



# Senior organizations at the time of SARS-CoV-2 pandemic life style and health competence of seniors. Part II

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A – Research concept and design, B – Collection and/or assembly of data, C – Data analysis and interpretation, D – Writing the article, E – Critical revision of the article, F – Final approval of the article

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## Abstract

**Introduction and objective.** Making healthy choices in any decade of life increases the chances for maintaining health as ageing progresses. In activities which build human health potential, protective factors, defined by a health-promoting life style and health competence, determined by cognitive and social skills, play important roles. The aim of the study was verification of the life style and health competence of seniors associated with senior organizations at the time of the SARS-CoV-2 pandemic.

**Materials and Method.** The basic tool used in the study was an author-constructed questionnaire containing proposals from the European Health Literacy Questionnaire HLS-EU-Q47. The criterion for selection was participation in meetings of senior organizations in the Lublin Province in eastern Poland. Results. The seniors in the study were highly aware of the importance of a health-promoting life style and physical activity from the aspect of good physical and mental wellbeing. The majority regularly engaged in physical activity and refrained from using stimulants. Although a part of respondents sporadically consumed alcohol, only a small percentage declared tobacco smoking, or use of other addictive substances. Despite many reports indicating that children and the elderly are most exposed to a low level of health competence, the results of the study demonstrated that the respondents obtained high results in this respect.

**Conclusions.** Seniors associated with senior organizations showed a more pro-health life style, compared to the general population of senior Poles. Regular physical activity, healthy eating habits, and avoidance of stimulants favoured their wellbeing. The functioning of senior organizations may constitute a justified way of protecting the quality of life of the largest age group in the future.

## Key words

life style, seniors, health literacy, pandemic, senior clubs, public health, ageing policy, challenges

## INTRODUCTION

Life style plays a fundamental role in composing human health resources, with the state of health being a kind of reflection of this. The World Health Organization (WHO) defines a healthy life style as ‘a way of living that lowers the risk of being seriously ill or dying early’ [1]. The variables characterizing life style include, among others, correct eating habits, and associated with this, the proper value of body mass index, regular physical activity, resigning or refraining from the use of addictive substances, and abuse of medicines [2]. Making healthy choices increases chances for maintaining health which, in the face of the phenomenon of ageing of societies and increasing life expectancy, plays an important role. Protective factors, defined by life style, play a crucial role in activities that build human health potential. An all-Polish study on the state of health of senior Poles provided alarming data in this respect. According to the result of the PolSenior2 study, older persons do not belong to the group undertaking regular pro-health activity in form, indicating that Polish seniors rarely participated in typical forms of physical activity. This was especially clearly observed

in rural areas, where only 32.5% of respondents reported such activity. Another unfavourable phenomenon exerting a negative effect on health of this social group was tobacco smoking. Its degree was determined using the DALY index (disability-adjusted life years) which, in the group of seniors was 24.4%, and had a great effect on the loss of years lived in health. The study additionally showed that seniors do not have beneficial eating habits, and the greatest disturbances in this area concern the oldest persons – inhabitants of small towns and villages.

Vaccinations are another important factor protecting the health of society. It was demonstrated that only 17.8% of the population of Polish seniors undertake vaccinations against flu. It is noteworthy that rural inhabitants were vaccinated twice as rarely as urban inhabitants [3]. Due to the fact that biological ageing of the body contributes to the reduction of physical strength and vital energy, there is an increased risk of leading an unhealthy life style in this age group.

A way to operationalize healthy aging is through self-assessment of health, which is a subjective but also inclusive and holistic measure considering biological, social, and cultural aspects [4]. Health competence (health literacy) plays an elementary role in developing strengths and resources, which enable gaining increased resistance to risk factors of somatic, mental diseases, and social psychopathologies. Health literacy is defined by the WHO as: ‘being able to

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access, understand, appraise and use information and services in ways that promote and maintain good health and well-being' [5]. This competence also refers to the skills of understanding and using information concerning health and disease. Systematization of the results of studies concerning health literacy can be used to better target interventions by various public institutions, including senior organizations [6]. According to the results of studies on health competence of Polish seniors, the oldest persons – the age group 65 and over – were at risk of a low level of health literacy. This index concerned 61.3% of Poles in this age group, whereas it was slightly lower in the age group 50 and below – 39.9% [7].

