Anthropological Review • Vol. 84(3), 275–287 (2021)

sciendo

ANTHROPOLOGICAL REVIEW
Available online at: https://doi.org/10.2478/anre-2021-0017

Subjective quality of life of Slovak men with physical disabilities: An age categories differences

Dagmar Nemček

Department of Sport Sciences in Educology and Humanities, Faculty of Physical Education and Sports, Comenius University in Bratislava, Slovakia

ABSTRACT: The objective of the study was to analyze and compare the subjective quality of life (S-QOL) of Slovak men with physical disabilities through satisfaction with the quality of life domains (QOLDs) and the overall quality of life (QOL) assessment. The sample comprised of men with physical disabilities (n = 132), divided into 4 age categories: 19–29 yrs. (n = 59); 30–44 yrs. (n = 26); 45–59 yrs. (n = 24) and over 60 yrs. (n = 23). The Subjective Quality of Life Analysis (S-QUA-L-A) and The World Health Organisation Quality of Life User Manual (WHOQOL User Manual) were used as primary research methods. The findings of this study confirm differences in S-QOL in one QOLD as well as in the overall QOL between two from four age categories of men with physical disabilities. The 19–29 yrs. old men were significantly more satisfied in their lives with the Physical health domains and declared significantly higher overall QOL compare to 45–59 yrs. men. There were no significant differences found in S-QOL between other pair comparisons of the age categories of men with physical disabilities. The highest satisfaction in all age categories of men was declared by the domains of Social relation and Physical health and the highest dissatisfaction by the Psychological health and Environment domains. It is necessary to continue this line of this research field with stress on exploring the ways of psychological health increase as an integral part of S-QOL in men with physical disabilities. Future research should focus on life indicators that saturate the Environment domain, which should be positively affected in mens' life.

KEY WORDS: domains, overall quality of life, satisfaction, dissatisfaction, physical disability, age category, men

Introduction

There are currently approximately 5.5 million citizens living in Slovakia (Worldometer, 2021). The number of people with disabilities is gradually increasing from year to year. A total of 336,609 people with disabilities, of which 56% were women and 44% men lived in Slovakia in December 2019. Compare the year 2018 that represented an increase of 7.896 people with disabilities (Ministry of La-

Original Research Article Received: February 28, 2021; Revised: June 30, 2021; Accepted: July 21, 2021
DOI: 10.2478/anre-2021-0017

bour, Social Affairs and Family of the SR, 2020). The number of people with disabilities is rising with increasing age. In 2018 lived in Slovakia 2.8% of people with disabilities in the age category 19–29 years (yrs.), 15.9% in the age category 30–44 yrs., 38.7% in the age category 45–59 yrs. and 42.6% of people with disabilities over 60 yrs. of age (Statistical Office of the SR, 2020). Physical disabilities affect most Slovak people in the age category 45–59 yrs. (Repková, Košelová, Ondrušová, 2016).

Disability term includes impairments, activity limitations and participation restrictions (WHO 2011). The term "disability" refers to the interaction between individuals with a health condition (e.g. cerebral palsy, Down syndrome, and depression) and personal and environmental factors (e.g. negative attitudes, inaccessible transportation and public buildings, and limited social supports) (WHO 2020). Disabled people experience various barriers due to restriction of participation and their lives are affected by poor health outcomes, low education, lack of social and economic participation, higher rates of poverty, and increased dependency (Kuvalekar et al., 2015). Individuals with disabilities have varied and dynamic feelings and thoughts about their lives which contribute to their quality of life (Martin et al. 2020). More recently, researchers in health, medicine, and psychology have assessed the quality of life subjectively by relying on peoples' perceptions. Such measures are often referred to as subjective quality of life (S-QOL) (Diener 2000) expressed by perceived satisfaction with life or with a particular subscale of life by a healthy population as well as by people with physical disabilities (Post 2014).

National S-QOL seems to be largely a function of the degree to which countries meet the basic needs of their citizen and allows them opportunities to pursue their goals (Diener and Suh 1997). Some studies were published to investigate the S-QOL of Slovak people with disabilities expressed by perceived satisfaction with life subscales. Deaf and hard of hearing people (Nemček and Mókušová 2020), as well as people with physical disabilities (Nemček 2016a), show the highest satisfaction in their lives with the domain of social relation. On the other side, both individuals with disabilities declare the highest dissatisfaction in their lives with psychological health and health in general (Nemček 2016b).

