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The Relationship Between the Communication Capabilities, Quality of Life, and Physical Activity of Older Adults

SUMMARY

Quality of life of the elderly is an important social problem due to demographic changes associated with lengthening life expectancy. With age, numerous health problems tend to appear, most commonly vision and hearing defects. A consequence of age-related hearing loss is difficulty associated with communication capabilities. This in turn affects quality of life, relations with loved ones, and the effectiveness of social contacts. The aim of the survey, conducted among 116 people aged over 60 years old, was an attempt to analyse the relationship between communications capabilities (using the SAC self-assessment questionnaire) and quality of life (the WHOQOL-BREF questionnaire). The results established that the quality of life of older adults stood at an average level, while their auditory capabilities were described as good. The higher the assessment of health, activity and physical fitness, the higher the quality of life and this was also associated with slightly better capabilities of communicating with their surroundings. Lower quality of life in the areas of physical health, social relations, scope of communication, were declared by respondents from the group over 70 years of age. Men slightly more often than women indicated worse communication capabilities. No correlation was found between the quality of life of the respondents and self-assessment of their communication capabilities. There is a need solutions to support preventive physical activity in groups of older adults and younger people which would affect quality of life, and can

contribute to improving the quality of communication, among others, by broadening the network of interpersonal contacts.

Key words: older adults, quality of life, hearing, physical activity, physical fitness

INTRODUCTION

According to data from the Central Statistical Office of 2016, the population in Poland amounted to 38.433 thousand people, of which 77.69.5 thousand were older adults, that is, over 60 (Struktura Ludności Według Wieków w Latach 1970–2050 [Population Structure by Age in 1970-2050], 2017). In Poland in 2016, men lived an average of 73.9 years, and women 81.9 years (Trwanie Życia w 2016 roku [Life Expectancy in 2016], 2017). It is estimated that people over 60 in Poland will reach 8.9 million in 2025, and even 9.6 million in 2035 (Sytuacja Demograficzna Osób Starszych i Konsekwencje Starzenia Się Ludności Polski w Świetle Prognozy Na Lata 2014-2050 [The Demographic Situation of the Elderly and the Consequences of the Ageing of the Polish Population in the Light of Forecasts or 2014-2050], 2014), the number of people over 80 will increase by 180%, while the number of young people under 24 will decrease by 44% (Derejczyk et al., 2008). The extension of life results in the change of its quality, mainly in the areas of activity and self-awareness of older adults. Maintaining and improving the quality of life of older adults has become a goal of social policy and public health planning as well as a subject of scientific research (Active Ageing a Policy Framework, 2002). However, increasing public awareness and efforts in health promotion do not compensate for deficits – age-related weakening of the functioning of all the senses: taste, touch, smell, sight, and hearing (Boyce, 2006), which have objective and subjective effects on individual senses of quality of life. One of the significant age-related changes is hearing loss, which consequently causes deterioration of verbal communication and increases problems in social relations (Classon et al., 2014). It is estimated that the incidence of significant hearing loss among people aged 65–75 years is around 30%–35%, and among people aged 75 or over, it increases to 40% to 50%. Elderly men more often than women have hearing loss (Communicating With Older Adults: An Evidence-Based Review of What Really Works, The Gerontological Society of America, 2012). Hearing loss associated with age is usually due to the cumulative effects of exposure to noise throughout life, and it emerges as a natural process after the age of 70 (Schow & Nerbonne, 1982). What are particularly troublesome are the limitations of hearing ability and dif-

difficulties in distinguishing between speech and ambient sounds, particularly at high frequencies. As a result, speech becomes unintelligible, and there are difficulties orientating within the environment. Paradoxically, however, some sounds may appear too loud (Communicating With Older Adults: An Evidence-Based Review of What Really Works, The Gerontological Society of America, 2012). The first symptom of hearing loss is difficulty in understanding speech against background noise, for example, when a radio is on. A common element that accompanies age-related hearing loss is frequent tinnitus and unspecific balance disturbances. Hearing loss not only hampers communication, but also increases the risk of other disorders. Among others, in older adults with slight hearing loss, the risk of depression is doubled, in those with medium hearing loss, which is three times higher than average, and in patients with deep hearing loss, it is five times higher. In addition, among people over 65 years of age with impaired hearing, 33% have cognitive impairment, 80% have episodes of memory impairment, and there is a 90% probability of Alzheimer's disease (Skarżyński, 2014). In addition, many age-related changes in understanding language result from the gradual and permanent deterioration of working memory – the brain system that provides temporary storage and manipulation of information necessary to perform complex cognitive tasks (including language comprehension) (Orange, 2009). The communication process, understood as the exchange of information between the sender and the recipient of the message, is made more difficult in the group of older adults, due to hearing and dementia processes (Schow & Nerbonne, 1982).

