

Jurkiewicz Beata, Barnaś Edyta, Kolpa Małgorzata. Senior education and the quality of life of women in different periods of old age. *Journal of Education, Health and Sport*. 2022;12(8):217-230. eISSN 2391-8306. DOI <http://dx.doi.org/10.12775/JEHS.2022.12.08.021>  
<https://apcz.umk.pl/JEHS/article/view/JEHS.2022.12.08.021>  
<https://zenodo.org/record/6951454>

The journal has had 40 points in Ministry of Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of December 21, 2021, No. The journal has had 40 points in Ministry of Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of December 21, 2021, No. 32343. Has a Journal's Unique Identifier: 201159. Scientific disciplines assigned: Physical Culture Sciences (Field of Medical sciences and health sciences); Health Sciences (Field of Medical Sciences and Health Sciences).

Punkty Ministerialne z 2019 - aktualny rok 40 punktów. Załącznik do komunikatu Ministra Edukacji i Nauki z dnia 21 grudnia 2021 r. Lp. 32343. Posiada Unikatowy Identyfikator Czasopisma: 201159. Przypisane dyscypliny naukowe: Nauki o kulturze fizycznej (Dziedzina nauk medycznych i nauk o zdrowiu); Nauki o zdrowiu (Dziedzina nauk medycznych i nauk o zdrowiu).

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The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 17.07.2022. Revised: 27.07.2022. Accepted: 02.08.2022.

## Senior education and the quality of life of women in different periods of old age

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## Abstract

Introduction. The current evolution in thinking considers the concern for the dignity of the elderly and their relationship with society. The intellectual and causal potential of older people, which was ignored so far, has also begun to be appreciated.

The aim of the study was to assess the quality of life and its determinants in the group of women over 65 years of age (including age groups), using various forms of education for seniors.

Material and methods. The study was conducted among women aged 65+ living in the Tarnów province (southern Poland): 205 educationally active seniors (group I) and 207 women who do not benefit from senior education (group II). The diagnostic survey method and standardized interview technique using the WHOQoL-AGE quality of life questionnaire were used.

Results and conclusions. A higher level of quality of life was associated primarily with participation in senior education, lower age and better material status of the examined women. It is recommended to carry out activities promoting participation in various forms of senior education, especially in the two oldest age groups (old & oldest old).

**Keywords quality of life; educational activity; women**

### **Abbreviations:**

AMTS - Abbreviated Mental Test Score; COURAGE - Collaborative Research on Aging in Europe; ELSA - English Longitudinal Study of Aging; ENABLE-AGE - Enabling Autonomy, Participation and Well-Being in Old Age; EPAL - Electronic Platform for Adult Learning in Europe; FIBRA - Frailty in Brazilian Older People; HRS - American Health and Retirement Study; SNI - Social Networks Index; SRRS - Social Readjustment Rating Scale; WHOQoL-AGE - World Health Organization Quality of Life.

### **Introduction**

Since the dawn of time, the aim of human aspirations has been to improve the quality of life, which resulted from the need to be happy, to feel comfortable and to satisfy one's needs. While some improved the quality of life in the material sphere, others sought to develop more in the spiritual sphere. Even today, the quality of life is often related to prosperity, and until recently it was identified with the working age generation. The current evolution in thinking considers the concern for the dignity of the elderly and their relationship with society. The intellectual and causal potential of older people, which was ignored so far, has also begun to be appreciated.

The quality of life of a human being is influenced by a range of coexisting factors, thus it is difficult to clearly assess the strength of each of them separately. The literature widely describes the relationship between quality of life with socio-demographic factors (sex, age, material status, etc.), and these in turn can indirectly influence the bio-psycho-social context of an individual. The literature indicates the sex as one of the significant determinants of inequality in the subjective perception of the quality of life between women and men, both in the biological and socio-cultural context. In almost every country of the world, women have longer life expectancy than men [1], however, their health status is poorer. By reaching an elderly age, women are more likely to suffer from diseases characteristic of an old age, which has a negative impact on their life quality [2,3]. Furthermore, the functioning of women in the psychosomatic sphere, which takes place during the menopause, may impact the perceived satisfaction from life and the health status self-assessment. The quality of life is deteriorated by natural, physiological symptoms: vasomotoric, somatic and psychological [4].

The longer life expectancy of women is furthermore linked to consequences in the field of emotions, due to the need to reconcile with the death of the spouse, which also impacts the perception of the quality of life in the early widowhood. The emotional changes women experience during bereavement require loss-oriented coping, while the inevitable changes in daily life necessitate restoration-oriented coping. However, research shows that a long-term widows do not differ in terms of emotional status and satisfaction with life from married women [5].

Another significant situation of experiencing a loss is the withdrawal from professional activity, which is commonly linked to deteriorated quality of life in material status, particularly

with regards to women. According to the European Commission, the difference in the amount of pension received by women and men in the UE primarily stems from the fact that the employment rate of women is lower than among men, women work less and for a shorter period of time and typically receive lower remuneration [6]. Although retirement constitutes a chance to develop interests and establishing new, non-professional objectives, it is undisputed that it is a difficult situation, requiring adaptation to new conditions and roles.