The presented study therefore focuses on analysis of the life style and the level of health competence in the group of seniors associated in senior organizations, with the aim of verification of the life style and health competence of seniors associated with senior organizations at the time of the SARS-CoV-2 pandemic.

## MATERIALS AND METHOD

In 2023, a survey was carried out based on the ecological model of aging. The first part concerned the analysis of the needs and limitations which seniors faced at the time of the COVID-19 pandemic [8]. Participation in the survey was voluntary, and the selection criterion was participation in meetings of senior organisations located in the Lublin Province of eastern Poland. The participants were 140 seniors aged over 60 who were associated with four senior organizations. The second part of the survey focused on the health behaviours and competence of seniors during the period of high epidemiological risk during the pandemic.. The basic tool used in the study was an author-constructed anonymous questionnaire containing items from the standardized European Health Literacy Questionnaire (HLS-EU-Q47). The aim was to recognize the components of health behaviours, including physical activity, number and quality of meals, use of stimulants, as well as the quality and length of sleep. Due to limited resources, data associated with the health disorders of the seniors were not taken into consideration. Some questions from the HLS Q47 questionnaire not directly related to the research problem were omitted.

Detailed data on the characteristics of the study group have been published previously in the journal *Annals of Agricultural and Environmental Medicine* [8].

The results of the study obtained were statistically analyzed using Statistica software. The research data was analyzed by the methods of descriptive statistics, and calculations performed using the  $\chi^2$  test for independence. The  $p$  value  $p \leq 0.05$  was considered statistically significant.

## RESULTS

Health behaviours of seniors associated with senior organizations during the COVID-19 pandemic. The majority of participants of classes in senior organizations were physically active (84.3%). Statistical tests did not confirm any significant relationship between seniors' physical activity and their gender ( $p=0.886$ ), age ( $p=0.760$ ), place of residence ( $p=0.416$ ), material standard ( $p=0.075$ ), or education

( $p=0.245$ ). From among the most popular forms of physical activity, the seniors most frequently mentioned: Nordic walking/walks (75.8%), aerobic (13.7%), or swimming (12.9%) (Fig. 1). The respondents most often undertook physical activity 2–3 times a week (41.9%), or even more frequently (33.1%) (Fig. 2). The mean duration of physical activity was most often 31–60 minutes (38.6%), more than an hour (29.9%), and less than 30 minutes (29.1%). Some of these activities (29.1%) were undertaken as part of the activities of senior organizations.

