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QUALITY OF LIFE OF PERSONS WITH PHYSICAL AND SENSORY IMPAIRMENTS IN SERBIA

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SUMMARY

Quality of life, as an important component of psychological welfare, has a special importance for persons with disabilities. The aim of the study was to find socio-demographic variables that are influential in this construct and to establish differences between persons with different types of disabilities. The sample (N=929) consisted of persons with physical (N=351), hearing (N=337) or visual (N=241) disabilities from five cities in Serbia. The World Health Organization Quality of Life (WHOQOL) scale was administrated. Gender, marital status, age, education, incomes, job, and where and with whom participant lives, proved to be important factors for the quality of life of persons with disabilities. Better ratings of quality of life were expressed in younger and more educated persons with disabilities, in those who were married and unmarried compared to divorced and widows, in the employed and students compared to the unemployed and retired, in those living with parents, with a spouse or with a spouse and children compared to persons living just with children. Participants with physical disabilities attained significantly poorer scores on all factors of the WHOQOL scale compared to participants with hearing and visual disabilities. The results of the study suggest that persons with physical disabilities experience lower satisfaction in all domains of quality of life compared to persons with sensory disabilities; and that a socio-demographic status is important in sustaining their quality of life. In developing intervening programs for persons with disabilities, socio-demographic variables influencing the quality of life of these persons must be considered. Holistic care for these people should focus on social support.

Key words: quality of life, persons with physical disability, persons with hearing impairments, persons with visual impairments

INTRODUCTION

Quality of life represents a construct often used in the domain of rehabilitation. It can be treated as a process, referent point, aim or psychosocial adaptation to chronic illness or to disability [1]. The World Health Organization defines quality of life as the personal perception of one's own life position in the context of culture and in the value system of one's own goals and expectations [2]. Quality of life has a subjective and an objective aspect. The subjective aspect deals with perceiving and evaluating one's own welfare. The objective aspect is connected to these persons' and their families' micro-social circumstances, such as health, level of education, type, and condition of living, family status, employment status or financial situation. Dimensions of quality

of life are physical, related to physical capacities and health; psychological, related to the cognitive and emotional performance of a person; and social, related to social integration and to social roles taken on.

Bishop explains that disability is an important life event that produces massive changes in the life of individuals [1]. Disability can endanger social integration and self-esteem and can lead to the adoption of an inferior role. Disability may affect quality of life. So the need to ameliorate the quality of life of persons with a disability seems to be important. The same aspects of quality of life appear to be important for persons with and without disabilities [3]. But, according to study results, a lower level of quality of life was experienced by persons with a disability compared to persons without a disability [4]. It was also established that different disabilities have different impacts on the global quality of life, in particular, in areas of functioning [5].

Quantitative research among participants with a spinal cord injury showed positive correlations between quality of life and health, social support, social functioning, mobility, preferred living situation, adequate income, being married and employed, satisfaction with social relationships, community participation and satisfaction with occupational engagement. There have been inconclusive results concerning relationships between quality of life and age, length of time since injury and gender [6]. The quality of life of people with a disability depends on many factors, but the focus of the research concerns the influence of socio-demographic variables, the type, and severity of impairment, the length of time since the onset of disability and optimism [7].

A lower degree of physical and mental health, of social functioning and of satisfaction with the quality of life was established for persons with hearing impairments [8]. Young people with hearing impairments, compared to youngsters of typical development, were less satisfied with many aspects of life [9], and older ones suffered from bad moods, depression, social isolation, bad health and low quality of life [10]. It was established that older persons with hearing and visual impairments were more concerned about lowered independence, bad mood, and depression, and children and young people about functioning in school and in sports in their age group [11].

As there were not many studies examining differences in the quality of life between individuals with different types of disabilities, the first aim of the study was to explore difference between quality of life depending of type of disability. The second aim was to explore the interconnectedness of different areas of quality of life and to find socio-demographic variables that are influential in these constructs.