One of the significant factors, although not the only one, which may have a positive impact on the quality of life is the widely understood activity, which includes i.a. senior education from every perspective, both global, local, and individual, one can influence the quality of life through education. We require a different type of education at each stage of life, and motivation to learn by the elderly and retirees is typically purely personal [7]. According to the theory of activity by Cavan et al., the activity is a condition of positive adaptation to processes related to the aging of the body, and activity in the social, physical and intellectual sphere improves the quality of life of an individual [8]. The undertaking of educational activity by older people is stimulated by a number of different factors, which include in particular: civilization progress, development of science and technology, the idea of the learning society, as well as globalization of most spheres of life. The starting point in considerations concerning education in old age is Jacques Delors' concept of lifelong education. It is a proposal that fits perfectly into the model of active life, functioning and adaptation in the changing world [9]. Schalock and Verdugo confirm that the term quality of life reflects the desired living conditions, associated with such factors as independence, social participation and well-being [10]. Basic actions aiming at improving the quality of life through education indeed stem from the main theories concerning quality of life, and such actions are as follows: adaptation, social participation, obtaining and providing support, action, lifelong learning.

Participation in activities organized by the Universities of the Third Age (UTAs) and Senior Clubs can undoubtedly be considered an important aspect of prevention for the elderly, as they carry out their tasks in accordance with the idea of a lifelong learning continuum, and also affects the expansion and deepening of social contacts [11]. Opening up to permanent education is a sign of the attitude of responsibility for one's own life and has a positive impact on the quality of one's own old age. McClusky pointed out that education for old age should also take into account external factors such as social status, family support, strength and influences. Emphasizing the different levels of need, he pointed to the relationship between external requirements and personal resources which are the basis of education [12]. It is worth to mention that seniors, regardless of their health status, may be active, have strong social and psychological resources and mechanisms for coping with problems, and above all they value the ability to care for themselves [13].

Due to the growing feminization of an old age, the different socialization of women's and men's lives, it is impossible to understand the process of aging and the changes taking place during it, without the division into genders. From both a physical and psychological point of view, health determinants during aging are gender-specific. Researchers point to the need to conduct separate research for women and men, emphasizing the practical value of these analyses and their importance in the individualization of care [2]. The knowledge of the factors determining the quality of life of seniors, whose knowledge will facilitate the optimization of educational and care activities for this group, is particularly important in the face of the upcoming demographic changes.

The objective of the study was to assess the quality of life and its determinants in a group of women above the age of 65 (including age groups), who used different forms of senior education.

The following study questions were made:

1. In what way does the level of quality of life differ in relation to three age groups and the undertaken learning activity by the seniors?
2. In what way do the age and material status determine the quality of life of the studied women from distinct age groups?

Hypotheses:

1. Seniors using organized forms of education exhibit higher level of the quality of life.
2. Seniors belonging to the youngest age group exhibit the highest level of quality of life.
3. Good material status has a positive impact on the quality of life of the surveyed women.

### **Forms of senior education participated by the surveyed women**

At the Tarnów UTA, lectures and seminars take place once a week, and on the remaining working days seniors can participate in workshops of their thematic groups of interest. The following groups function at the UTA: dancing group, sports group, singing group, theater group, arts group and language group. The workshops do not overlap, thus everyone can participate in numerous groups (which is used by a considerable percentage of the seniors). The topics of the lectures and seminars is highly variable, including issues concerning i.a health and disease prevention, as well as history, literature, music, psychology, as well as engineering and architecture. One-or several-day long trips within the country are organized every month, however, participation in them depends on the financial status of the seniors, as they are not funded. At least once a month, visits at the museum or walking tours around the area are organized. It should added that a voluntary service is in operation at the UTA, as part of which active seniors can help those seniors, who are dependent and require support.

Within Senior Clubs, tasks in the field of activation, promotion of access to culture, education and social integration. The Club's objective is to promote active lifestyle, supporting local societies through social integration, improvement of the quality of life through access to education, disease prevention, recreation and culture, promotion of creativity, alleviation of the perception of loneliness, uselessness. Periodic meetings and workshops are organized devoted to different fields of knowledge, including joint visits at the theater, cinema, concerts, spectacles and exhibitions. Classes at the Senior Clubs take place 4 times per week. Seniors can participate in i.a. computer and language classes, pilates and fitness exercises, dancing classes, decoupage, bridge, rehabilitation camps and at the swimming pool.