With increasing age, there is also an increase of non-communicable disease incidence, which directly affects the life quality of people with disabilities. Cancer, cardiovascular disease, chronic respiratory illness, and diabetes are responsible for seven out of 10 deaths among people aged 70 and older while causing suffering and disabilities for many more (PAHO 2021). Age is one of the significant predictors of S-QOL (Villas-Boas et al. 2019) and therefore it is needed to examine S-QOL across the lifespan of individuals with disabilities and find the differences between age categories. The objective of this study was to identify age categories differences in subjective quality of life in men with physical disabilities living in Slovakia through satisfaction with the quality of life domains and overall quality of life assessment.

Materials and methods

Participants and data collection

Men with physical disabilities (n=132) living in Slovakia categorized by four age categories were recruited for the study:

(1) early adulthood life period "young adults" – 19–29 years of age (n=59); (2) "the establishment life period" – 30–44 years of age (n=26); (3) middle adulthood life period "middle adults" – 45–59 years of age (n=24) and (4) late adulthood life period "old adults" – over 60 years of age (n=23). Men with physical disabilities meeting the following criteria were included: (1) male; (2) aged 19 years or more; (3) activity limitations – physical difficulties in executing activities; (4) consenting to be included in the survey. The exclusion criteria for all participants were additional disabilities (e.g. deafness or visual impairment) preventing response to the questionnaire. Men with physical disabilities were contacted through representatives of national organizations/associations all around Slovakia unifying people with special needs. Some questionnaires were sent electronically by representatives of the organizations and some were passed out at the different meetings organized by national organizations. Basic sociodemographic characteristics, assistive technology (AT) use, and sport participation (SP) of the sample are presented in Table 1. AT is an umbrella term covering the systems and services related to the delivery of assistive products and services. Assistive products maintain or improve an individual's functioning and independence, thereby promoting their well-being. (WHO 2021). Men of the present sample used for their daily mobility manual and electronic wheelchairs, other AT like prostheses, walkers, crutches or did not use any AT. All data were collected for the 2019 and 2020-years periods. The study was approved by the Ethics Com-

Table 1. Sociodemographic characteristics, mobility and sport participation

Sociodemographic factors and AT use	19–29 yrs. (n = 59)	30–44 yrs. (n = 26)	45–59 yrs. (n = 24)	60+ yrs. (n = 23)
			N (%)	
Education level				
Primary/secondary	23 (39.0)	2 (7.7)	3 (12.5)	5 (21.8)
Higher education	32 (54.2)	17 (65.4)	17 (70.8)	14 (60.9)
University	4 (6.8)	7 (26.9)	4 (16.7)	4 (17.3)
Employment status				
Employed	7 (11.9)	15 (57.7)	9 (37.5)	2 (8.7)
Unemployed	8 (13.5)	4 (15.4)	2 (8.3)	0 (0)
Student	40 (67.8)	0 (0)	0 (0)	0 (0)
(invalid) Pensioner	4 (6.8)	7 (26.9)	13 (54.2)	21 (91.3)
Marital status				
Single	58 (98.3)	17 (65.4)	3 (12.5)	2 (8.7)
Married	1 (1.7)	5 (19.2)	15 (62.5)	16 (69.6)
Divorced	0 (0)	2 (7.7)	6 (25.0)	1 (4.3)
Widow	0 (0)	2 (7.7)	0 (0)	4 (17.4)
AT use				
Wheelchair	23 (39.0)	14 (53.8)	9 (37.5)	7 (30.4)
Other AT	10 (16.9)	2 (7.7)	12 (50.0)	14 (60.9)
Without AT	26 (44.1)	10 (38.5)	3 (12.5)	2 (8.7)
SP				
With SP	40 (67.7)	13 (50.0)	11 (45.8)	7 (30.4)
Without SP	19 (32.3)	13 (50.0)	13 (54.2)	16 (69.6)

AT – assistive technology; SP – Sport participation.

mittee of the Faculty of Physical Education and Sports, Comenius University in Bratislava, Slovakia (ref. no. 10/2019).