METHODS

Procedure

The scale was administrated by the fourth-semester students of the Faculty of Special Education and Rehabilitation at University of Belgrade, trained in conducting interviews and administrating the scales. Contact with participants was obtained through organizations of people with different types of disabilities, from five cities in Republic of Serbia (Belgrade, Niš, Kragujevac, Vranje, and Leskovac). Only the

participants who wanted to take part in the study were included. Informed consent was obtained from all individual participants included in the study. The assessment was done in a private room, 1.1, and lasted 20-30 minutes.

Sample

Participants were persons with any disorder of the musculoskeletal system (e.g., spinal cord injury, muscular dystrophy, multiple sclerosis, amputation, orthopedic cases, cerebral palsy) that may arise from various causes resulting in reduced mobility, and persons with hearing and visual impairments. The sample (N=929; M=51.1%, F=48.7%) consisted of persons with a physical disability (N=351), with a hearing impairment (N=337) and with a visual impairment (N=241). Participants had different ages, levels of education, employment conditions, and living arrangements (see Table 1).

Table 1 *The socio-demographic characteristics of the sample*

| | | | | | | | |
|-----------------------|--------------------------|---------------|---------------------|-------------------|-------|-----------|-------|
| Age | 18-25 | 26-45 | 46-65 | 66+ | | | |
| | 29.1% | 35.3% | 26.3% | 9.1% | | | |
| Education | Unfinished middle school | Middle school | High school | University degree | | | |
| | 6.1% | 19.1% | 59.1% | 15.6% | | | |
| | | | | | | | |
| Employment | Unemployed | Student | Retired | Employed | | | |
| | 34.3% | 14.8% | 23.6% | 27.1% | | | |
| Lives with: | Children | Spouse | Spouse and children | Parents | Alone | Relatives | Other |
| | 4.1% | 16.2% | 20.5% | 39.8% | 8.9% | 4.2% | 6.2% |
| Type of accommodation | Supported living | Institution | Other's apartment | Own apartment | | | |
| | 3.7% | 6.2% | 49.8% | 40.0% | | | |
| | | | | | | | |

The instrument

The World Health Organization Quality of Life – BREF scale (WHOQOL-BREF) was administrated in the study. This scale has been developed by the World Health Organization in June 1996. The WHOQOL-BREF is a five-point Likert-like scale, with a total of 26 questions. A higher score corresponds to a better quality of life. The scale consists of four domains: physical health, psychological, social relationships and environment. The Serbian version of the scale was used in the study. The Portuguese version of the scale established high internal consistency for all of the scale domains (Cronbach's α range 0.84-0.94), as well as test-retest reliability (r range 0.67-0.86) [12]. In this study the Cronbach's alpha was 0.87 for physical domain, 0.83 for physical health domain, 0.57 for social relationship domain and 0.73 for environment domain.

RESULTS

Difference between quality of life in relation to the type of impairments

As Kolmogorov-Smirnov test for normality was significant ($p < .00$), which indicates that data significantly deviate from a normal distribution, the Kruskal-Wallis H test was conducted to determine participant's perceptions of quality of life depending on the type of impairments.

Hence, our sample encompassed of people with hearing, visual and motor impairments, the Kruskal-Wallis H test was applied so the differences between their quality of life can be explored. The statistical significance was established within physical domain ($\chi^2(2)=161.835$, $p < .00$), psychological health domain ($\chi^2(2)=42.413$, $p < .00$), social relationship domain ($\chi^2(2)=29.395$, $p < .00$), and environment domain ($\chi^2(2)=23.601$, $p < .00$). Mann-Whitney test revealed differences between people with motor impairments on one hand, and people with visual and hearing impairments, on the other hand. Persons with motor impairments expressed less satisfaction with their physical health ($M=11.17$, $SD=3.06$) than persons with visual impairments ($U=23459$, $p < .00$; $M=13.6$, $SD=2.74$) and persons with hearing impairments ($U=28197.5$, $p < .00$; $M=14.09$, $SD=2.65$). Also, participants with motor impairments considered that quality of their psychological health is lower ($M=13.11$, $SD=3.07$) than persons with visual impairments ($U=30904.5$, $p < .00$; $M=14.6$, $SD=2.86$) and persons with hearing impairments ($U=45028.5$, $p < .00$; $M=14.38$, $SD=2.54$). The social relationships were weaker at persons with motor impairments ($M=13.87$, $SD=3.03$) comparing with the social relationships at persons with visual impairments ($U=31726$, $p < .00$; $M=15.13$, $SD=3$) and persons with hearing impairments ($U=49641.5$, $p < .00$; $M=14.68$, $SD=2.54$). Lastly, participants with motor impairments had lower scores at environment domain ($M=12.86$, $SD=2.3$) than participants who had visual impairments ($U=34588.5$, $p < .00$; $M=13.63$, $SD=2.37$) and participants who had hearing impairments ($U=47643.5$, $p < .00$; $M=13.66$, $SD=2.89$). The only difference between persons with visual and persons with hearing impairments was established within physical health domain. Participants who had hearing impairments were more satisfied with their physical health than participants with visual impairments ($U=36392.5$, $p < .05$).