It was assumed that communication and satisfaction with its course could be an important factor in determining the quality of life of older adults. Health problems and illnesses that interfere with human functioning to varying degrees cause differences in the perceived quality of life. The concept of quality of life is ambiguous and often equates with health. Quality of life is a set of living conditions and human activities. It covers the physical, material, and socio-cultural environments and various spheres of life and activities such as education, family, work, leisure. These conditions are most reflected in the subjective quality of life and are its determinants. Quality of life is the result of the assessment and evaluation of various spheres of life and life as a whole. For this study, it was assumed that quality of life is the perception of people, of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns. This definition reflects the view that quality of life is a multidimensional con-

cept referring to a subjective assessment that is related to cultural, social, and environmental contexts. The multidimensionality of quality of life is reflected in the structure of the WHOQOL questionnaire used in this research, which allows determination of the perceived quality of life in the somatic, social, environmental, and psychological spheres (WHOQOL-BREF Introduction, Administration, Scoring, and Generic Version of the Assessment. Field Trial Version, 1996).

MATERIALS AND METHODS

The purpose of this survey was to establish relationships between variables such as sex, age, place of residence, education, marital status, subjective assessment of health status, physical fitness and activity of the participants, communication capabilities, and perceived quality of life. These were determined using the following diagnostic tools:

- A personal questionnaire in which respondents were asked about their sociodemographic situation and a subjective assessment of their general state of health, physical fitness, and activity;
- Self-Assessment of Communication (SAC) questionnaire (Schow & Nerbonne, 1982);
- An abbreviated version of the Quality of Life Questionnaire The World Health Organization. Quality of Life (WHOQOL)-BREF (WHOQOL-BREF Introduction, Administration, Scoring and Generic Version of the Assessment. Field Trial Version, 1996). In total, over 200 participants participated in the entire research project. The inclusion criteria were age of the respondent, at least 60 years, and written consent for participation. Free and informed consent was obtained from all respondents. A total of 116 (nearly 60%) completed documents were included in the statistical analyses.

The SAC questionnaire consists of 10 closed questions regarding respondents' feelings in various communication situations, in contact with other people (Cronbach's alpha = 0.94 in the authors' own studies, 0.85, and 0.81 in an adolescent group (Wright et al., 2010), confirming the high reliability of the tool used). The task of the respondents was to rate the frequency of occurrence of certain difficulties during everyday communication situations on a five-point scale from "almost never" (one point) to "almost always" (five points). The authors of the questionnaire attempted to construct a screening tool that would be able to identify individuals who found communication so difficult that they require specialist intervention- audiological (in the form of objective examination of their hear-

ing and possibly prosthesis). The first studies using the SAC questionnaire indicated its effectiveness (Schow & Nerbonne, 1982); however, the authors did not further research it.

Answers to questions 1 to 6 relate to the assessment of communication difficulties in different life situations and social contacts, while answers to the following questions, 7 and 8, determine the general feelings of the patient about their hearing loss, and 9 and 10, check whether and how other people from the subject's surroundings refer to their hearing difficulties; they determine the attitudes of other people to the hearing ability of the subject. The subject could receive 10 to 50 points. A higher result indicates a greater severity of communication difficulties, and thus may indicate problems in the area of hearing (Schow & Nerbonne, 1982).

The short questionnaire assessing the quality of life, the WHOQOL-BREF, is available in 19 languages, including Polish. The short version of the questionnaire consists of 26 statements and examines the quality of life in four areas (domains): somatic (physical health, items: 3, 4, 10, 15, 16, 17, and 18, concerning, *inter alia*, the possibility of undertaking activities related to everyday, normal life, including mobility, dependence on medication and medical help, feeling tired, and pain and discomfort), psychological (items: 5, 6, 7, 11, 19, and 26, statements relating to self-esteem, self-image, body appearance, feelings dominating in everyday life, and cognitive efficiency), social relations (items: 20, 21, and 22, including satisfaction from social and sexual lives and social support), environmental (items: 8, 9, 12, 13, 14, 23, 24, and 25, concerning, among other things, security, including financial, access to information, medical care, the possibility of organizing free time, and housing conditions). The first two questions concern the respondents' assessment of their generally perceived quality of life and satisfaction with their health. Cronbach's alpha for individual domains in studies by Polish authors amounted to 0.80 for the somatic domain, 0.78 for the psychological, and 0.78 for the environmental domains. In the case of the social domain, it was assumed that the reliability was insufficient, amounting to 0.63 (Feder et al., 2015; Kowalska et al., 2012). Assessment of individual domains is scaled in a positive direction in such a way that higher values indicate higher quality of life. The conversion of raw values of points obtained for particular fields into a scoring scale ranging from 0 to 100 points was applied in accordance with the WHO recommendation (Kowalska et al., 2012; WHOQOL-BREF Introduction, Administration, Scoring and Generic Version of the Assessment. Field Trial Version, 1996). The overall result from all domains can be assigned to the sten values (Kowalska et al., 2012).