### **Material and methods**

The study was conducted among women living in Tarnów province aged 65 years and over in a period from January 2016 to January 2017. Criteria for inclusion in the study: minimum age of 65 years, residence in Tarnów province (southern Poland), in the case of educationally active women-at least 90% presence during lectures and seminars organized by the UTA or Senior Clubs and participation in a minimum of 75% of meetings of at least one interest groups, e.g. dancing group, sports group, singing group, theater group, arts group, language group (2 years preceding the survey were taken into account), non-use of long-term care services in the place of residence, mental capacity enabling expression of an informed consent to conduct the survey interview, which was assessed on the basis of an abbreviated mental test score according to Hodgkinson (AMTS) [14]. Among educationally active women, no cases of using both forms of senior education were present (UTA and Senior Clubs). The exclusion criteria included: presence at lectures and seminars below 90% and participation in less than 75% of meetings of one of interest groups, cognitive dysfunctions impeding expression of an informed consent to participation in the survey (0–6 points in the AMTS test), use of long-term care services in the place of residence, age below 65, residence outside the Tarnów district.

The study was divided into two groups: The first group consisted of 205 women covered by various forms of education addressed to older people-students of UTAs (n=100; 48.8%) and participants of senior clubs (n=105; 51.2%). The selection for group I was not random, as it was dictated by the availability of female seniors meeting the inclusion criteria for the studied group among all UTA and Senior Clubs in Tarnów and in the Tarnów district. Group II consisted of 207 women remaining in the living environment, who did not benefit from any forms of education addressed to seniors. The Health Care Facilities from the Tarnów district were sorted alphabetically, assigning them with order numbers. The draw of 10 district outpatient clinics from the Tarnów area and health centers from the Tarnów district took place using a random number generator. The selection was performed using the systematic draw method with the use of intervals from alphabetical list of patients, in which the “sex: female” filter was applied. 16 educationally active seniors 34 not participating in senior education refused to participate in the study. The diagram of the questionnaire interview is presented in Figure 1.

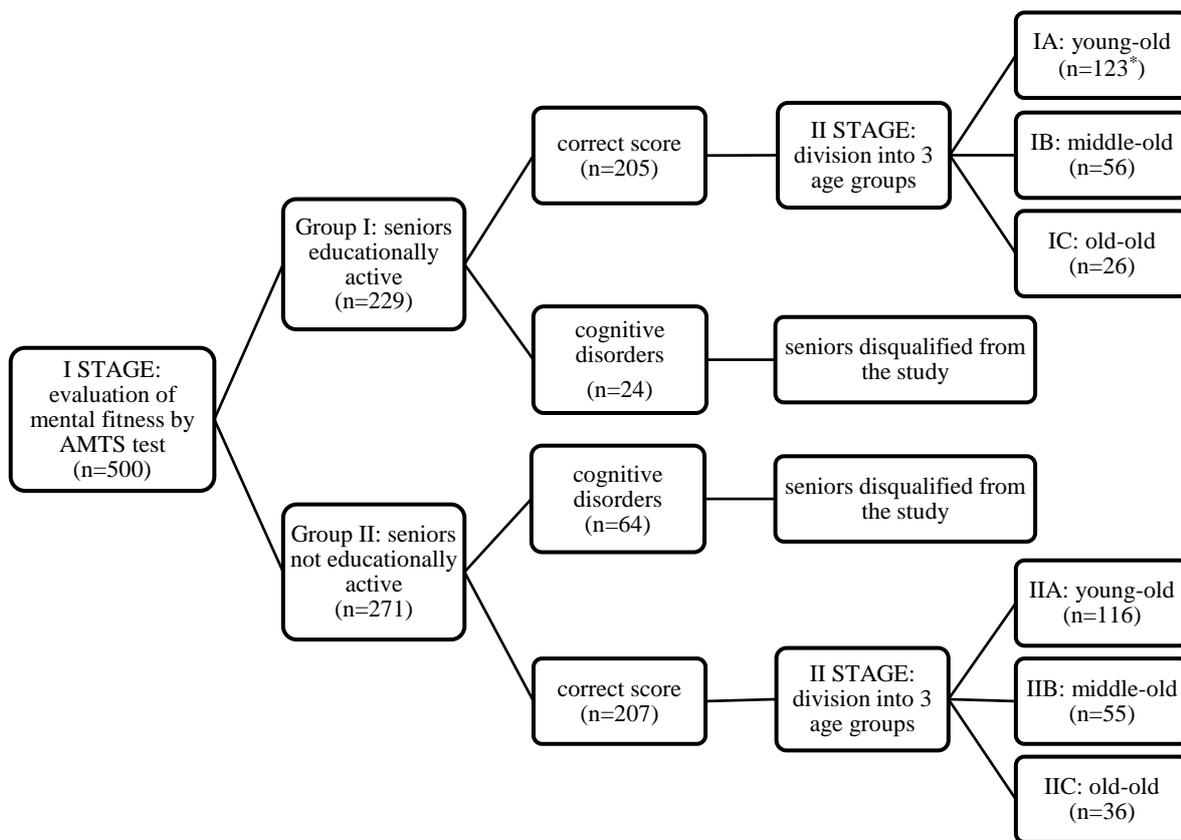


Figure 1. Scheme of the questionnaire interview.

\* the two seniors from IA group didn't remember the age of menopause. The remaining data were given correctly and the questionnaires were completed and therefore included in the overall analysis.