Difference between quality of life in relation to the age of participants

A Kruskal-Wallis H test revealed statistically difference in perceptions of quality of life across all domains: physical health ($\chi^2(3)=64.123$, $p < .00$), psychological health ($\chi^2(3)=35.851$, $p < .00$), social relationships ($\chi^2(3)=43.485$, $p < .00$), and environment ($\chi^2(3)=15.694$, $p < .01$). Series of Mann-Whitney tests were performed to determine where differences exist between age's groups.

According to the age of the participants, younger participants (18-25; $M=13.84$, $SD=2.24$) were more satisfied in environment domain then group of participants aged from 26 to 45 years ($M=13.22$, $SD=2.25$) ($U=37040.5$, $p < .01$). Further, the younger participants (18-25) described their quality of life as more positive in all domains compared to the groups of participants, aged from 46-65. Detailed analysis showed that

younger participants expressed more positive quality of life in physical health domain ($U=24572.5$, $p<.00$; $M_{18-25}=13.52$, $SD=2.99$, $M_{46-65}=12.02$, $SD=3.19$), in psychological health domain ($U=27613.5$, $p<.01$; $M_{18-25}=14.35$, $SD=2.75$, $M_{46-65}=13.42$, $SD=3.17$), in social relationships domain ($U=28593$, $p<.01$; $M_{18-25}=14.81$, $SD=3.26$, $M_{46-65}=14.09$, $SD=2.88$), and in environment domain ($U=27025.5$, $p<.00$; $M_{46-65}=13.01$, $SD=2.45$). A similar distribution of the answers was displayed and among participants aged from 18 to 25 years and participants who were older than 66 years. Thus, the younger participants were more satisfied in physical domain ($U=6498.5$, $p<.00$; $M_{66+}=11.13$, $SD=2.97$), psychological health domain ($U=6728$, $p<.00$; $M_{66+}=12.7$, $SD=2.73$), and in social relationship domain ($U=7261$, $p<.00$; $M_{66+}=12.74$, $SD=3.02$).

The differences between satisfaction within physical domain ($U=30254.5$, $p<.00$), psychological health domain ($U=33173.5$, $p<.00$), and social relationship domain ($U=33339$, $p<.00$) were established between participants aged from 26 to 45 years and those aged from 46 to 65 years. Younger participants expressed more positive attitudes in all domains: physical health ($M_{26-45}=13.41$, $SD=2.93$), psychological health ($M_{26-45}=14.37$, $SD=2.71$), and social relationship ($M_{26-45}=14.98$, $SD=2.97$). The participants who had between 26 and 45 years reported greater fulfillment in physical domain ($U=7957.5$, $p<.00$), in psychological health domain ($U=9039.5$, $p<.00$), and in social relationship domain ($U=8200.5$, $p<.00$), than participants of 66 years and older. Finally, the participants aged from 46 to 65 were more contented in physical health domain ($U=8798$, $p<.05$), psychological health domain ($U=9026$, $p<.05$), and in social relationship domain ($U=7763$, $p<.00$) compared with the participants 66 years and older.