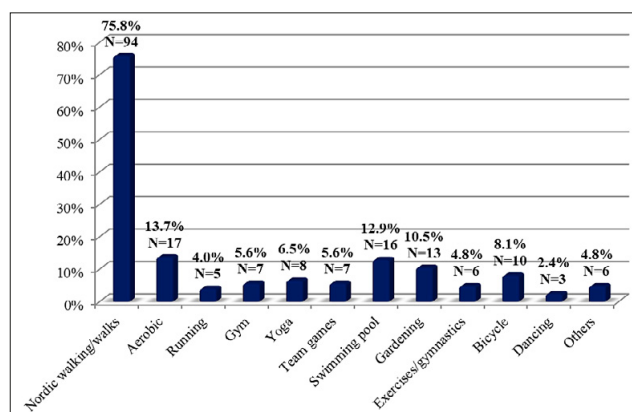


Figure 1. Types of physical activity undertaken by the surveyed seniors

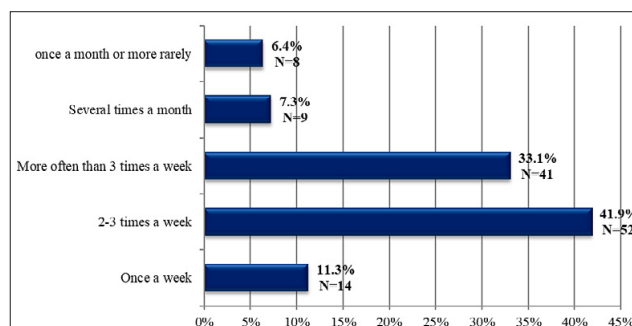


Figure 2. Frequency of undertaking physical activity by seniors

Seniors were asked about the number of meals consumed during the day. They most often declared the consumption of 3 (42.9%) or 4 meals (40%). According to the data collected, the seniors consumed meals at fixed times of the day. More than a half of the respondents (53.6%) consumed some meals regularly, whereas every fourth – all meals. Only 21.4% of the seniors ate irregularly. Interestingly, almost all seniors admitted that they were snacking during the day; as many as 32.8% snacked once a day, 24.3% – several times a day, while 22.9% – several times a week. Only 11.4% of respondents reported that they never snacked between meals.

Taking into account the most frequent answers, the respondents evaluated the quality of their meals as '7' (23.6%) and '8' (20%) according to the 10-point scale (where '1' – unhealthy food, '10' – best quality healthy food) (Fig. 3).

Persons attending classes in senior organizations were asked about the use of stimulants, such as: cigarettes, alcohol, or other substances. Both in the case of tobacco smoking (91.5%) or other types of stimulants (95%), the majority of respondents declared that they never used them. A considerably more popular choice was alcohol, with rare consumption (several times a month or more rarely) admitted by 62.9% of respondents. 35% declared abstinence (Fig. 4).

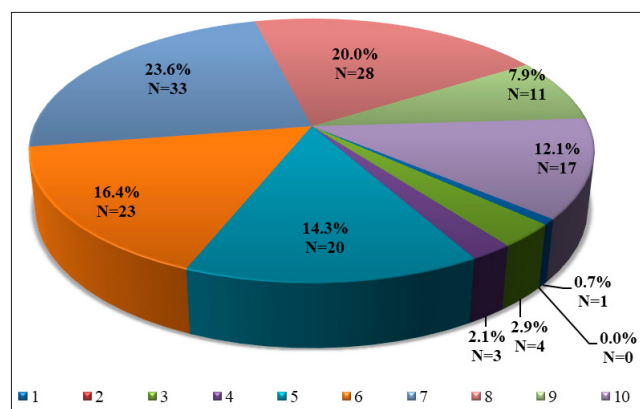


Figure 3. Assessment of the quality of meals according to the 1–10 scale

According to the data obtained 81.5% of males declared abstinence from cigarettes, whereas among females this answer was indicated by 93.8%. In this comparison, a statistically significant difference was observed ( $\chi^2=12.97$ ;  $p=0.002$ ). A similar tendency was noted in the case of abstaining from alcohol, an answer was indicated by as many as 39.8% of females, compared to only 14.8% of males ( $\chi^2=9.41$ ;  $p=0.009$ ). Statistical analysis demonstrated that as many as 76.5% of seniors who had higher education sporadically consumed alcohol, whereas seniors who had lower levels of education indicated this answer more rarely (secondary school/ post-secondary school education – 68.9%, primary vocational – 50%, primary – 33.34%). A statistically significant correlation was found between the respondents' level of education and the frequency of consumption of alcohol ( $\chi^2=13.46$ ,  $p=0.036$ ). However, no significant differences were observed between the frequency of using the above-mentioned stimulants and the respondents' age, place of residence, marital status, or material standard ( $p>0.05$ ).