The study was based on the diagnostic survey method and the standardized interview technique. The following data collection tools were used:

- World Health Organization Quality of Life (WHOQoL-AGE) questionnaire in the Polish language version. Quality of life is expressed on a scale of 0–100. The results have a positive direction, so a higher number of points means a better quality of life for the respondents [15,16],

- Original interview questionnaire containing, inter alia, sociodemographic data (marital status, education, residence, material status).

The analysis was performed on the basis of Microsoft Excel package Office 2016 from Microsoft and program R (version 3.4.0.), the level of significance was adopted as  $p \leq 0.05$ . Before starting to compare the value of a quantitative variable in groups, the normality of the distribution of the tested variable in groups was checked (Shapiro-Wilk test). Comparison of the values of quantitative variables (dependent variable: quality of life according to WHOQoL-AGE) in two groups (independent variables: group I vs. group II; material status gd., vgd. vs. vbd., insuf., suf.) was performed using the Mann-Whitney test (the variable did not have a normal distribution). Comparison of qualitative variables in the groups was performed by means of chi-square test (with Yates correction for tables 2x2) or Fisher test where low expected numbers appeared in the tables (independent variables: marital status, education, residence, material status; dependent variables: group I vs. group II). The values of quantitative variables (dependent variable: quality of life WHOQoL-AGE) in three or more groups (independent variable: age group: I/IIA vs. I/IIB vs. I/IIC; material status in suf. vs. suf. vs. gd. vs. vgd.) were compared using the Kruskal-Wallis test (the variable did not have a normal distribution). When such a comparison showed statistically significant differences, a post hoc analysis was performed using Dunn's test.

The study was approved by the Bioethics Committee at the Regional Medical Chamber in Tarnów (Resolution No. 14/0177/2015).

## Results

The age of women in both groups was similar ( $72.49 \pm 7.01$  years vs.  $74.46 \pm 7.13$  years), ranging from 65 to 93 years. Taking into account marital status, statistically significant differences were found: respondents using education were more often married, and less frequently divorced and maiden compared to women inactive in education ( $p=0.023$ ). A higher level of education was found for women who continued to participate in educational activities with respect to women who were inactive in this field ( $p<0.001$ ). Respondents using education more often than women not participating in education lived alone ( $p=0.003$ ), with their parents ( $p=0.007$ ), son-in-law or daughter-in-law ( $p<0.001$ ), less frequently with their partner ( $p<0.001$ ) and children ( $p<0.001$ ). Significant differences were also found in terms of material status: educationally active women more often assessed their material situation as good or very good, and less frequently as sufficient, insufficient or very bad ( $p<0.001$ ). Detailed data characterizing selected sociodemographic features of the respondents are presented in Table 1.

Table 1. Characteristics of selected sociodemographic features in the studied groups of educationally active and inactive seniors

Variables	Group I N=205		Group II N=207		In total N=412		p
	n	%	n	%	n	%	
<b>Marital status</b>							
single	17	8.30	30	14.49	47	11.42	<b>0.023*</b>
married	113	55.12	87	42.03	200	48.54	
widow	59	28.78	64	30.92	123	29.85	
divorced	16	7.80	26	12.56	42	10.19	
<b>Education</b>							
primary	21	10.24	85	41.06	106	25.73	<b>&lt;0.001*</b>
vocational	41	20.00	39	18.84	80	19.42	
secondary	88	42.93	57	27.54	145	35.19	
higher	55	26.83	26	12.56	81	19.66	
<b>Living</b> (the values does not add up to 100% as this was a multiple choice question)							
alone	63	30.73	37	17.87	100	24.27	<b>0.003*</b>
with husband	100	48.78	90	43.48	190	46.12	0.327*
with partner	7	3.41	30	14.49	37	8.98	<b>&lt;0.001*</b>
with children	57	27.80	113	54.59	170	41.26	<b>&lt;0.001*</b>
with grandchildren	30	14.63	46	22.22	76	18.45	0.063*
with siblings	1	0.49	3	1.45	4	0.97	0.623 F
with parents	7	3.41	0	0.00	7	1.70	<b>0.007 F</b>
with son-in-law / daughter-in-law	14	6.83	0	0.00	14	3.40	<b>&lt;0.001*</b>
<b>Material situation</b>							
very bad	1	0.49	0	0.00%	1	0.24	<b>&lt;0.001 F</b>
insufficient	13	6.34	6	2.90%	19	4.61	
sufficient	79	38.54	119	57.49%	198	48.06	
good	96	46.83	59	28.50%	155	37.62	
very good	16	7.80	23	11.11%	39	9.47	

N–group size; n–sample size; \* chi-square test; F = Fisher’s exact test (low expected values in the table))

Analyzing the results of the WHOQoL-AGE scale, it was found that women using educational offers achieved significantly higher results in terms of global quality of life ( $62.85 \pm 14.38$  points vs.  $55.70 \pm 22.40$  points;  $p=0.018$ ) compared to women not participating in education (Tab. 2).