Difference between quality of life in relation to the gender of participants

There were no differences in reported quality of life between male and female participants.

Difference between quality of life in relation to the participant's education

A Kruskal-Wallis H test showed difference across all domains of WHOQOL: physical health ($\chi^2(3)=59.146$, $p<.00$), psychological health ($\chi^2(3)=57.851$, $p<.00$), social relationship ($\chi^2(3)=54.459$, $p<.00$), and environment ($\chi^2(3)=20.386$, $p<.00$) in relation to participant's education. The Mann-Whitney test revealed that participants who didn't finish middle school expressed a lower level of satisfaction in social relationship domain ($U=3434$, $p<.01$; $M=12.23$, $SD=2.94$) than participants who had finish middle school ($M=13.65$, $SD=2.99$). In addition, participants who didn't finish middle school reported less satisfaction in physical domain ($U=8164$, $p<.00$; $M=10.93$, $SD=2.92$), in psychological health domain ($U=9847.5$, $p<.00$; $M=12.49$, $SD=2.99$), social relationship domain ($U=7935$, $p<.00$), and in environment domain ($U=11729.5$, $p<.05$; $M=12.7$, $SD=2.67$), compared with the participants who finished high school ($M=13.16$, $SD=3.02$; $M=14.18$, $SD=2.79$; $M=14.76$, $SD=3.04$; and $M=13.43$, $SD=2.28$ retrospectively). Further, participants with unfinished middle school expressed a lower level of satisfaction across all domains compared with the participants who graduated from college. Hence,

they have lower scores in physical health domain ($U=1807.5$, $p<.00$), psychological health domain ($U=2062.5$, $p<.00$), social relationship domain ($U=1730$, $p<.00$), and in environment domain ($U=2703.5$, $p<.01$), compared with the graduated participants ($M=13.71$, $SD=2.89$; $M=14.95$, $SD=2.84$; $M=15.33$, $SD=3$; and $M=13.9$, $SD=2.26$, retrospectively). Comparison between participants with middle school education and participants with high school education revealed differences across all domains. Participants who had finished middle school reported lower gratification in physical health domain ($U=36519$, $p<.00$; $Mms=11.79$, $SD=3.25$), psychological health domain ($U=36156.5$, $p<.00$; $Mms=12.88$, $SD=2.83$), social relationship domain ($U=38836.5$, $p<.00$; $Mms=13.65$, $SD=2.99$), and environment domain ($U=42349$, $p<.01$; $Mms=12.85$, $SD=2.4$). The same distribution of the answers was obtained comparing the report of the participants with middle school education and graduated participants. Thus, the participants with lower educational level expressed less satisfaction in physical health domain ($U=8398.5$, $p<.00$), psychological health domain ($U=7733$, $p<.00$), social relationship domain ($U=8842$, $p<.00$), and in environment domain ($U=9756.5$, $p<.00$) compared with participant with college diploma.

Differences between participants with high school diploma and graduated participants were established in following domains: psychological health ($U=33497$, $p<.01$), social relationship ($U=35748$, $p<.05$), and environment ($U=35394$, $p<.05$), in that direction that lower educated participants expressed lower level of fulfillment in quality of life.