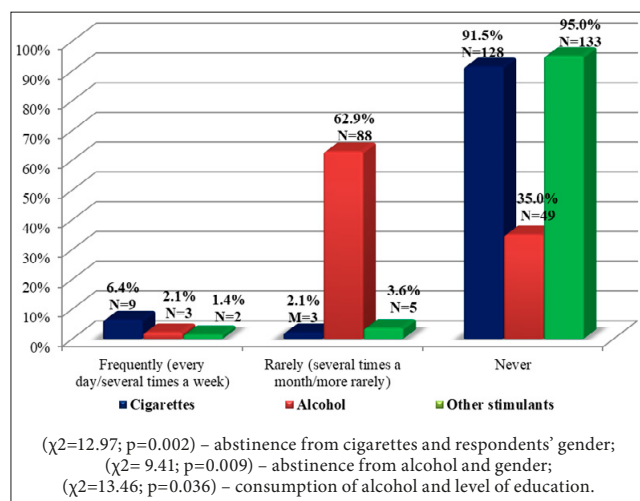


Figure 4. Frequency of using individual stimulants by seniors

The duration of sleep is also an important risk factor for developing non-communicable chronic diseases. The arithmetic mean calculated based on the seniors' declarations demonstrated that the respondents slept an average of 7 hours a night, and for about half-an-hour during the day (mode: 8h – number 41, 0h – number 96' respectively).

The relationship between the number of hours slept at night and the respondents' place of residence was examined. Rural

inhabitants most often slept for 8 hours (36.2% of those living in rural areas), whereas in urban areas this percentage was only 28.6%. It was similar with a slightly shorter, 7-hour leisure? Outside urban areas, this amount of sleep was declared by 29.3% of respondents, while this answer was indicated by 24.3% of seniors from urban areas, who more often decided to have a shorter 6-hour leisure (28.6%, compared to only 13.8% in rural areas). Statistical analysis performed showed a significant correlation between these variables ( $\chi^2=14.4$ ;  $p=0.044$ ) (Fig. 5). No significant differences were observed between the number of hours of sleep and the respondents' age, gender, marital status, or material standard ( $p>0.05$ ). The majority of the seniors attempted to achieve regular sleep hours (63.6%), while 17.9% of respondents rather did not. However, statistical analysis did not show significant differences between regularity of sleep and the respondents' age, gender, education, marital status, or material standard ( $p>0.05$ ).

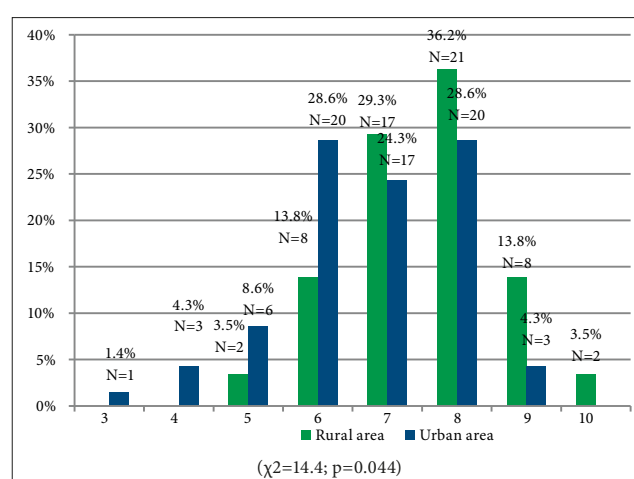


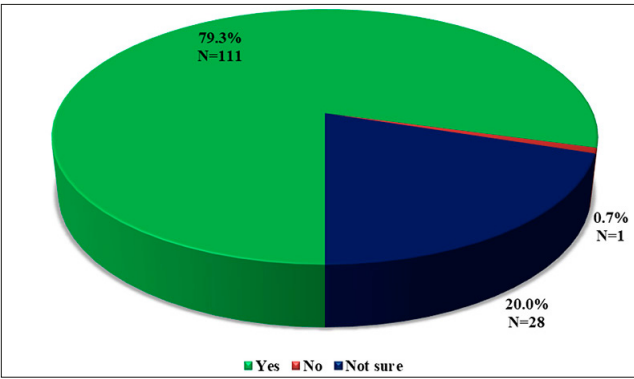
Figure 5. Respondents' place of residence and number of hours of sleep at night

Attitudes and health competence of seniors at the time of the COVID-2 pandemic. Health awareness covers specified health behaviours and mental states which may be induced by these behaviours [9]. The attitude of an individual towards own health promotes the undertaking of actions which protect and improve health [10].