STATISTICS

The following tests were used for the purpose of this work: for questions on nominal scales: Cramer's V, Phi, based on the chi-square test, and for questions on ordinal scales, i.e., for establishing relationships between the education of the respondents and their physical activity, self-assessed level of physical fitness, past and current physical activity, subjective assessment of physical activity and the physical fitness assessment level of the participants: Kendall's Tau-b or Tau-c tests, which do not require a minimum expected size. Compound strength measures were normalized to take values from the range (0–1), which means respectively from 0–0.29- weak dependence, 0.30–0.49- moderate dependence and 0.5–1-strong dependence. In a situation where the dependent variable was defined on a quantitative/ordinal scale and independent of qualitative, nonparametric, Mann-Whitney U, and Kruskal-Wallis tests were used in the case of establishing a link between the quality of life, self-esteem, communications capabilities, and age of older adults in south-eastern Poland, their subjective assessment of their general state health, and evaluation of current physical activity and fitness. For quantitative/ordinal variables, that is, to establish the relationship between the quality of life of older adults and self-assessment of their communication capabilities, Spearman's rank correlation was used, where the maximum degree of correlation takes the value of 1. The closer the degree of relation to this border approach, the more an increase in the value of one variable is accompanied by an increase in the value of the second variable. The statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS). The level of significance was set at $p < 0.05$. Statistical analyses were aimed primarily at identifying relationships between the quality of life (defined in four dimensions/domains: somatic, psychological, social relations, and environmental) and self-assessment of the communication capabilities of older adults surveyed, and such independent variables as sex, age, place of residence, education, marital status, subjective assessment of health status, and physical fitness and activity. In addition, the relationships between current physical activity and selected sociodemographic variables are shown.

RESULTS

A total of 116 fully completed questionnaires were included in the statistical analysis. The research was conducted in cities, towns, and vil-

lages in south-eastern Poland. Seniors are members of the Universities of the Third Age and Seniors' Clubs. About 58.6% of the respondents live in small towns, 30.2% in the countryside, and the remaining 11.2% respondents live in a big city. The age of the respondents also varied. Respondents aged 60 to 70 years accounted for 38.8%, and those older than 70 years accounted for 61.2%. The group was predominantly female (80.2%; the significant difference in the distribution of the sex of the respondents may be explained by the longer life expectancy of women (Trwanie Życia w 2016 Roku [Life Expectancy in 2016], 2017)). According to the answers given by seniors 37.9% have secondary education; 26.7% higher education; 25.0% professional education and 10.3% primary education.

The vast majority of the surveyed older adults were in stable partnerships, 56.0%, widowed, 30.2%, divorced, 5.2%, or alone, and 8.6% did not indicate. None of the older adults at the time of the research worked – they were retired or early retired. Slightly more than half of the respondents (54.3%) declared that they had performed office work in the past, and the remainder had performed physical work.

The participants were asked to self-determine their general state of health, their current and past levels of physical activity, and their motives for taking it.

Over half of the older adults (50.9%) could not assess the general state of their health. Good health was declared by 39.7% of the respondents, and poor health by 9.5%. Current physical fitness was indicated as an average of 70.7% of the respondents, good by 23.3%, and poor by 6.0%. About 58.6% of the older adults were physically active only on an occasional basis, while 33.6% exercised regularly. The others (7.8%) were not physically active. In the past, 50.9% of the respondents were regularly physically active, 45.7% were occasionally active. The most important motive for the respondents to undertake physical activity is health, for 63.8% of respondents, and enjoying time spent in that way (23.3%).

Statistical analyses indicated that there was a relationship between the education of the respondents and their current physical activity (Table I) and the assessment of their own physical fitness (Table I).

Table I

People with higher education more often undertook regular physical activity and assessed their physical fitness as good. In addition, there was a moderately statistically significant correlation between past and current levels of physical activity. Older adults who were regularly active in the

past currently more often undertake regular physical activity (Table II).

Table II

Respondents who declared regular physical activity indicated a higher rating of physical fitness (Table III).

Table III

The quality of life of older adults was moderate. The overall result falls within the limits of the Sten 6 criterion according to Brzeziński (Kowalska et al., 2012), and is a moderate or average result. The research results indicate that older adults rate their quality of life the highest in the somatic and physical health fields. A slightly lower quality of life was found in the social, environmental, and psychological areas. The older adults surveyed in the study group point to a fairly good level of self-assessment of communication, which may indicate relatively good hearing, so much so that it does not hinder everyday communication (Table IV).