Difference between quality of life in relation to the employment status

According to employment status, significant differences were established across physical health domain ($\chi^2(3)=100.276$, $p<.00$), psychological health domain ($\chi^2(3)=70.055$, $p<.00$), social relationship domain ($\chi^2(3)=63.830$, $p<.00$), and environment domain ($\chi^2(3)=16.871$, $p<.00$). The Mann-Whitney test was conducted in order to examine the difference between groups with different employment status. Unemployed participants were less satisfied in physical health domain ($U=15368$, $p<.00$; $M=12.43$, $SD=3.08$), psychological health domain ($U=15053.5$, $p<.00$; $M=13.45$, $SD=2.81$), social relationship domain ($U=16319.5$, $p<.00$; $M=14.05$, $SD=2.98$), and environment domain ($U=16615$, $p<.00$; $M=13.1$, $SD=2.32$) than participants who attended school ($M=13.94$, $SD=2.98$; $M=14.87$, $SD=2.74$; $M=15.23$, $SD=3.22$ and $M=14.01$, $SD=2.28$, retrospectively). Further, the difference between unemployed participants and retired participants was revealed in physical health domain ($U=29169$, $p<.01$; $Mre=11.48$, $SD=3.32$), so retired participants expressed lower satisfaction in this domain. Unemployed participants expressed lower level of contentment than employed participants in physical health domains ($U=27362.5$, $p<.00$; $Mem=14.04$, $SD=2.42$), in psychological health domain ($U=27794.5$, $p<.00$; $Mem=14.92$, $SD=2.28$), in social relationship domain ($U=28949$, $p<.00$; $Mem=15.46$, $SD=2.72$), and in environment domain ($U=35488.5$, $p<.00$; $Mem=13.51$, $SD=2.09$).

Similar, the retired participants were less satisfied across physical health domain ($U=8715$, $p<.00$; $M=11.48$, $SD=3.32$), psychological health domain ($U=9993.5$, $p<.00$; $M=13.02$, $SD=3.28$), social relationship domain ($U=10326.5$, $p<.00$; $M=13.52$, $SD=3.13$),

and environment domain ($U=12199.5$, $p<.01$; $M=13.13$, $SD=2.62$), than participants who attended the school. Also, the retired participants expressed lower scores within physical health domain ($U=15063$, $p<.00$), psychological health domain ($U=18472.5$, $p<.00$) and social relationship domain ($U=17968$, $p<.00$) than employed participants. On the other hand, employed participants were less contented with their environment ($U=14997.5$, $p<.05$) than participants who attended the school.

Difference between quality of life in relation to the marital status

According to marital status, the Kruskal-Wallis H test revealed difference across physical health domain ($\chi^2(3)=47.689$, $p<.00$), psychological health domain ($\chi^2(3)=29.763$, $p<.00$), and social relationship domain ($\chi^2(3)=73.717$, $p<.00$). The Mann-Whitney test compared satisfaction of quality of life within each of domains in relation to the marital status. The unmarried participants considered that they have better physical health ($M=13.27$, $SD=2.94$) than married participants ($M=12.76$, $SD=3.19$) ($U=78571.5$, $p<.05$). In opposite, married participants felt that they have a better social relationship ($M=15.24$, $SD=2.74$) than unmarried participants ($M=14.37$, $SD=3.18$) ($U=73705$, $p<.00$). Participants who were divorced were less satisfied across physical health domains ($U=6617$, $p<.01$; $M=11.5$, $SD=3.29$), psychological health domain ($U=7487.5$, $p<.05$; $M=12.6$, $SD=3.86$), and social relationship domain ($U=6239$, $p<.00$; $M=12.42$, $SD=3.09$), compared with the unmarried participants ($M=13.27$, $M=14.04$, $SD=2.86$, $M=14.37$, retrospectively). Also, the participants who were divorced evaluated their physical health ($U=5267.5$, $p<.05$), psychological health ($U=5059$, $p<.05$), and social relationships ($U=3295.5$, $p<.00$) not as good, as married participants did ($M=12.76$, $M=14.25$, $SD=2.75$, $M=15.24$, retrospectively).

Similar, the widows/widowers experienced less satisfaction of their physical health ($U=4571.5$, $p<.00$; $M=10.05$, $SD=2.85$), psychological health ($U=6048.5$, $p<.00$; $M=11.86$, $SD=2.55$), and social relationship ($U=5222.5$, $p<.00$; $M=11.57$, $SD=2.38$), than unmarried participants. Finally, the widows/widowers were less happy with their physical ($U=3836$, $p<.00$) and psychological health ($U=3997$, $p<.00$), as with social relationships ($U=2362.5$, $p<.00$) compared with the married participants. The participants who are divorced were more satisfied with their physical health than widows/widowers ($U=597.5$, $p<.05$).