Table 2. Quality of life (WHOQoL-AGE) of educationally active and inactive seniors (except n and p, the values are expressed as points)

Group	n	$\bar{x}$	SD	Me.	Min.	Max.	Q1	Q3	p
I	205	62.85	14.38	63.34	13.34	98.08	54.45	73.44	<b>0.018*</b>
II	207	55.70	22.40	57.93	16.23	87.38	32.27	75.30	

n–sample size;  $\bar{x}$ –arithmetic mean; SD–standard deviation; Me.–median; Min.–minimum; Max.–maximum; Q1–first quartile; Q3–third quartile; p–significance level; \* Manna-Whitney test

Analyzes were carried out for each age category of both groups. Among the educationally active seniors, young-old and middle-old women achieved a higher overall quality of life ( $p=0.001$ ) compared the oldest age category. In the group of educationally inactive seniors, women aged 65–75 had significantly higher scores on the WHOQoL-AGE scale than the other study groups ( $p<0.001$ ; Tab. 3).

Table 3. Quality of life (WHOQoL-AGE) of educationally active and inactive seniors in particular age categories (except n and p, the values are expressed as points)

Group	n	$\bar{x}$	SD	Me.	Min.	Max.	Q1	Q3	p*
<b>Group I</b>									
IA	123	65.15	13.62	66.23	17.43	93.03	56.19	74.82	<b>0.001</b>
IB	56	62.27	14.40	60.76	32.69	98.08	53.46	71.00	<b>A,B</b>
IC	26	53.21	14.23	54.51	13.34	76.92	46.63	61.54	<b>&gt; C</b>
<b>Group II</b>									
IIA	116	60.81	22.09	70.91	16.23	87.38	50.00	77.52	<b>&lt;0.001</b>
IIB	55	52.68	22.95	55.65	18.03	87.38	28.49	71.33	<b>A &gt;</b>
IIC	36	43.84	17.10	42.43	18.75	78.12	27.79	56.01	<b>B, C</b>

n–sample size;  $\bar{x}$ –arithmetic mean; SD–standard deviation; Me.–median; Min.–minimum; Max.–maximum; Q1–first quartile; Q3–third quartile; p–significance level; \* Kruskal-Wallis test + post-hoc analysis (Dunn test)

Next, the relationship between material status and the quality of life of educationally active women was analyzed. Women from this group, who are in good and very good financial situation, had a higher quality of life than the less well off seniors ( $67.77\pm 13.43$  points vs.  $56.93\pm 13.27$  points;  $p<0.001$ ; Tab. 4).

Table 4. Material status and quality of life (WHOQoL-AGE) in the group of educationally active seniors (except n and p, the values are expressed as points)

Material status	n	$\bar{x}$	SD	Me.	Min.	Max.	Q1	Q3	p*
very bad, insufficient, sufficient,	93	56.93	13.27	57.57	17.43	93.03	50.72	62.26	<b>&lt;0.001</b>
good, very good	112	67.77	13.43	68.75	13.34	98.08	61.27	76.23	

n–sample size;  $\bar{x}$ –arithmetic mean; SD–standard deviation; Me.–median; Min.–minimum; Max.–maximum; Q1–first quartile; Q3–third quartile; p–significance level; \* Manna-Whitney test

Detailed analyses were made by age category. In the group of educationally active seniors, the quality of life depended on the financial situation of young-old women-it was higher in the case of respondents in good or very good situation ( $p<0.001$ ). Also in middle-old women, the quality of life of women in very good material situation was higher than in others ( $p=0.001$ ). The relationship between material status and quality of life was not confirmed in active women

in the oldest age group ( $p > 0.05$ ; Tab. 5). In the group of educationally inactive women, the relation between the quality of life and material status was not confirmed ( $p > 0.05$ ).

Table 5. Material status and quality of life (WHOQoL-AGE) in the group of educationally active seniors (except n and p, the values are expressed as points)

Age group	Material status	n	$\bar{x}$	SD	Me.	Min.	Max.	Q1	Q3	p
IA	insufficient, sufficient	51	58.68	14.01	58.29	17.43	93.03	52.04	66.83	<0.001*
	good, very good	72	69.74	11.36	71.94	36.42	88.94	63.88	76.65	
IB	insufficient (A)	7	59.67	13.18	59.01	44.71	79.45	50.30	66.95	<b>0.001**</b> <b>D &gt;</b> <b>ABC</b>
	sufficient (B)	21	56.08	11.80	57.33	32.69	78.85	52.28	59.74	
	good (C)	22	63.05	12.46	63.46	34.86	86.06	60.01	69.80	
	very good (D)	6	84.07	11.02	82.93	70.31	98.08	76.53	92.58	
IC	very bad, insufficient, sufficient	14	50.45	11.58	52.58	30.65	71.51	41.59	57.42	0.117*
	good	12	56.44	16.76	59.68	13.34	76.92	52.94	68.39	

n—sample size;  $\bar{x}$ —arithmetic mean; SD—standard deviation; Me.—median; Min.—minimum; Max.—maximum; Q1—first quartile; Q3—third quartile; p—significance level; \* Manna-Whitney test, \*\* Kruskal-Wallis test + post-hoc analysis (Dunn test)

