of the society and slow technological progress of the rural parts of Poland, which pose a lot of problems to many elderly people in their everyday life [3].

To understand the needs and expectations of elderly members of the society and to take proper action to secure the conditions for good and satisfying life for them, we have to have knowledge about what these people need to perform basic and complex life activities on their own [4].

These people have a lot of problems with many things: moving, eating, having a bath, getting dressed, using the toilet and controlling passage of urine and stools. They are dependent on other people and it is completely impossible for older people to be on their own at their homes [5]. And then, there are, of course, problems with more complex activities: using the telephone, doing the shopping, doing the housework, preparing and taking medicine or spending and saving money. It is necessary to help such a person to live an everyday life comfortably [6].

## AIM

The aim of this thesis was to evaluate the functional efficiency of elderly villagers in performing basic and complex life activities and to determine if it is dependent on age, sex and if it is connected with the risk of falling.

## MATERIAL AND METHODS

The research was carried out in one of the rural communes in the Podkarpackie Voivodeship. The people were 60 or over and they had to be intellectually efficient. In the beginning there were 120 people chosen for the research, but 18 of them were not mentally fit. Finally, the analysis involves the answers from 102 people. The research was done between December 2007 and April 2008.

The people were from 60 to 86 years of age (on average 73.18,  $\pm$  7.86; Me 72 years). There were 56 women (54.9% of the group); they were on average 73.77 years old ( $\pm$  7.82; Me = 73 years) and there were 46 men - 45.1% of the group. The men were a little younger, on average 72.48 years old ( $\pm$  7.94; Me = 71 years). Table 1 shows the social and demographic data.

There were 23 people from 60 to 65 years of age and the same number of people from 66 to 70 years of age (22.5%). Fifteen people (14.7%) were from 71 to 75 years old and 17 people (16.7%) were from 76 to 80 years old. The oldest group consisted of 24 (23.6%) – they were from 81 to 86 years old. Most people (64.7%) were married and 32.3% of them were widows or widowers.

The people were retired (N = 80; 78%) or got a state pension (N = 18; 17.7%). Most of them (N = 63; 61.7%) declared that the money they got (retirement pension or state pension) was not sufficient for their needs. Only 32 people (31.4%) claimed that the money was sufficient for them.

Looking at the living conditions it could be stated that most of the people (N = 68; 66.7%) lived in average conditions. Seven people (6.9%) said that the conditions were very good and 23 people (22.5%) said they were just good. However, four of them (3.9%) defined their living conditions as bad. Almost all of them were living together with their families (N = 79; 77.4%).

The research was based on a diagnostic survey. The direct interview technique based on the following research tools was used:

1. A self-made questionnaire involving 25 questions which were connected with the social and demographic data.
2. Hodkinson's Shortened Mental Test Score to determine intellectual abilities. The points from 7 to 5 indicated normal state, from 4 to 6 indicated partial impairment and 3 points or fewer indicated severe impairment [7].
3. The Katz Scale which is used for determining basic life activities (ADL) like moving, eating, having a bath, getting dressed, using the toilet and controlling passage of urine and stools. The points from 6 to 5 indicated a fit person, from 4 to 3 points indicated a partially fit person and from 2 to 0 indicated a disabled person [7].
4. The Lawton IADL Scale to evaluate complex life activities (IADL) like using the telephone, doing the shopping, doing the housework, preparing and taking medicine or spending and saving money. People who were not able to do any of these things are considered to be IADL unfit [7].
5. The Tinetti Test to estimate the risk of falls. Thanks to this test we could divide people for three groups: a small risk of falls, a medium risk of falls and a big risk of falls [7].

STATISTICA programme, version 6.0 PL was used to make a statistical analysis. The Spearman correlation and ANOVA one-factor analyses were used to examine the associations between the variables. The level which indicated a vital result was  $p < 0.05$ .