Table IV

The analyses conducted showed no statistically significant correlations between the quality of life of the older adults surveyed, defined in individual fields by means of the WHOQOL-BREF questionnaire, and their communication capabilities, measured using the SAC Self-Assessment Questionnaire (Table V).

Table V

Further statistical analysis showed differences in the quality of life of the older adults surveyed and their communications capabilities, depending on selected variables identified as independent (socio-demographic). Gender was a factor that differentiated only the self-assessment of the communication capabilities of the older adults surveyed. An analysis using the Mann-Whitney U test showed that women had slightly better hearing than men ($p=0.003$). The age of the respondents was a factor that differentiated the quality of life and self-assessment of communication capabilities (Table VI).

Table VI

Younger respondents, those between 60 and 70 years of age, more often indicated a better quality of life in the fields of health and social relations as well as slightly better capabilities in the field of communication. Neither the education of the respondents nor their place of residence caused significant differences in the quality of life or the communication capabilities of older adults.

Analysis using the Kruskal-Wallis test showed a statistically significant difference determined by the marital status of the participants. The divorced respondents were characterized by a slightly worse quality of life in the environmental field ($p=0.018$). There is also a tendency that these people define their own communication capabilities as a little worse, but the difference in this case was statistically insignificant. The respondents who performed physical work in the past were characterized by a slightly worse quality of life in the environmental field (Mann-Whitney U, $p=0.038$). The Kruskal-Wallis test analysis indicated the existence of a statistical relationship between the quality of life of the respondents and the general state of their health (in their own assessment) (Table VI), their activity (Table VI), and physical fitness (Table VI). Older adults who rate their health higher have a better quality of life in each of the areas studied (Table VI). Additionally, these participants indicate slightly better hearing, but in this case the difference was statistically insignificant. Older adults who remain physically active more often indicate a better quality of life, mainly in the physical, psychological, and environmental areas (Table VI). In the case of social relations and hearing assessment, there was no statistically significant difference due to current physical activity. The participants who rated their physical fitness more highly indicated better quality of life in each of the studied areas as well as having slightly better hearing, but in this case the difference was statistically insignificant (Table VI).

DISCUSSION AND CONCLUSION

The older adult population comprises a diverse social group. There are changes related to the biological process of aging, and health problem characteristics of this period of life may appear, such as Alzheimer's disease (Communicating With Older Adults: An Evidence-Based Review of What Really Works, The Gerontological Society of America, 2012) and deafness (Dillon et al., n.d.; Skarżyński, 2014). All these factors can affect quality of life. The general health condition of people over 60, expressed

by functional, physical and mental fitness, self-reliance and independence from the care of second or third persons, is currently unfavorable (Ćwirlej-Sozańska, 2014). Changes in psychosocial functioning that accompany biological changes depend on many factors. Environmental and psychosocioeconomic factors affect an individual's health, altering the performance of biological systems and affecting disease risk and progression. Concerns in modern society are increasingly devoted to stress and its influence on health. Life span is extended, but the quality of life, well-being, and productivity usually do not follow that extension (Tomljenovi, 2014). Apart from those related to the efficiency of one's own body, the number and quality of lived experiences and relationships with the surrounding social environment are important (for example, the frequency of intergenerational contacts has a significant impact on health-related quality of life, and close and frequent contact with offspring is an important source of quality of life during old age (Kirchengast & Haslinger, 2015)). The rate of accumulation of biological deterioration is also dependent on the accumulation of burdens and the resulting deficits (as a result of somatic diseases, injuries, and addictions). Changes occurring in the aging process are largely individual; hence, the quality of life of older adults depends not only on biological changes in the body but also, and perhaps primarily, on experiences and habits, such as in physical activity (Anokye et al., 2012; Ćwirlej-Sozańska, 2014), cognitive area, and eating habits (Laskowska-Szcześniak & Kozak-Szkopek, 2013). At the same time, it must not be forgotten that despite the aging of the body, many processes remain unchanged. For example, despite the deteriorating conditions associated with the functioning of the senses (senile hearing loss, vision problems) (Dillon et al., n.d.), there is no evidence of the deterioration of most aspects of language knowledge, including articulation, lexis, and speech understanding. Vocabulary can undergo quantitative and qualitative changes with age. Similarly, crystallized intelligence – knowledge acquired through education and experience – remains stable or increases with age (Communicating With Older Adults: An Evidence-Based Review of What Really Works, The Gerontological Society of America, 2012). In the authors' studies, no relationship has been demonstrated between the quality of life of older adults and self-assessment of their communication capabilities. Older adults determine their own communication capabilities quite well, which may indicate that they have relatively good hearing. The quality of life of the older adults in south-eastern Poland is at a moderate average level and is differentiated above all by the general health condition, physical activity, and physical fitness of the respondents.