The Subjective Quality of Life Analysis (S-QUA-L-A) and The World Health Organisation Quality of Life User Manual (WHOQOL User Manual)

S-QUA-L-A is a multidimensional instrument. This multidimensional self-assessment method was created by Mathieu Zannotti in 1992 (Zannotti and Pringuey 1992). This scale includes 22 indicators of life. It covers traditional areas (food, family relation, etc)., and more abstract aspects of life (politic, justice, freedom, truth, beauty and art, love). Participants were asked to evaluate their degree of satisfaction using the 5-point rating scale. Score 1 "very satisfied" (meant the highest satisfaction and at the same time, the highest level of S-QOL), score 2 "satisfied", score 3 "neither satisfied nor dissatisfied", score 4 "dissatisfied", and score 5 "very disappointed" (expressed the absolute insignificance of the particular indicator in life and at the same time, the lowest level of S-QOL). We unified all 22 S-QUA-L-A indicators into four quality of life domains (QOLDs) following WHOQOL User Manual (WHOQOL, 2012): Physical health/ Independence level (Physical health; included 6 S-QUA-L-A indicators: physical wellbeing, sleep, self-care, rest in leisure, work/study and food); Psychological health/ Spirituality (Psychological health; included 6 S-QUA-L-A indicators: psychological wellbeing, love, religion, justice, beauty/ art, and truth); Social Relationships (included 4 S-QUA-L-A indicators: family relations, relations with others, children and sexual life) and Environment (included 6 S-QUA-L-A indicators: home environment, political situation, leisure activities, safety, freedom, finances). The internal consistency (Cronbach's α) of the QOL domains using the S-QAU-L-A scale was 0.84. The item-total correlation ranged between 0.81 and 0.93, which indicated a strong-to-very strong correlation (Table 2). Overall QOL was calculated by summarizing the scores of all 22 QOL indicators. The lower mean point score meant higher satisfaction with QOLD as well as higher overall QOL. In this study, a Slovak version of the S-QUA-L-A was used (Nemček et al. 2011).

Table 2. Internal consistency of the QOL domains using S-QUA-L-A scale

QOL domains	Internal consistency (n = 132)		
	Mean score ±SD	Item-total correlation	Cronbach's α if the item is deleted
Physical health	2.34±0.61	0.73	0.78
Psychological health	2.69±0.54	0.71	0.80
Social relations	2.29±0.69	0.61	0.84
Environment	2.72±0.63	0.69	0.80

Data analyses

The program IBM SPSS Statistics version 23.0 was used for data processing. The data were described using absolute and relative frequencies, including the mean ($\bar{x}$) and standard deviation (±SD). The Kolmogorov-Smirnov test was used to evaluate data normality. The Non-parametric Kruskal Wallis test was used to assess differences in QOLDs and overall QOL within four independent groups of men with physical disabilities according to age categories. Mann-Whitney *U*-test

was used to assess differences in QOLDs and overall QOL between two age categories of men. Wilcoxon Signed Rank Test was used to assess the differences between QOLDs inside in four age categories of men. The significance level was set at $\alpha \leq 0.05$ (*) and $\alpha \leq 0.01$ (**). In the current study, only one measurement has been made and four main groups of men with physical disabilities according to different age categories formed the study.

Results

The highest number of all age categories of Slovak men with physical disabilities attended the higher education level (high schools/ vocational schools). The youngest age category still studied (67.8%), more than half number of 30–44 yrs. old men were employed (57.7%) and older age categories of men (over 45 yrs.) were pensioners or invalid pensioners. Two younger age categories of men were mostly single and two older age categories of men were mostly married. The youngest age category of men moved mostly without AT use (44.1%), 30–44 yrs. old men were mostly wheelchair users (53.8%) and two older age categories of men used most other types of AT except for wheelchair. The highest number of men who regularly participated in sport at least two times per week of 90 minutes duration fell into the youngest age category (67.7%) and on the other side, the highest number of men without sport participation (SP) were part of the oldest group of men with physical disabilities (69.6%) (Table 1).

Analysis of achieved mean point scores in QOLDs show in the group of the youngest age category of men the highest satisfaction with Physical health domain (2.20±0.51 points). The other three older age categories of men were equally the most satisfied with the Social relation's domain (Table 3). The application of the Wilcoxon Signed-Rank test revealed in all evaluated groups of men with different age categories the highest satisfaction with the domain of the Social relation together with Physical health when no significant differences were found between these two domains QOLDs (Table 4). Deeper analyses of satisfaction with indicators included into the most satisfying domains revealed the highest satisfaction with family relations, relation with other people (Social relation domain) and with food, rest in leisure and sleep (Physical health domain) in all age categories of men with physical disabilities.