## Discussion

The demographic structure indicates that women see a greater need for lifelong education [17]. According to the data available on the Electronic Platform for Adult Learning in Europe (EPALE), the participation in education and training in the 55–74 age group in Poland in 2016 amounted to 0.8%, which is significantly below the EU average (4.8% in 2016). It is also worth mentioning that women in this age group more often than men continue their education (2016-PL: 1.0% of women vs. 0.6% of men) [18]. Greater participation of women in senior education can be explained by the fact that they are more than men oriented towards creation of informal human relationships, as well as more adaptable, more positive towards change and novelty of all kinds. According to Reichstadt et al., the ability to adapt to life changes it is more important in the quality of life in old age than the lack physical of ailments [19].

Apart from the differences associated with sex, seniors do not constitute a uniform group, also considering their physical, mental and social condition. With relation to the above, efficient educational content should include all of these issues. Although the fields, in which activation of the elderly can be introduced are common for both sexes, the specific topics and method of conducting courses should be diversified and adapted to the needs of a specific group—women and men [7]. Among the classes associated with physical activity, women prefer: dancing, zumba, pilates, yoga, nordic walking and seated exercise (individuals with reduced mobility). In turn, the topics of lectures and health workshops directed at women typically concerns the prevention of age-related disorders, characteristic of this sex (breast and reproductive system cancers, osteoporosis, urinary incontinence). Here, it should be emphasized that nurses as professionals in the field of health care possess suitable qualifications and competences to become educators, for both individuals with health impairments, as well as to healthy persons at different age. By means of appropriate stimulation and strengthening the resources of an individual, a nurse educator may have a positive impact on the quality of life. At the Tarnów UTA and Senior Clubs from the Tarnów district, the majority of classes (both lectures and workshops) devoted to the field of health is conducted by specialized nursing personnel.

English Longitudinal Study of Aging (ELSA) realized in 2002–2015 in the UK showed that due to the more frequent death of a spouse/partner, women are more likely to feel lonely and depressed [20]. This may be one of the reasons for seeking support from educational organizations. What is more, nursing personnel after assessing the biopsychosocial situation of a patient, may and should inform the patient of the possibility and benefits of participating in educational classes dedicated to seniors, as is the case with establishing contacts with support groups for patients with various health problems.

Loss of loved ones and widowhood have an impact on loneliness, depression and physical deterioration. The death of a spouse is also responsible for the highest level of stress on the Social Readjustment Rating Scale (SRRS) it is the highest score (100 points) [21]. According to Czerniawska, the population of UTA listeners is most often fed by lonely people, and the profile of an active senior citizen is as follows: most often it is a woman, a widow, aged 60 to 80 years, with secondary education, quite physically fit [22]. The above characteristics only partially coincide with the data obtained from the analysis of our study. Given the marital status, seniors in education were more likely to be married than inactive women, but for various reasons they were more likely to live alone. A higher level of education was found for active seniors compared to inactive women. In the group of women using forms of education, the subjects with secondary education dominated, in the group of women not using education—these with primary education. The relationship between the quality of life and education was confirmed in the COURAGE study—a lower level of education was associated with a worse quality of life compared to people with at least secondary education [23]. Similar results were confirmed among participants of American Health and Retirement Study (HRS), English (ELSA) [24], as well as older people in the Swiss community aged 65+ [25].

The present study was focused on the assessment of the quality of life and its determinants in a group of women above the age of 65 (including age groups), who used different forms of senior education. For the analytical purpose, a study hypothesis was established: seniors using organized forms of education exhibit higher level of quality of life than educationally inactive women. By verifying the hypothesis on the basis of own research using the WHOQoL-AGE scale confirmed that women taking advantage of educational offers achieved significantly higher results in terms of global quality of life compared to women in the group not participating in formalized senior education meetings. In both groups, the global quality of life was classified as an average.

The positive impact of education on the quality of life of seniors is demonstrated by both global and national reports. Miller et al. conducted research on 115 residents of care homes in Maryland. The results showed that a 6-week memory exercise program, in addition to its beneficial effects on verbal learning, also contributed to an increase in memory self-esteem, which in turn is an important factor in a positive perception of life in old age [26]. Koziel and Trafialek analyzed the relationship between the quality of life and education at the Universities of the Third Age. The research included 120 students of UTA and 65 people who did not undertake this form of activity. The research tool was the Polish version of the WHOQoL-100 questionnaire. UTA students evaluated their general quality of life, similarly to their peers not undertaking educational activity [27]. However, these authors have not made gender-specific analyses. COURAGE (Collaborative Research on Aging in Europe) conducted in 2011–2012 on a sample of 5639 adults from three countries (Finland, Poland and Spain) shows that a well-developed network of social contacts (examined by Social Networks Index scale, SNI) correlated significantly with higher quality of life results on the WHOQoL-AGE scale [23]. Similar conclusions were reached by Layte et al. when analyzing factors influencing the quality of life among Irish people aged 50+. They confirmed that participation in the social life has a strong impact on the quality of life of individuals [28]. A multi-center cross-sectional study FIBRA (Frailty in Brazilian Older People) including 2472 individuals aged 65 and over also

found that low levels of social involvement were associated with lower levels of life satisfaction( $p=0.005$ ) [29].