Older adults who were regularly active in the past are still more likely to undertake regular physical activity at present; they also indicate a higher assessment of their physical fitness (Ćwirlej-Sozańska, 2014). The respondents most highly rated their quality of life in the somatic field in terms of physical health. Older respondents (over 70 years of age) have a worse quality of life in physical health and social relations as well as worse communication capabilities. Men slightly more often than women indicate worse communication capabilities (Communicating With Older Adults: An Evidence-Based Review of What Really Works, The Gerontological Society of America, 2012). Research has indirectly confirmed the importance of public education in a systematic physical culture – sustainable physical activity throughout life, which is in line with the recommendations of the World Health Organization (Aird & Buys, 2015; 'WHO Guidelines for Promoting Physical Activity among Older Persons', 1997). Furthermore, higher levels of activity in women and their regularity are also connected with the possibility of maintaining better results in the sphere of cognitive functions, leading to slower decline (Weuve et al., 2004).

Therefore, there appears to be an unavoidable necessity to introduce systemic solutions to support preventive physical activity in groups of older adults and younger people (Active Ageing a Policy Framework, 2002), which would affect quality of life, and can contribute to improving the quality of communication, among others, by broadening the network of interpersonal contacts. Measures undertaken should aim toward the following:

1. Ensuring access to medical services, in order to care for overall health
2. Developing various forms of social activity for older adults, maintaining, and establishing social contacts, exchange information, and interpersonal communication.
3. Developing various forms of physical activity and fitness.

Successful aging requires life-long work. Care for health, maintaining physical as well as cognitive fitness, and appropriate health promotion behaviors, shaped as early as in childhood, can significantly slow down the adverse changes in health caused by the natural aging process.

REFERENCES

- Active Ageing a Policy Framework*. (2002). WHO Madrid.
- Aird, R. L., & Buys, L. (2015). Active Aging: Exploration into Self-Ratings of “Being Active,” Out-of-Home Physical Activity, and Participation among Older Australian Adults Living in Four Different Settings. *Journal of Aging Research*, 2015, 1–12. <https://doi.org/10.1155/2015/501823>
- Anokye, N. K., Trueman, P., Green, C., Pavey, T. G., & Taylor, R. S. (2012). Physical activity and health related quality of life. *BMC Public Health*, 12(1), 624. <https://doi.org/10.1186/1471-2458-12-624>
- Boyce, J. M. (2006). Effects of ageing on smell and taste. *Postgraduate Medical Journal*, 82(966), 239–241. <https://doi.org/10.1136/pgmj.2005.039453>
- Classon, E., Löfkvist, U., Rudner, M., & Rönnerberg, J. (2014). Verbal fluency in adults with postlingually acquired hearing impairment. *Speech, Language and Hearing*, 17(2), 88–100. <https://doi.org/10.1179/205057113X13781290153457>
- Communicating With Older Adults: An Evidence-Based Review of What Really Works*, The Gerontological Society of America. (2012). https://aging.arizona.edu/sites/aging/files/activity_1_reading_1.pdf
- Ćwirlej-Sozańska, A. (2014). Aktywność fizyczna a stan zdrowia osób starszych [Physical activity and the health condition of the elderly]. *Przegląd Medyczny Uniwersytetu Rzeszowskiego i Narodowego Instytutu Leków w Warszawie*, 2, 173–180.
- Derejczyk, J., Bień, B., Kokoszka-Paszko, J., & Szczygieł, J. (2008). Gerontologia i geriatria w Polsce na tle Europy – czy należy inwestować w ich rozwój w naszym kraju? [Gerontology and geriatrics in Poland against the background of Europe—Should we invest in their development in our country?]. *Gerontologia Polska*, 16(3), 149–159.
- Dillon, C. F., Gru, Q., Hoffman, H., & Ko, Ch.-W. (n.d.). *Vision, hearing, balance, and sensory impairment in Americans aged 70 years and over: United States, 1999–2006*. National Center for Health Statistics. <http://www.cdc.gov/nchs/data/databriefs/db31.htm>.
- Feder, K., Michaud, D. S., Keith, S. E., Voicescu, S. A., Marro, L., Than, J., Guay, M., Denning, A., Bower, T. J., Lavigne, E., Whelan, C., & van den Berg, F. (2015). An assessment of quality of life using the WHOQOL-BREF among participants living in the vicinity of wind turbines. *Environmental Research*, 142, 227–238. <https://doi.org/10.1016/j.envres.2015.06.043>
- Kirchengast, S., & Haslinger, B. (2015). Intergenerational Contacts Influence Health Related Quality Of Life (Hrql) And Subjective Well Being Among Austrian Elderly. *Collegium Antropologicum*, 39(3), 551–556.
- Kowalska, M., Skrzypek, M., Danso, F., & Humeniuk, M. (2012). Ocena wiarygodności kwestionariusza WHOQOL-BREF w badaniu jakości życia dorosłych, aktywnych zawodowo mieszkańców aglomeracji górnośląskiej [Evaluation of the credibility of the WHOQOL-BREF questionnaire in a study of the quality of life of adult, professionally active inhabitants of the Upper Silesia agglomeration]. *Przegląd Epidemiologiczny*, 66, 531–537.
- Laskowska-Szcześniak, M., & Kozak-Szkopek, E. (2013). Uwarunkowania pomyślnego starzenia, Wybrane Problemy Kliniczne [Conditions for successful ageing, Selected Clinical Problems]. *Forum Medycyny Rodzinnej*, 7(6), 287–294.
- Orange, J. B. (2009). *Language and Communication Disorders in Older Adults: Selected Considerations for Clinical Audiology*. Hearing Care for Adults.
- Schow, R. L., & Nerbonne, M. A. (1982). Communication screening profile: Use with elderly clients. *Ear and Hearing*, 3(3), 135–147. <https://doi.org/10.1097/00003446-198205000-00007>
- Skarżyński, H. (2014). *Znaczenie problemu zaburzeń komunikacji*. In: *Najczęstsze problemy medyczne wieku starszego w Polsce [The importance of the problem of communication disorders, in: The most frequent medical problems of the elderly in Poland]*. PAN.