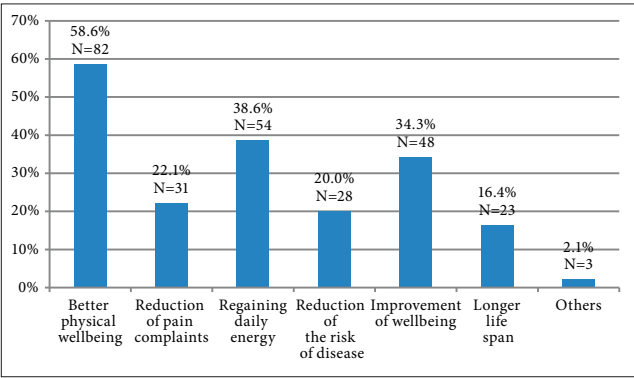
In the presented study, the respondents were asked about their attitude towards the statement that 'daily functioning in accordance with the principles of health-promoting life style may bring positive results'. The vast majority of seniors agreed with this thesis (79.3%), while 20% were undecided (Fig. 6). Those who provided an affirmative answer indicated primarily benefits related with better physical wellbeing (58.6%), regaining daily energy (38.6%), or improvement of psychological well-being (34.3%) (Fig. 7).

The analysis performed demonstrated that more than a half of the seniors who did not have any major problems were able to find information concerning the symptoms of their disease (62.2%), or the methods of treatment (55%). The majority also reported that they were aware of what to do in an emergency (59.2%), or where to obtain professional assistance during illness (66.4%). The seniors also declared that they knew what to do in case of a sudden threat to health or life (60.7%), or how to use the information provided by the doctor in practice (66.4%). Even more respondents expressed their belief that they were able to follow the instruction on the label of a given medication (78.6%).





**Figure 6.** Seniors’ attitude towards the statement that ‘daily functioning in accordance with the principles of health-promoting life style may bring positive results’



**Figure 7.** Results of functioning in accordance with the principles of health-promoting life style

The respondents were also asked about difficulty in finding information on health-related topics. In this case the answers varied. Almost 70% of seniors knew where to find information concerning coping with anti-health habits, and only 40% knew where to seek advice on problems related with psychological health. The situation was slightly better in the case of information on vaccinations and screening tests (54.3%). Although only 36.4% of respondents were able to evaluate which screening tests should be performed, nearly a half of them knew where to seek advice concerning activities favouring good psychological wellbeing (50.7%), or what to do to make own environment more friendly for health (49.2%). It was easier for seniors to assess which of the daily behaviours are associated with their health (61.5%), or what decisions to make in order to improve own health (60.8%). More than a half of seniors (57.1%) declared that they would have no problem joining a sports club if desired. Nevertheless, almost a half of the respondents knew how to shape living conditions which affect their health and well-being (48.6%), or how to participate in activities promoting the health and wellbeing of the local community (47.1%) (Tab. 1).

DISCUSSION

From among the positive effects of socio-economic and medical development there should be mentioned, among other things, increasing average life expectancy at birth. Simultaneously, beside this trend, contemporary societies face an increasing number of seniors, which is associated with the necessity to undertake actions protecting the proper quality