On the other hand, the highest dissatisfaction declared by mean score was

Table 3. Differences in S-QOL among men according to an age category

QOL domains/ Overall QOL	Age categories (yrs.) /±SD (mean point score)				Kruskal Wallis test	
	19–29	30–44	45–59	60+	Chi-square	*p*
Physical health	2.20±0.51	2.32±0.52	2.61±0.74	2.41±0.71	7.55	0.052
Psychological health	2.63±0.47	2.64±0.56	2.88±0.61	2.67±0.58	3.85	0.278
Social relations	2.25±0.58	2.27±0.72	2.45±0.82	2.25±0.77	1.36	0.714
Environment	2.57±0.54	2.69±0.59	2.93±0.72	2.87±0.72	5.38	0.146
Overall QOL	2.45±0.41	2.52±0.49	2.76±0.61	2.60±0.55	5.31	0.151

The lower mean score indicates higher satisfaction with QOLD and higher Overall QOL level; Chi-Square – Kruskal Wallis Test statistics; *p* – statistical significance (*p*-values *≤.05, **≤.01); QOL – quality of life.

Table 4. Differences between QOLDs in evaluated age categories of men

Age category/QOLDs	Psychological health	Social relations	Environment
19–29 yrs.		Z/p	
Physical health	−5.262** 0.000	−0.621 0.535	−5.005** 0.000
Psychological health	1	−4.214** 0.000	−1.161 0.245
Social relations		1	−3.659** 0.000
30–44 yrs.			
Physical health	−2.794** 0.005	−0.342 0.733	−3.448** 0.001
Psychological health	1	−3.001** 0.003	−0.374 0.708
Social relations		1	−3.285** 0.001
45–59 yrs.			
Physical health	−2.618** 0.009	−1.244 0.213	−2.683** 0.007
Psychological health	1	−32.603** 0.009	−0.522 0.602
Social relations		1	−2.661** 0.008
60+ yrs.			
Physical health	−1.625 0.104	−1.062 0.288	−3.028** 0.002
Psychological health	1	−3.054** 0.002	−1.439 0.150
Social relations		1	−2.989** 0.003

Footnote: *Z* – Wilcoxon Signed-Ranks-Test statistics; *p* – statistical significance (*p*-values *≤.05, **≤.01); QOLDs – Quality of life domains.

shown with Psychological health in the youngest group of men (2.63±0.47 mean point score). Three older age categories of men declared the highest dissatisfaction with the Environment domain (Table 3). The application of the Wilcoxon Signed-Rank test revealed in all evaluated age categories equally the highest dissatisfaction with the Psychological health and Environment domains when no significant differences were found between these the most dissatisfying QOLDs (Table 4). Deeper analyses of the most dissatisfying domains revealed the highest dissatisfaction with justice, truth (Psychological health domain), and the political situation and finances (Environment domain) indicators in all age categories of men with physical disabilities.

No significant differences were found among four age categories of men in all evaluated QOLDs neither in the overall QOL by Kruskal Wallis test calculation (Table 3).

More accurate results by the application of pair Mann-Whitney U-test revealed significant differences in one domain's satisfaction as well as in the Overall QOL only between the youngest age category of men (19–29 yrs.) and 45–59 yrs. For a clearer interpretation, we present these results in Table 5. Concretely the 19–29 yrs. old men were

Table 5. Differences in S-QOL between two age categories of men

QOL domains/ Overall QOL	Age categories (yrs.) 19–29 versus 45–59 /±SD (mean point score)		Mann-Whitney U test	
			U	*p*
Physical health	2.20±0.51	2.61±0.74	444**	0.008
Psychological health	2.63±0.47	2.88±0.61	516	0.053
Social relations	2.25±0.58	2.45±0.82	597	0.263
Environment	2.57±0.54	2.93±0.72	524	0.063
Overall QOL	2.45±0.41	2.76±0.61	484*	0.024

Footnote: *U* – Mann-Whitney U-test statistics; *p* – statistical significance (*p*-values *≤.05, **≤.01); QOL – quality of life.

significantly more satisfied in their lives with the Physical health as well as declared significantly higher Overall S-QOL compare to 45–59 yrs. men. Deeper analyses of differences, revealed significantly higher satisfaction with rest in leisure and work/study indicators included in the Physical health domain and significantly higher satisfaction with truth indicator as a part of the Psychological health domain in the group of 19–29 yrs.-old-men compare 45–59 yrs.-old-men.