- Struktura ludności według wieku w latach 1970–2050 [Population structure by age in 1970-2050].* (2017). GUS Warszawa.
- Sytuacja demograficzna osób starszych i konsekwencje starzenia się ludności Polski w świetle prognozy na lata 2014-2050 [The demographic situation of the elderly and the consequences of the ageing of the Polish population in the light of forecasts or 2014-2050].* (2014). GUS Warszawa.
- Tomljenovi, A. (2014). Holistic Approach To Human Health And Disease: Life Circumstances And Inner Processing. *Collegium Antropologicum*, 38(2), 787–792.
- Trwanie życia w 2016 roku [Life expectancy in 2016].* (2017). GUS Warszawa.
- Weuve, J., Kang, J. H., Manson, J. E., Breteler, M. M. B., Ware, J. H., & Grodstein, F. (2004). Physical activity, including walking, and cognitive function in older women. *JAMA*, 292(12), 1454–1461. <https://doi.org/10.1001/jama.292.12.1454>
- WHO guidelines for promoting physical activity among older persons. (1997). *Journal of Aging and Physical Activity*, 5, 1–8.
- WHOQOL-BREF Introduction, administration, scoring and generic version of the assessment. Field Trial Version.* (1996). WHO Genewa.
- Wright, K., English, K., & Elkayam, J. (2010). Reliability of the Self-Assessment of Communication-Adolescent (SAC-A). *Journal of Educational Audiology*, 16(4), 4–10.

TABLE I EDUCATION OF THE RESPONDENTS AND THEIR PHYSICAL ACTIVITY AND SELF-ASSESSMENT OF LEVEL OF PHYSICAL FITNESS

| | | | Education | | | | Total |
|---|------------|---|-----------|--------------|-----------|--------|-------|
| | | | Primary | Professional | Secondary | Higher | |
| Current physical activity | None | N | 2 | 4 | 2 | 1 | 9 |
| | | % | 16.7% | 13.8% | 4.5% | 3.2% | 7.8% |
| | Occasional | N | 9 | 17 | 25 | 17 | 68 |
| | | % | 75.0% | 58.6% | 56.8% | 54.8% | 58.6% |
| | Regular | N | 1 | 8 | 17 | 13 | 39 |
| | | % | 8.3% | 27.6% | 38.6% | 41.9% | 33.6% |
| Assessment of level of physical fitness | Low | N | 0 | 3 | 3 | 1 | 7 |
| | | % | 0.0% | 10.3% | 6.8% | 3.2% | 6.0% |
| | Average | N | 12 | 23 | 28 | 19 | 82 |
| | | % | 100.0% | 79.3% | 63.6% | 61.3% | 70.7% |
| | Good | N | 0 | 3 | 13 | 11 | 27 |
| | | % | 0.0% | 10.3% | 29.5% | 35.5% | 23.3% |
| p=0.001, Kendall's Tau-c=0.19 | | | | | | | |