The people were from 60 to 86 years of age (on average 73.18,  $\pm$  7.86; Me 72 years). There were 56 women (54.9% of the group); they were on average 73.77 years old ( $\pm$  7.82; Me = 73 years) and there were 46 men - 45.1% of the group. The men were a little younger, on average 72.48 years old ( $\pm$  7.94; Me = 71 years). Table 1 shows the social and demographic data.

**TABLE. 1. Age and sex of the group of elderly people.**

Age groups (years)	Women		Men		Total	
	N	%	N	%	N	%
60 - 65	11	19.7	12	26.1	23	22.5
66 - 70	12	21.4	11	23.9	23	22.5
71 - 75	9	16.1	6	13	15	14.7
76 - 80	9	16.1	8	17.4	17	16.7
81 - 86	15	26.7	9	19.6	24	23.6

There were 23 people from 60 to 65 years of age and the same number of people from 66 to 70 years of age (22.5%). Fifteen people (14.7%) were from 71 to 75 years old and 17 people (16.7%) were from 76 to 80 years old. The oldest

group consisted of 24 (23.6%) – they were from 81 to 86 years old. Most people (64.7%) were married and 32.3% of them were widows or widowers.

The people were retired ( $N=80$ ; 78%) or got a state pension ( $N = 18$ ; 17.7%). Most of them ( $N = 63$ ; 61.7%) declared that the money they got (retirement pension or state pension) was not sufficient for their needs. Only 32 people (31.4%) claimed that the money was sufficient for them.

Looking at the living conditions it could be stated that most of the people ( $N = 68$ ; 66.7%) lived in average conditions. Seven people (6.9%) said that the conditions were very good and 23 people (22.5%) said they were just good. However, four of them (3.9%) defined their living conditions as bad. Almost all of them were living together with their families ( $N = 79$ ; 77.4%).

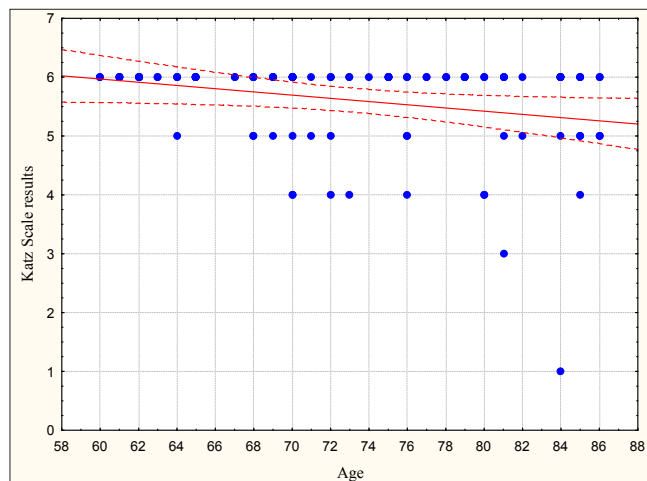
## RESULTS

Most of the people ( $N = 92$ ; 90.2%) were able to do some basic life activities because 76 of them (74.5%) got the highest points, that is 6 points in the ADL scale. Sixteen people (15.7%) got 5 points. Nine of them (8.8%) were the people with average abilities. Eight of them (7.8%) got 4 points in the Katz scale and one person got 3 points. Only one man (1%) was completely unable to perform simple life activities (he got 1 point in the ADL scale). The lowest result was 1 point and the highest result was 6 points – the Katz scale showed. An average number of points for the whole group was  $5.6 (\pm 0.81 \text{ pts; Me} = 6)$  (Table 2).

**TABLE 2. Independence in basic life activities (Katz scale results).**

Group	Number N	Average	Standard deviation	Median	Minimum	Maximum
Women	56	5.6	0.69	6	3	6
Men	46	5.5	0.93	6	1	6
Total	102	5.6	0.81	6	1	6

There were no bigger differences between women and men with regard to doing some basic life activities ( $p = 0.63$ ). But we can say that the age of the people influenced the possibilities – the older people were, the smaller possibilities they had ( $R = -0.273$ ;  $p < 0.01$ ; Figure 1).