Discussion

Measuring the quality of life of adults with disabilities is multi-dimensional and must go beyond the health-related quality of life measurement tools (Davidson et al. 2017). The objective of this study was to identify age categories differences in subjective quality of life in men with physical disabilities living in Slovakia through satisfaction with the quality of life domains and overall quality of life assessment. The highest satisfaction by all evaluated groups of men was displayed in the domain of the Social relation together in the Physical health domain when no significant differences were found between these two the most satisfying QOLDs. The highest satisfaction was shown in family relations, relation with other people (indicators of the Social relation domain), and in food, rest in leisure, and sleep (indicators of the Physical health domain) in all age categories of men with physical disabilities. We believe that if a person with a physical disability thoroughly knows his or her health condition and has sufficient information about his or her disability and can thoroughly control his or her body, he/she evaluates his/her physical health as satisfactory to good. Independence from others and self-sufficiency play a very important role in the perception of good physical health in people with disabilities. We must also point out that the independence and self-sufficiency of people with various degrees of physical disability depend on the form of social assistance provided. We consider independence in a person's life rather as a psychological category, as a subjective reality, which reflects the reflection of a particular person on himself in the context and influence of the circumstances of his life.

It is scientifically proven that healthy people can acquire and maintain social relationships more easily than unhealthy people (Verbrugge 1983). A low level of social contact in people with physical disabilities is associated significantly with deterioration in psychosocial and emotional functioning in the presence of adverse life events (Patrick et al. 1986), that's why is very important to keep socializing these people. The results of Avlund et al. (2004) showed that high social participation is an important factor for maintaining functional ability among 75-year-old men, while social support was a risk factor for functional decline among the 80-year-old men in their study. The authors suggest that being "embedded" in a strong network of social relations protects disability by reducing the risk of developing disability (Avlund et al. 2004). S-QOL expressed by life satisfaction of persons with physical disabilities, concretely of individuals with spinal cord injury, in the investigation of Fuhrer et al. (1992), appears to be influenced, albeit indirectly, by selective aspects of their social role performance (handicap), but not by their degree of impairment or disability.

Surprisingly, men of all age categories of the present study declared equally

the highest satisfaction with the Physical health domain nearby the Social relation domain. This could be probably caused because 54% of men of the sample participated regularly in sports in their leisure, at least 2 times per week, and even 37% of them participated in an adaptive sport at the elite and competitive level. Participation in sport in individuals with physical disabilities has positively related to S-QOL and their athletic identity (Groff et al. 2009). Giacobbi et al. (2008) revealed that individuals who use wheelchairs perceived several psychological, social, and health benefits associated with physical activity involvement. Individuals with physical disabilities who participate in adaptive sports include a desire to improve social support, physical fitness, health, and fun (Diaz et al. 2019). These findings also confirmed the investigation of Nemček (2020) who found significantly higher satisfaction with the domain of the Social relation ($p=0.000$), the Psychological health domain ($p=0.019$ and with the Environment domain ($p=0.000$) in men with disabilities who regularly participating in sport compare inactive individuals with disabilities.

The results of the present study revealed the highest dissatisfaction in all evaluated age categories of men with physical disabilities with the Psychological health and Environment domains. For the most part, this result can be attributed to our respondents' loss of control over mental activities, lack of life meaningfulness, or spiritual outlook in life. The low level of psychological health could have been caused by the men of our group with increased feelings of hopelessness, which made it impossible not only to plan life but also to perform ordinary activities, hold the expected social roles and live fully, according to their ideas. People with disabilities who have a lower degree of social adjustment, tend to find the culprits in their life situation (especially from doctors or officials), are fixated on their health, do not have rich social relationships, and do not accept people without disabilities as their friends. They expect negative attitudes of these people towards them; they have low self-esteem and feelings of shame in contact with others. They have been found to have somatic symptoms, due to which they use more drugs than people with disabilities with a higher degree of adjustment and a higher reflected quality of life. According to scientific investigations, we agree that people with physical disabilities are at substantially elevated risk for anxiety, depressive symptoms, psychological distress (Turner and McLean 1989), posttraumatic stress disorder, hopelessness (Tough et al. 2017), and major depressive disorder that can be attributed to chronic stress tends to characterize the life circumstance and experience of individuals with physical disabilities (Turner and McLean 1989). In the research of Turner, Lloyd, and Taylor (2006) was observed a compelling relationship between physical disability and risk for the lifetime occurrence of psychiatric disorders where elevations in psychological risk were greater for young men with physical disabilities. Physical disability represents a dimension of stress that increases the risk for the occurrence of psychiatric disorders. Social relationships play an important role in psychological health and wellbeing in persons with physical disabilities (Tough et al. 2017).