TABLE II THE RELATIONSHIP BETWEEN PAST AND CURRENT PHYSICAL ACTIVITY OF OLDER ADULTS

| | | | Past physical activity | | | Total |
|---------------------------|------------|---|------------------------|------------|---------|--------|
| | | | None | Occasional | Regular | |
| Current physical activity | None | N | 0 | 5 | 4 | 9 |
| | | % | 0.0% | 9.4% | 6.8% | 7.8% |
| | Occasional | N | 4 | 39 | 25 | 68 |
| | | % | 100.0% | 73.6% | 42.4% | 58.6% |
| | Regular | N | 0 | 9 | 30 | 39 |
| | | % | 0.0% | 17.0% | 50.8% | 33.6% |
| Total | | N | 4 | 53 | 59 | 116 |
| | | % | 100.0% | 100.0% | 100.0% | 100.0% |

p<0.001, Kendall's Tau-b=0.32

TABLE III SUBJECTIVE ASSESSMENT OF OWN PHYSICAL ACTIVITY AND SELF-ASSESSMENT OF THEIR LEVEL OF PHYSICAL FITNESS

| | | | Current physical activity | | | Total |
|---|---------|---|---------------------------|------------|---------|--------|
| | | | None | Occasional | Regular | |
| Assessment of level of physical fitness | Low | N | 4 | 2 | 1 | 7 |
| | | % | 44.4% | 2.9% | 2.6% | 6.0% |
| | Average | N | 5 | 57 | 20 | 82 |
| | | % | 55.6% | 83.8% | 51.3% | 70.7% |
| | Good | N | 0 | 9 | 18 | 27 |
| | | % | 0.0% | 13.2% | 46.2% | 23.3% |
| Total | | N | 9 | 68 | 39 | 116 |
| | | % | 100.0% | 100.0% | 100.0% | 100.0% |

p<0.001, Kendall's Tau-b=0.42

TABLE IV DESCRIPTIVE STATISTICS FOR INDIVIDUAL DOMAINS (AREAS) OF QUALITY OF LIFE AND COMMUNICATION CAPABILITIES OF OLDER ADULTS (N=116)

| WHOQOL-BREF: area: | Physical (0-100) | Psychological (0-100) | Social (0-100) | Environmental (0-100) | SAC (10-50) |
|-----------------------|---------------------|--------------------------|-------------------|--------------------------|----------------|
| X | 66.22 | 59.12 | 60.27 | 60.23 | 15.63 |
| Me | 67.85 | 58.33 | 58.33 | 59.37 | 13.00 |
| SD | 11.80 | 13.19 | 14.42 | 9.947 | 7.14 |
| Minimum | 28.57 | 20.83 | 16.66 | 34.37 | 10 |
| Maximum | 92.85 | 87.50 | 100.00 | 87.50 | 41 |

TABLE V THE RELATIONSHIP BETWEEN THE QUALITY OF LIFE OF THE STUDIED OLDER ADULTS IN INDIVIDUAL AREAS AND SELF-ASSESSMENT OF THEIR COMMUNICATION CAPABILITIES

| Spearman's rank correlations | | SAC (10-50) |
|--|---------------------------|-------------|
| WHOQOL-BREF area: Physical (0-100) | Correlation coefficient | -.168 |
| | Significance (two-tailed) | .072 |
| WHOQOL-BREF area: Psychological (0-100) | Correlation coefficient | -.142 |
| | Significance (two-tailed) | .129 |
| WHOQOL-BREF area: Social (0-100) | Correlation coefficient | -.105 |
| | Significance (two-tailed) | .261 |
| WHOQOL-BREF area: Environmental (0-100) | Correlation coefficient | -.107 |
| | Significance (two-tailed) | .251 |

TABLE VI QUALITY OF LIFE AND SELF-ASSESSMENT OF COMMUNICATION CAPABILITIES OF OLDER ADULTS: THE AGE, A SUBJECTIVE ASSESSMENT OF THE GENERAL HEALTH, EVALUATION OF CURRENT PHYSICAL ACTIVITY AND PHYSICAL FITNESS