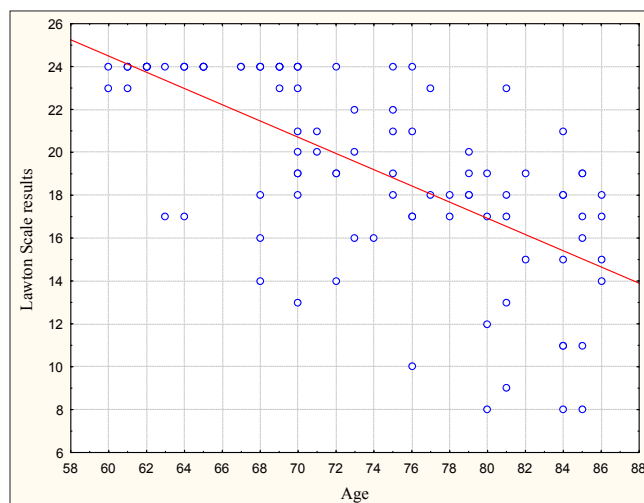
**FIGURE 1. Correlation between the age and independence in performing basic life activities ( $N = 102$ ).**

If we take the Lawton scale (IADL), the highest score was 24 points and the lowest score was 8 points. An average number of points for the whole group was  $19.5 (\pm 4.4 \text{ pts; Me} = 19.5)$  (Table 3). In this group, definitely most people ( $N = 68$ , 66.7%) needed some help to do complex life activities. Only 1/3 of them ( $N = 34$ ) were the people who could do some things on their own.

**TABLE 3. Independence of the researched group in the range of complex life activities (Lawton scale results).**

	Number N	Average	Standard deviation	Median	Minimum	Maximum
Women	56	19.5	4.3	20	8	24
Men	46	19.4	4.6	19	8	24
Total	102	19.5	4.4	19.5	8	24

There were no bigger differences between men and women with regard to performing some complex life activities ( $p = 0.96$ ). But we can say that the age of people influenced the possibilities and older people could do fewer things on their own ( $R = -0.6957$ ;  $p < 0.001$ ; Figure 2). In this group there were mostly people with minimal risk for falls – 82 (80.4%). A medium risk of falling involved 18 people (17.6%) and two people (2%) were in the group with considerable risk for falls (Table 4).



**FIGURE 2. Correlation between the age and independence in performing complex life activities ( $N = 102$ ).**

**TABLE 4. Risk of falls in the group.**

Risk of the falls	Women		Men		Total	
	N	%	N	%	N	%
Minimal	44	78.6	38	82.6	82	80.4
Medium	11	19.6	7	15.2	18	17.6
Big	1	1.8	1	2.2	2	2

There was opposite correlation between the risk of falling and the performance of some basic life activities on their own ( $R = -0.746$ ;  $p < 0.001$ ). If the people were less self-dependent, the risk for falls was bigger (Figure 3). Similar correlation was between the risk of falling and the performance of some complex life activities on their own ( $R = -0.645$ ;  $p < 0.001$ ). If the people were not able to do some activities, the risk of falling was bigger (Figure 4).

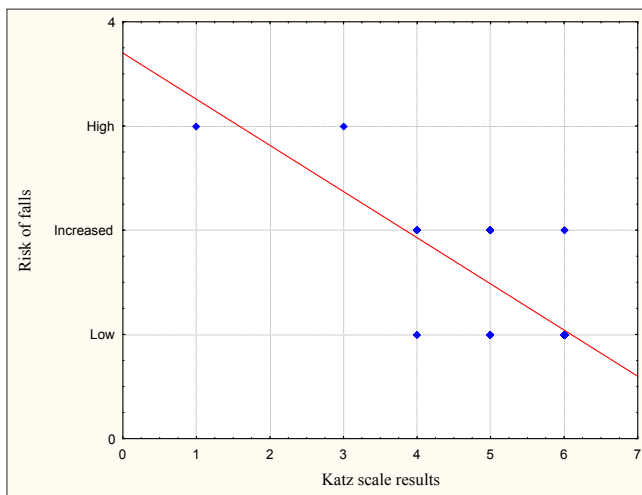


FIGURE 3. Correlation between the risk of falls (according to Tinetti Test) and independence in performing basic life activities (according to Katz scale), N = 102.