Investigators examined age-related differences in subjective physical and psychological health in 7 172 Australians across adulthood (Morack et al. 2013). They found that perceptions of

physical health declined with increasing steepness in old age, whereas self-rated psychological health remained relatively stable across all ages. In the current study, an application of the Kruskal Wallis test revealed similar results, when no significant differences were found among four age categories of men with physical disabilities in the Psychological health domain. On the other side, the application of the pair Mann-Whitney U test, the results of the present study revealed significantly higher satisfaction with the Physical health domain in the 19–29 yrs. old men compared to 45–59 yrs. men. The group of 19–29 yrs.-old-men was significantly more satisfied with rest in leisure, work/study, and truth indicators compare to 45–59 yrs.-old-men. The results of the nationwide survey in South Korea demonstrated that job satisfaction, leisure satisfaction, and social relationships contributed significantly to the life satisfaction of people with physical disabilities (Kim et al. 2021). Job satisfaction and leisure satisfaction were positively correlated. Participants who were satisfied with job and leisure were 16.86 times more likely to be satisfied with their lives compared to those who were not satisfied with either their jobs or leisure activities. Participants satisfied with either their jobs or leisure activities were 4.49 times more likely to be satisfied with their lives compared to those not satisfied with either their jobs or leisure activities. The findings of the authors suggest that managing a healthy balance between work and leisure may are critical to enhancing S-QOL among the population with disabilities (Kim et al. 2021). The results of Nemček's (2020) study revealed significantly higher satisfaction with leisure activities (p=0.020) and work/study (p=0.000) indicators in men elite athletes compare to women. Significantly higher satisfaction with work/study was found in elite men athletes with physical disabilities compared to men non-athletes (p=0.018) and significantly higher satisfaction with leisure activities in elite men athletes compare recreational (p=0.001) and non-athletes (p=0.000) with physical disabilities (Nemček et al. 2020). Men, elite athletes with physical disabilities express significantly higher satisfaction with the Physical health domain compare to non-athletes (p=0.037) and significantly higher satisfaction with the Environment domain than recreational athletes (p=0.013) and non-athletes with physical disabilities (p=0.010) (Nemček et al. 2020).

Some studies show that demographic variables like gender or age do not account for a large proportion of the variance of the Overall S-QOL in people with physical disabilities (Bakula et al. 2011). Among life indicators, determining a high level of the overall QOL, earnings, employment, health, and social relationships, play a significant role (Sőrés and Pető 2015). The results of the present study did not reveal significant differences in overall QOL across adulthood in men with physical disabilities by Kruskal Wallis test calculation. Leutar, Štambuk, and Rusak (2007) state that the quality of life of older people with disabilities is worse than that of younger age people with disabilities. The results of the present study corresponding with these authors (Leutar et al. 2007) when the youngest age category of men with physical disabilities declared significantly higher overall QOL compare to 45–59 yrs.-old-men with physical disabilities (p=0.024). In the study of Ladecká, Nemček, and Harčaríková (2019), young

men with physical disabilities declared a significantly higher level of physical and psychological health compared to young women with physical disabilities. On the other side, greater satisfaction with participation in social roles and fewer obstacles in the physical environment were identified as the best predictors of better S-QOL in the 60+ age category of people with physical disabilities (Levasseur et al. 2008). Nowadays, because of the COVID-19 pandemic when is the significant mortality rate of male people in late adulthood, social activities are limited.

Study limitations

The limitations of the present study should be mentioned when evaluating our results. This study suffers from some limitations, which need to be addressed in subsequent research. For this study, only the male Slovak population with physical disabilities was selected. The sociodemographic data are not covering the information about the level of physical disability of Slovak men (lower/mild/heavy) nor conditions (congenital or acquired), other medical conditions (e.g. type of disability), or income, which should significantly affect the S-QOL. A small number of respondents is a certain limitation in the interpretation of the presented results. Self-reported may be subject to bias. The age category 60+ may be too wide of a range as life expectancy has become longer. Furthermore, the results in certain QOLDs may have been influenced by diverse age categories conditions, e.g. education level, employment status, and marital status, or even compensatory technology usage. Further research is needed to explore the S-QOL comparison between men with physical disabilities and without disabilities or hard of hearing / visually impaired men and also the inclusion of a control group should be considered in future studies.

Conclusion

The findings of this study confirm differences in S-QOL in one QOLD as well as in the overall QOL only between two from four age categories of Slovak men with physical disabilities. The 19–29 yrs. old men were significantly more satisfied in their lives with the Physical health domain and declared significantly higher the overall QOL compare to 45–59 yrs. men. The highest satisfaction in all evaluated age categories of men with physical disabilities was declared by the domains of Social relation and Physical health and the highest dissatisfaction by the Psychological health and Environment domains. However, the existing research related to age categories differences in S-QOL in people with various kinds of disabilities is scant. It is also necessary to continue this line of this research field with stress on exploring the ways of psychological health increase, as an integral part of S-QOL in men with physical disabilities. Future research should focus on life indicators that saturate the Environment domain, which should be positively affected in mens' life.