| Age of respondents | | WHOQOL-BREF area: Physical (0-100) | WHOQOL-BREF area: Psychological (0-100) | WHOQOL-BREF area: Social (0-100) | WHOQOL-BREF area: Environmental (0-100) | SAC (10-50) |
|------------------------------------|----|------------------------------------|---|----------------------------------|---|-------------|
| From 60 to 70 N = 71 | X | 68.86 | 60.50 | 62.32 | 61.17 | 14.06 |
| | Me | 67.85 | 62.50 | 58.33 | 62.50 | 12.00 |
| | SD | 10.35 | 12.77 | 14.49 | 9.45 | 5.406 |
| Over 70 N = 45 | X | 62.06 | 56.94 | 57.03 | 58.75 | 18.11 |
| | Me | 60.71 | 54.16 | 58.33 | 56.25 | 15.00 |
| | SD | 12.83 | 13.70 | 13.87 | 10.60 | 8.755 |
| Total N = 116 | X | 66.22 | 59.12 | 60.27 | 60.23 | 15.63 |
| | Me | 67.85 | 58.33 | 58.33 | 59.37 | 13.00 |
| | SD | 11.80 | 13.19 | 14.42 | 9.94 | 7.145 |
| Mann-Whitney U, p | | 0.003 | 0.127 | 0.049 | 0.15 | 0.006 |
| General health of the respondents | | | | | | |
| Poor N = 11 | X | 51.62 | 50.00 | 58.33 | 52.84 | 17.73 |
| | Me | 53.57 | 45.83 | 58.33 | 53.12 | 15.00 |
| | SD | 9.49 | 11.785 | 12.36 | 9.92 | 7.74 |
| Neither poor nor good n = 59 | X | 61.92 | 56.28 | 58.05 | 57.52 | 16.36 |
| | Me | 60.71 | 54.16 | 58.33 | 56.25 | 14.00 |
| | SD | 9.18 | 13.52 | 12.08 | 8.43 | 7.357 |
| Good N = 46 | X | 75.23 | 64.94 | 63.58 | 65.48 | 14.20 |
| | Me | 75.00 | 66.66 | 62.50 | 65.62 | 11.50 |
| | SD | 8.26 | 10.63 | 17.06 | 9.38 | 6.59 |
| Total N = 116 | X | 66.22 | 59.12 | 60.27 | 60.23 | 15.63 |
| | Me | 67.85 | 58.33 | 58.33 | 59.37 | 13.00 |
| | SD | 11.80 | 13.19 | 14.42 | 9.94 | 7.14 |
| Kruskal-Wallis test, p | | 0.00 | 0.00 | 0.10 | 0.00 | 0.09 |

Tabela 6. cd.

| Physical activity of the respondents | | | | | | |
|---|----|-------|--------|-------|-------|-------|
| Not active N = 9 | X | 56.74 | 51.38 | 55.55 | 50.34 | 17.11 |
| | Me | 53.57 | 50.00 | 58.33 | 53.12 | 12.00 |
| | SD | 12.16 | 12.67 | 9.316 | 8.90 | 9.99 |
| Occasional N = 68 | X | 64.54 | 57.78 | 60.29 | 59.23 | 16.18 |
| | Me | 64.28 | 58.33 | 58.33 | 59.37 | 14.00 |
| | SD | 10.53 | 12.34 | 13.36 | 8.79 | 7.58 |
| Regular N = 39 | X | 71.33 | 63.24 | 61.32 | 64.26 | 14.33 |
| | Me | 71.42 | 66.66 | 58.33 | 65.62 | 13.00 |
| | SD | 11.91 | 13.78 | 17.04 | 10.23 | 5.40 |
| Total N = 116 | X | 66.22 | 59.12 | 60.27 | 60.23 | 15.63 |
| | Me | 67.85 | 58.33 | 58.33 | 59.37 | 13.00 |
| | SD | 11.80 | 13.19 | 14.42 | 9.94 | 7.14 |
| Kruskal-Wallis test, p | | 0.001 | 0.019 | 0.327 | 0.001 | 0.399 |
| Physical fitness of the respondents (self-assessment) | | | | | | |
| Low N = 7 | X | 54.08 | 53.57 | 53.57 | 50.44 | 15.86 |
| | Me | 53.57 | 50.00 | 50.00 | 50.00 | 17.00 |
| | SD | 10.60 | 14.11 | 8.13 | 4.20 | 4.56 |
| Average N = 82 | X | 63.98 | 57.41 | 59.65 | 59.10 | 16.54 |
| | Me | 64.28 | 58.33 | 58.33 | 59.37 | 14.00 |
| | SD | 10.73 | 13.06 | 12.59 | 9.59 | 7.97 |
| Good N = 27 | X | 76.19 | 65.741 | 63.88 | 66.20 | 12.81 |
| | Me | 75.00 | 66.66 | 66.66 | 65.62 | 12.00 |
| | SD | 8.52 | 11.40 | 19.61 | 8.92 | 3.44 |
| Total N = 116 | X | 66.22 | 59.12 | 60.27 | 60.23 | 15.63 |
| | Me | 67.85 | 58.33 | 58.33 | 59.37 | 13.00 |
| | SD | 11.80 | 13.19 | 14.42 | 9.94 | 7.14 |
| Kruskal-Wallis test, p | | 0.000 | 0.004 | 0.036 | 0.000 | 0.117 |