With regards to the next hypothesis, which was: seniors belonging to the youngest age group exhibit the highest level of quality of life, our analysis showed that the quality of life is related to the age of the respondents. Among the seniors participating in education, women in the youngest age groups achieved a higher overall quality of life compared to seniors in old-old age. In the group of educationally inactive seniors, women aged 65–75 years obtained significantly higher results in the assessment of the quality of life than the other respondents. The relationship between age and quality of life is controversial. In some studies, higher age is considered a predictor of lower quality of life [30,31], while other studies do not confirm this thesis [32,33].

Another study hypothesis was: good material status has positive impact on the quality of life of seniors. Based on our study, significant differences in material status between the group of educationally active and inactive seniors were found. Educationally active women more often assessed their material situation as good or very good, and less frequently as sufficient, insufficient or very bad. Educationally active women in good and very good financial situation had a higher quality of life than the less well off seniors. The quality of life depended on the financial situation of young-old and middle-old women (positive correlation). In the group of educationally inactive women, the relation between the quality of life and material status was not confirmed. There are studies available in the literature which show that people with low socio-economic status are doubly burdened-on the one hand, they are more often affected by health problems, and on the other hand, weaker health affects the quality of life [34]. In contrast, the ENABLE-AGE (Enabling Autonomy, Participation and Well-Being in Old Age) cross-sectional study of 288 Swedish and 260 Latvian seniors found that for single older women, a low standard of living is more of an obstacle than even a poor state of health, making it difficult to achieve life satisfaction [35].

## Conclusions

Seniors using organized forms of education achieved a higher quality of life. The quality of life of seniors was related to the age and material status of the respondents. Women in the youngest age group (both educationally active and inactive) achieved the highest quality of life. In addition, better material status was associated with a higher quality of life for women participating in senior education. Taking into account the positive impact on the quality of life, it is recommended to carry out activities promoting participation in various forms of senior education, especially in the two oldest age groups (old & oldest old). It is proposed to continue research on the quality of life of senior citizens by gender, and the results of these studies can be used by managers and decision-makers in the local health sector to develop health promotion strategies targeted at a specific group.

## References

1. Eurostat. Life expectancy at birth in the EU: men vs. women. July 2019. URL: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190725-1> [accessed on 21 October 2019].
2. Luo J, Hendryx M, Safford MM. Newly developed chronic conditions and changes in health-related quality of life in postmenopausal women. *J Am Geriatr Soc* 2015;63(11):2349–2357.doi: 10.1111/jgs.13796.

3. Ferrer A, Formiga F, Cunillera O, et al. Predicting factors of health-related quality of life in octogenarians: a 3-year follow-up longitudinal study. *Qual Life Res* 2015;24(11): 2701–2711.doi: 10.1007/s11136–015–1004–9.
4. Greene JG. Constructing a standard climacteric scale. *Maturitas* 1998;29(1):25–31.DOI: 10.1016/s0378–5122(98)00025–5.
5. Hahn EA, Cichy KE, Almeida DM, et al. Time Use and Well-being in Older Widows: Adaptation and Resilience. *J Women Aging* 2011;23(2):149–159. doi: 10.1080/08952841.2011.561139
6. European Commission. Tackling the gender pay gap in the European Union. Luxembourg: Publications Office of the European Union; 2014.
7. Escuder-Mollon P, Cabedo S (editors). Education and quality of life of senior citizens. Helsinki: Universitat Jaume I; 2014.
8. Cavan RS, Burgess EW, Havighurst RJ, et al. Personal adjustment in old age. Chicago: Science Research Associates; 1949.
9. Delors J, Al Mufti I, Amagi I, et al. Learning: The treasure within. Paris: UNESCO; 1996.
10. Schalock RL, Verdugo MA. Handbook on quality of life for human service practitioners. Washington, American Association on Mental Retardation; 2002.
11. Formosa M. Lifelong learning in later life: The universities of the third age. *Lifelong Learning Institute Review* 2010;5:1–12.
12. McClusky HY. Education: Background paper for 1971 White House conference on aging. Washington 1971.
13. Tkatch R, Musich S, MacLeod S, et al. A qualitative study to examine older adults' perceptions of health: Keys to aging successfully. *Geriatr Nurs* 2017;6:485–490. <https://doi.org/10.1016/j.gerinurse.2017.02.009>
14. Hodkinson HM. Evaluation of a mental test score for assessment of mental impairment in the elderly. *Age Ageing*1972;1(4):233–238. DOI: 10.1093/aging/1.4.233
15. Caballero FF, Miret M, Power M, et al. Validation of an instrument to evaluate quality of life in the aging population: WHOQOL-AGE. *Health Quality of Life Outcomes* 2013; 11: 177; doi: 10.1186/1477–7525–11–177.
16. Zawisza K, Gałaś A, Tobiasz-Adamczyk B. Validation of the Polish version of the WHOQOL-AGE scale in older population. *Gerontol Pol* 2016;24:7–16. [Article in Polish].
17. Williamson A. Gender issues in older adults' participation in learning: Viewpoints and experiences of learners in the University of the Third Age (U3A). *Educ Gerontol* 2000;26:49–66. <https://doi.org/10.1080/036012700267394>.
18. Dierich C. Learning in later life–teaching people 50+. A comparison of the situation in the UK, Poland and Germany. Accessed 6 May 2019 from <https://ec.europa.eu/epale/en/blog/learning-later-life-teaching-people-50-comparison-situation-uk-poland-and-germany+&cd=1&hl=pl&ct=clnk&gl=pl>