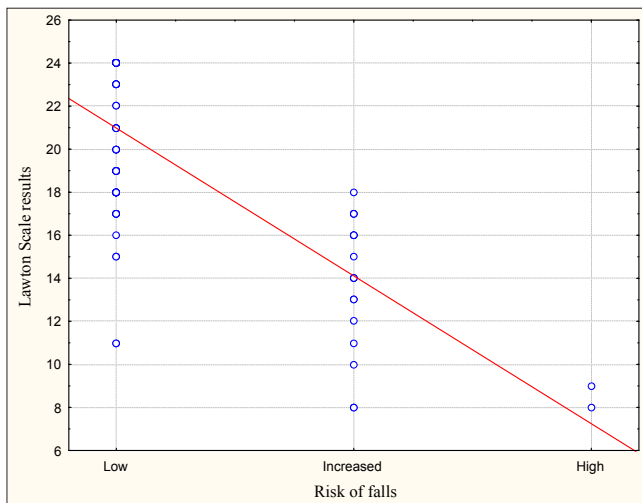


FIGURE 4. Correlation between independence in performing complex life activities and risk of falls (N = 102).

## DISCUSSION

Independence in doing some basic life activities (ADL) is a vital element of personal characteristics [8]. In this group most of the people (90.2%) were able to do some activities maybe because we excluded mentally ill people. Similar results were obtained in the research done among the patients of social care centres, where were people without heavy somatic and mental diseases [9].

J. Pruszyński and colleagues did research among patients of a nursery care centre and they did not exclude people with disorders of cognitive functions. And then, 77% of the people were not able to do some activities in the range of ADL [10].

Epidemiologic research proved that ADL disability is getting bigger when people are getting older [11]. Our own results ( $p < 0.01$ ) and the data taken by Wojszel et al. from 313 elderly people living in the country [12] confirm correlation between these variables.

The important aspect of physical functioning of elderly people is their independence in doing complex everyday life activities [8]. Having carried out the present research, we know that only 33.3% of the researched group was fully able to do such activities. Older people lack the ability to do

complex activities on their own (IADL) and after some time they are not able to do basic activities (ADL), either [10]. There is also correlation between the age and independence of doing complex activities IADL ( $p < 0.001$ ). The research done by other researchers confirm this situation [13].

When people are getting older, falls become a very serious problem. In our daily practice we don't often pay enough attention to the post-fall syndrome – it occurs when a person who had a fall, is afraid of another one. The consequence is that the person starts to reduce their life activity, which leads to decrease in fitness and abilities and eventually to increase in the risks for other falls [9, 14].

There was also found statistically significant correlation between risks for falls and independence in doing basic (ADL) and complex (IADL) daily life activities ( $p < 0.001$ ).

The results of the research show clearly that comprehensive and complex geriatric care is necessary in order to maintain the independence [of the elderly] for as long as possible. In case of loss of independence, it should be restored whenever possible. We ought to promote New Lifestyle full of active and creative activities among elderly members of our society [15].

## CONCLUSIONS

1. Elderly people living in the rural areas are able to do more basic life activities on their own. However, doing some complex life activities is a very common problem for many of them.
2. Independence of older people, when we talk about basic and complex life activities, is getting smaller and it is the same for both men and women.
3. Together with lack of fitness and independence in doing basic and complex life activities, the risk of falls is becoming bigger.

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