**Table 1.** Selected health competence of seniors according to the European Health Literacy Questionnaire

| Question:<br>'How easy is to...'   | Very<br>difficult/<br>difficult | Relatively<br>easy/<br>easy | I do<br>not<br>know |
|--|---------------------------------|-----------------------------|---------------------|
| find information about the symptoms of the disease you are experiencing?   | n=49<br>27.1%                   | n=76<br>62.2%               | n=15<br>10.7%       |
| find information on methods of treatment for the diseases you suffer from?   | n=45<br>32.1%                   | n=77<br>55%                 | n=18<br>12.9%       |
| find out what to do in an emergency?   | n=39<br>27.9%                   | n=83<br>59.2%               | n=18<br>12.9%       |
| find out where to get professional assistance in the case of illness?  | n=46<br>32.9%                   | n=93<br>66.4%               | n=1<br>0.7%         |
| understand what to do in the event of a sudden threat to health or life?   | n=39<br>27.9%                   | n=85<br>60.7%               | n=16<br>11.4%       |
| use information provided by a doctor in order to make decisions concerning own disease?  | n=35<br>25%                     | n=93<br>66.4%               | n=12<br>8.6%        |
| follow the instructions on the label of a medication?  | n=22<br>15.7%                   | n=110<br>78.6%              | n=8<br>5.7%         |
| find information on how to cope with anti-health habits, such as: smoking, low physical activity and consuming excessive amounts of alcohol? | n=24<br>17.1%                   | n=97<br>69.3%               | n=19<br>13.6%       |
| find information on how to deal with mental health problems, such as stress and depression?  | n=60<br>42.9%                   | n=56<br>40%                 | n=24<br>17.1%       |
| find information concerning vaccinations and screening tests which should be performed?  | n=41<br>29.3%                   | n=76<br>54.3%               | n=23<br>16.4%       |
| evaluate what screening tests should be performed?   | n=56<br>40%                     | n=51<br>36.4%               | n=33<br>23.6%       |
| find out about activities which promote good psychological wellbeing?  | n=47<br>33.6%                   | n=71<br>50.7%               | n=22<br>15.7%       |
| find out what to do to make own surroundings more health-friendly?   | n=46<br>32.9%                   | n=69<br>49.2%               | n=25<br>17.9%       |
| evaluate which daily behaviours are associated with own health?  | n=30<br>21.4%                   | n=86<br>61.5%               | n=24<br>17.1%       |
| make decisions in order to improve own health?   | n=38<br>27.1%                   | n=85<br>60.8%               | n=17<br>12.1%       |
| join a sports club or gymnastics if you feel like it?  | n=33<br>23.6%                   | n=80<br>57.1%               | n=27<br>19.3%       |
| shape own living conditions which affect your health and well-being?   | n=44<br>31.4%                   | n=68<br>48.6%               | n=28<br>20%         |
| participate in activities which promote the health and wellbeing of the local community?   | n=42<br>30%                     | n=66<br>47.1%               | n=32<br>22.9%       |

of life of increasingly older populations [11]. Unsatisfied needs of a growing social group may constitute a basic risk for physical and psycho-social wellbeing, predisposing to a passive life style which, in turn, may exert an effect on physical and psychological health, including the quality of life [12]. Making healthy choices in any decade of life increases chances for maintaining health as aging progresses. Self-assessment of health is the correct way to secure a healthy aging process, because it is a complex, but subjective measure which may take into consideration the biological, social, and cultural aspects of the context in which a given person functions. These measures are a predictive factor in protecting the future health needs of the ageing population [12]. Own studies concerning respondents’ declarations regarding health behaviours showed that the seniors presented a high level of skills regarding undertaking behaviours which build health potential. The respondents were more aware of the importance of health-promoting life style and physical

activity from the aspect of good wellbeing and health. In contrast to seniors participating in cross-sectional studies carried out within the PolSenior2 project, the majority of the participants declared a high level of physical activity, with a preference for activities such as Nordic walking, aerobics, or swimming [3]. Importantly, physical activity was commonly undertaken by seniors, irrespective of socio-demographic characteristics.

The beneficial health activities of the seniors in the current study also included those related with the mode of nutrition. It demonstrated that the majority of nutritional activities undertaken by seniors was in accordance with the recommendations by the National Institute of Public Health – National Institute of Hygiene [13]. In addition, more than a half of respondents attached great importance to the regularity of meals, and the vast majority of them consumed the recommended 3–4 meals a day.