19. Reichstadt J, Sen Gupta G, Depp CA, et al. Older adults' perspectives on successful aging: qualitative interview. *Am J Geriatr Psychiatry* 2010;18(7):567–575.
20. Banks, J, Batty, GD, Nazroo, J, et al. The dynamics of aging. Evidence from the English Longitudinal Study of Aging 2002–15, Vol. 7. The Institute for Fiscal Studies, London 2016.
21. Holmes TH, Rahe RH. The Social Readjustment Rating Scale. *J Psychosom Res* 1967;11:213–218. [https://doi.org/10.1016/0022-3999\(67\)90010-4](https://doi.org/10.1016/0022-3999(67)90010-4).
22. Czerniawska O. The University of the Third Age, 30 years of its activity Changes, dilemmas and expectations in the post modern era. *Chowanna* 2009;2(33):97–113. [Article in Polish].
23. Raggi A, Corso B, Minicuci N, et al. Determinants of quality of life in aging populations: Results from a cross-sectional study in Finland, Poland and Spain. *PLoS ONE* 2016;11(7):e0159293. doi: 10.1371/journal.pone.0159293.
24. Jivraj S, Nazroo J. Determinants of socioeconomic inequalities in subjective well-being in later life: a cross-country comparison in England and the USA. *Qual Life Res* 2014;23(9):2545–2558. doi: 10.1007/s11136-014-0694-8.
25. Luthym C, Cedraschim C, Allazm AF, et al. Health status and quality of life: results from a national survey in a community-dwelling sample of elderly people. *Qual Life Res* 2015;24(7):1687–1696. doi: 10.1007/s11136-014-0894-2.
26. Miller KJ, Siddarth P, Gaines JM, et al.: The Memory Fitness Program: Cognitive Effects of a Healthy Aging Intervention. *Am J Geriatr Psychiatry* 2012;20(6):514–523. doi: 10.1097/JGP.0b013e318227f821.
27. Koziel D, Trafiałek E. Assessing the influence of the studying at the University of the Third Age on life satisfaction of elderly people. *Gerontol Pol* 2007;15(3):104–108. [Article in Polish].
28. Layte, R, Sexton, E, Savva, G. Quality of life in older age: evidence from an Irish cohort study. *J Am Geriatr Soc* 2013;61(Suppl. 2):S299–305. doi: 10.1111/jgs.12198.
29. Pinto JM, Neri AL. Factors associated with low life life satisfaction in community-dwelling elderly: FIBRA Study. *Cad Saude Publica* 2013;29(12):2447–2458.
30. Hunger M, Thorand B, Schunk M, et al. Multimorbidity and health-related quality of life in the older population: results from the German KORA-age study. *Health Qual Life Outcomes* 2011;9:53. doi: 10.1186/1477-7525-9-53
31. Parker L, Moran GM, Roberts LM, et al. The burden of common chronic disease on health-related quality of life in an elderly community dwelling population in the UK. *Fam Pract* 2014;31(5):557–563. doi: 10.1093/fampra/cmu035.
32. Garin N, Olaya B, Moneta MV, et al. Impact of multimorbidity on disability and quality of life in the Spanish older population. *PLoS One* 2014;9(11):e111498. doi: 10.1371/journal.pone.0111498 PMID: 25375890.
33. Low G, Molzahn AE, Schopflocher D. Attitudes to aging mediate the relationship between older peoples' subjective health and quality of life in 20 countries. *Health Qual Life Outcomes* 2013;11:146. doi: 10.1186/1477-7525-11-146.

34. Mielck A, Vogelmann M, Leidl R. Health-related quality of life and socioeconomic status: inequalities among adults with a chronic disease. *Health Qual Life Outcomes* 2014;12:58.doi: 10.1186/1477-7525-12-58.
35. Horstmann V, Haak M, Tomsone S, et al. Life satisfaction in older women in Latvia and Sweden—relations to standard of living, aspects of health and coping behavior. *J Cross Cult Gerontol* 2012;27(4):391–407.doi: 10.1007/s10823-012-9176-z.