Acknowledgments

This scientific research was supported by the grant project of the Ministry of Education, Science, Research and Sport of the Slovak Republic VEGA No. 1/0409/19.

Conflict of interest

The authors declare that there is no conflict of interest.

Corresponding author

Dagmar Nemček, Nábr. Arm. Gen. Svobodu 9, 814 69 Bratislava, Slovakia
e-mail: dagmar.nemcek@uniba.sk

References

Avlund K, Lund R, Holstein BE, Due P. 2004. Social relations as determinant of onset of disability in aging. Arch Gerontol Geriatr 38:85–99.

Bakula MA, Kovačevič D, Sarilar M, Palijan Ž, Kovač M. 2011. Quality of life in people with physical disabilities. Coll Antropol 35:247–53.

Davidson G, Irvine R, Corman M, Kee F, Kelly B, Leavey G. et al. 2017. Measuring the quality of life of people with disabilities and their families: Scoping study final report. Belfast: Queen's University Belfast.

Diaz R, Miller E, Kraus E, Fredericson M. 2019. Impact of adaptive sports participation on quality of life. Sports Med and Arthrosc Rev 27: 73–82.

Diener E. 2000. Subjective well-being. Am Psychol 55:34–43.

Diener E, Suh E. 1997. Measuring quality of life: Economic, social, and subjective indicators. Soc Indic Res 40:189–216.

Fuhrer MJ, Rintala DH, Hart KA, Clearman R, Young ME. 1992. Relationship of life satisfaction to impairment, disability, and handicap among persons with spinal cord injury living in the community. Arch Phys Med Rehabil 73:552–7.

Giacobbi PR, Stancil M, Hardin B, Bryant L. 2008. Physical activity and quality of life experienced by highly active individuals with physical disabilities. Adapt Phys Activ Q 25:189–207.

Groff DG, Lundberg NR, Zabriskie RB. 2009. Influence of adapted sport on quality of life: Perception of athletes with cerebral palsy. Disabil Rehabil 31:318–26.

Kim M, Jasper AD, Lee J, Won H. 2021. Work, leisure and life satisfaction for employees with physical disabilities in South Korea. Appl Res Qual Life 1:1–19.

Kuvalekar K, Kamath R, Ashok L, Shetty B, Mayya s & Chandrasekaran V. 2015. Quality of life among persons with physical disabilities in Udupi Taluk: A cross-sectional study. J Family Med Prim Care 4:69–73.

Ladecká P, Nemček D, Harčaríková T. 2019. Subjective well-being of students attending the special vocational school for children with physical disabilities: Gender differences. Ad Alta 9: 427–31.

Leutar Z, Štambuk A, Rusak S. 2007. Social policy and quality of life of elderly persons with physical disability. Rev za Soc Politiku 14:327–46.

Levasseur M, Desrosiers J, St-Cyr Tribble D. 2008. Subjective quality-of-life predictors for older adults with physical disabilities. Am J Phys Med and Rehabil 87:830–41.

Martin J, Guerrero M, Snapp E. 2020. Disability and sport psychology. In: G Tenenbaum and RC Eklund, editors. Handbook of sport psychology. New York: John Wiley & Sons, Inc. 1152–68.

Ministry of Labour, Social Affairs and Family of the Slovak Republic, 2020. Report on the social situation of the population of the Slovak Republic in 2019. [pdf] Bratislava: Ministry of Labour, Social Affairs and Family of the Slovak Republic. Available at: https://www.employment.gov.sk/files/slovensky/ministerstvo/analyticke-centrum/2020/sprava_o_soc_situacii_obyvatelstva_sr_2019.pdf [Accessed 20 February 2021].

Morack J, Infurna FJ, Ram N, Gerstorf D. 2013. Trajectories and personality correlates of change in perception of physical and mental health across adulthood and old age. Int J Behav Dev 37: 475–84.

Nemček D. 2016a. Quality of life of people with disabilities: differences in satisfaction with indicators and domains between active and inactive individuals. Phys Activ Rev 4:62–71.

Nemček D. 2016b. Quality of life of people with disabilities from a sport participation point of view. Acta Facultatis Educationis Physicae Universitatis Comenianae 56:77–92.

Nemček D. 2020. Indicators and domains of the quality of life in active and inactive men with health impairments. 1st edition. Bratislava: Slovak Scientific Society for Physical Education and Sports.