An increased risk of disease and injuries may be the result of using stimulants, especially tobacco and alcohol, which are responsible for approximately 15% and 5.3% of deaths worldwide [14, 15]. Studies conducted to-date confirmed that more than 70% of the total number of deaths related with tobacco smoking concern persons aged over 60. In addition, compared to active smokers, persons who discontinued smoking after the age of 65 may extend their lifespan by an average of 3 years, and reduce the risk of disability [16]. The results of the PolSenior2 project also confirmed that a considerably higher percentage of DALY (24.4%) resulting from tobacco smoking concerns seniors. The report indicated that tobacco smoking is still widespread among seniors, involving 14.1% [3]. Nevertheless, the presented study concerning stimulants showed that seniors rarely used cigarettes and other substances, and sporadically consumed alcohol (several times a month or more rarely: 62.9% of respondents). Both with respect to tobacco smoking (91.4%) or use of other types of stimulants (95%), the majority of respondents declared that they never use them.

Despite many reports indicating that children and seniors are most exposed to a low level of health competence, the results of this study demonstrate that the respondents obtained beneficial results in this respect [17]. The seniors in the study were highly aware of the importance of health-promoting life style and physical activity from the aspect of good wellbeing and health, which seems very important, especially in the context of the COVID-19 pandemic, and potentially other epidemiological risks.

The phenomenon of the high level of physical activity and health competence of seniors associated in Polish senior clubs seems to be close to health-promoting behaviours of seniors in Asia. According to a study carried out in Japan, the level of health literacy increases with age. It is noteworthy that seniors are one of the largest groups in society. Simultaneously, Japan is a model example of how senior policy works, exerting a beneficial effect on the high quality of the life of seniors [18].

A study conducted by Eriksson-Backa et al. demonstrated that both undertaking pro-health activity and a stronger awareness of the role of healthy life style were positively related not only with better health of seniors, but also more independent information behaviour [19]. Also, the skills of understanding and using information concerning health and disease are an important predictive factors of health competence. According to the results of the study, seniors were able to use information provided by a doctor in order

to make decisions concerning own illness (66.4%), and follow instructions on the label of the medication (78.6%). However, the results of a study by Niedorys-Karczmarczyk, which confirmed that seniors often indicated inability to independently navigate the health care, had problems with processing information, making correct health decisions, or independent coping with a chronic disease, are in contrast to these data [20]. Clear differences in the level of health competence were especially noticeable in persons aged over 76, who presented especially low knowledge of health issues [21].

The global process of the demographic ageing of societies also concerns Poland, where prognoses by the Chief Statistical Office indicate that already by 2040, persons aged over 80 will constitute as much as 36% of the cohort of seniors (65 and over) [22, 23]. Thus, the functioning of senior organizations may be a justified way to protect the quality of life of this largest age group in the future. According to the WHO, the process of optimizing health, participation and safety is the correct direction in order to improve the quality of life of seniors and ageing persons [24]. In the context of intensification of the process of ageing, development of health literacy should occupy a key position on the political agenda [7].

The analysis carried out in the presented survey provides a basis for further implementation of the study in a group of seniors affiliated with senior organizations. Due to limited resources, data related to prevalent health disorders of seniors that could affect the life style and health competence of seniors were not analyzed. It is possible that the implementation of a study with an expanded profile and including a larger group of seniors will make possible the discovery of other correlations.

## CONCLUSIONS

1. Above-average health competence and high level of physical activity of persons associated with senior organizations indicate that participation in this type of classes could exert a beneficial effect on the health and wellbeing of seniors in ageing society.
2. It was confirmed that among seniors associated with senior organizations, tobacco smoking was rare and alcohol only sporadically consumed. The beneficial trend related with a limited use of stimulants favours the improvement of the quality of life, and reduces the risk of chronic diseases.
3. Senior organizations play a key role in the promotion of a health-promoting life style. The functioning of the organizations favours an increase in health competence and physical activity, and the maintenance of a high quality of life, which is an important protective factor in the situation of epidemiological risk.
4. In the context of the expected increase in the number of seniors in Poland, this type of organizations are a key link in effectively responding to challenges related with the needs of seniors from the bio-psycho-social aspect.

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