Nemček D, Labudová J, Peráčková J, Bendíková E, Medeková H, Pavlíková A. et al. 2011. Quality of life of seniors and physical activity as part of it. 1st edition. Prešov: Michal Vaško Publishing.

Nemček D, Mókušová O. 2020. Position of sport in subjective quality of life of deaf people with different sport participation levels. Physical Culture and Sport. Studies and Research 87:1–8.

Nemček D, Wittmannová J, Javanainen-Levonen T, Lubkowska W. 2020. Subjective perception of the life quality among men with physical disabilities with different sport participation levels. Acta Facultatis Educationis Physicae Universitatis Comenianae 60:194–206.

Nemček J. 2020. Gender differences in subjective quality of life of elite and competitive sports game players. Acta Facultatis Educationis Physicae Universitatis Comenianae 60:105–16.

PAHO. 2021. Healthy aging and non-communicable diseases. Available at: https://www.paho.org/hq/index.php?option=com_content&view=article&id=9979:healthy-aging-non-communicable-diseases&Itemid=40721&lang=en

Patrick DL, Morgan M, Charlton JRH. 1986. Psychosocial support and change in the health status of physically disabled people. Soc Sci Med 22:1347–54.

Post MWM. 2014. Definition of quality of life: What has happened and how to move on. Top Spinal Cord Inj Rehabil 20:167–80.

Repková K, Kešelová D, Ondrušová D. 2016. Development of the social situation of people with disabilities and their families: Secondary research analysis. [pdf] Bratislava: Institute for Work and Family Research. Available at: https://www.employment.gov.sk/files/slovensky/rodina-socialna-pomoc/tazke-zdravotne-postihnutie/vyvoj_socialnej_situacie_osob_so_zp_ivpr_2016.pdf [Accessed 22 February 2021].

Sherrill C. 1997. Disability, identity, and involvement in sport and exercise. In: KR Fox, editor. The physical self: From motivation to wellbeing. 1st edition. Champagne, IL: Human Kinetics Press. 257–86.

Sőrés A, Pető K. 2015. Measuring of subjective quality of life. Procedia Econ Financ 32:809–16.

Statistical Office of the Slovak Republic. 2020. Selected indicators of the social situation of people with disabilities. [pdf] Bratislava: Statistical Office of the Slovak Republic. Available at: https://slovak.statistics.sk/wps/wcm/connect/22e52b51-b30c-4497-9ff0-588ac017f72d/Vybrane_indikatory_socialnej_situacie_osob_so_zdravotnym_postihnutim_2019.pdf?MOD=AJPERES&CVID=n0gdD9O&CVID=n0gdD9O [Accessed 22 February 2021].

Tough H, Siegrist J, Fekete CH. 2017. Social relationships, mental health and wellbeing in physical disability: A systematic review. BMC Public Health 17:414.

Turner RJ, Lloyd DA, Taylor J. 2006. Physical disability and mental health: An epidemiology of psychiatric and substance disorders. Rehabil Psychol 51:214–23.

Turner RJ, McLean PD. 1989. Physical disability and psychological distress. Rehabil Psychol 34:225–42.

Verbrugge LM. 1983. Multiple roles and physical health of women and men. J Health Soc Behav 24:16–30.

Villas-Boas S, Oliveira AL, Ramos N, Montero I. 2019. Predictors of quality of life in different age groups across adulthood. J Intergener Relatsh 17:42–57.

WHO. 2011. World Report on Disability. [pdf] Geneva: WHO Publishing Committee, The World Bank. Available at: https://www.who.int/disabilities/world_report/2011/report.pdf

WHO. 2020. Disability and Health. Available at: https://www.who.int/news-room/fact-sheets/detail/disability-and-health

WHO. 2021. Assistive Technology. Available at: https://www.who.int/news-room/fact-sheets/detail/assistive-technology

WHOQOL User Manual. 2012. Programme on Mental Health. [pdf] Geneva: World Health Organization. Available at: https://apps.who.int/iris/bitstream/handle/10665/77932/WHO_HIS_HSI_Rev.2012.03_eng.pdf?sequence=1&isAllowed=y [Accessed 22 February 2021].

Worldometer. 2021. Slovakia Population. United Nations data. Available at: https://www.worldometers.info/world-population/slovakia-population/

Zannotti M, Pringuey D. 1992. A method for quality of life assessment in psychiatry: The S-QUA-L-A (Subjective QUAlity of Life Analysis). Quality of Life Newsletter 4.