Difference between quality of life in relation to the family situation

The Kruskal-Wallis H test revealed difference across physical domain ($\chi^2(6)=35.467$, $p<.00$), psychological health domain ($\chi^2(6)=26.435$, $p<.00$), social relationship domain ($\chi^2(6)=72.609$, $p<.00$), and environment domain ($\chi^2(6)=17.086$, $p<.01$), between participants with different family living situation. Further, Mann-Whitney test showed that participants are less satisfied with physical health if they live with children ($M=10.38$, $SD=3.19$) than if they live with parents ($U=3636$, $p<.00$; $M=13.29$, $SD=2.97$), with spouse ($U=1853.5$, $p<.00$; $M=12.49$, $SD=3.05$), with spouse and children ($U=2101$, $p<.00$; $M=13$, $SD=3.2$), with others ($U=532$, $p<.00$; $M=13.3$, $SD=3.17$) or alone ($U=996.5$, $p<.00$; $M=12.73$, $SD=3.11$). Also, participants who lived with children expressed less

satisfaction with their psychological health ($M=12.14$, $SD=3.62$) than participants who lived with parents ($U=4892$, $p<.01$; $M=14.07$, $SD=2.73$), with spouse ($U=2066.5$, $p<.01$; $M=14.02$, $SD=2.91$), with spouse and children ($U=2363$, $p<.00$; $M=14.42$, $SD=2.64$), with others ($U=650$, $p<.01$; $M=14.37$, $SD=3.05$) or alone ($U=1300$, $p<.05$; $M=13.54$, $SD=3.18$). Further, participants who lived with children considered that their social relationships are poorer and weaker ($M=12.14$, $SD=2.93$) than participants who lived with parents ($U=4147.5$, $p<.00$; $M=14.52$, $SD=3.15$), with spouse ($U=1359.5$, $p<.00$; $M=15.05$, $SD=2.91$), with spouse and children ($U=1533.5$, $p<.00$; $M=15.39$, $SD=2.61$), with others ($U=707.5$, $p<.05$; $M=14.05$, $SD=3.71$) or alone ($U=1204$, $p<.05$; $M=13.58$, $SD=2.95$). Finally, participants who lived with children had lower scores at environment domain ($M=12.53$, $SD=3$), than participants who lived with parents ($U=5686$, $p<.05$; $M=13.62$, $SD=2.23$).

The social relationships are weaker for the participants who lived with others (that can be living in an institution, in a group home, etc.) than for participants who lived with spouse and children ($U=4030.5$, $p<.05$). On the other hand, participants who lived with others considered their environment as more rich and better than participants who lived alone ($U=1670$, $p<.05$).

The participants who lived with the relatives ($M=11.6$, $SD=3.04$) considered their physical health as lower quality than participants who lived with others ($U=689$, $p<.05$), with spouse and children ($U=2707.5$, $p<.05$), and with parents ($U=4753.5$, $p<.01$). Also, the participants who lived with the relatives ($M=12.32$, $SD=3.09$) were less satisfied with their psychological health than participants who lived with others ($U=601.5$, $p<.05$), who lived with spouse ($U=1993$, $p<.01$), with spouse and children ($U=2238$, $p<.00$), and with parents ($U=4726.5$, $p<.01$). The social relationships were less developed at participants who lived with relatives ($M=12.25$, $SD=2.63$) than participants who lived with others ($U=679.5$, $p<.05$), with spouse ($U=1229$, $p<.00$), with spouse and children ($U=1366$, $p<.00$), with parents ($U=3845.5$, $p<.00$), and then who lived alone ($U=1136.5$, $p<.05$). Satisfaction with the environment was lower of participants who lived with relatives ($M=12.58$, $SD=2.31$) than participants who lived with others ($U=710$, $p<.05$) and with parents ($U=5238$, $p<.05$).

Quality of physical health was evaluated as lowest at participants who lived with a spouse than who lived with parents ($U=23895.5$, $p<.05$). On the other hand, participants who lived with spouse expressed greater satisfaction with their social relationships and environment than participants who lived alone ($U=4637$, $p<.00$, $U=5513$, $p<.05$, retrospectively). More, participants who lived with spouse and children were more satisfied with their psychological health and environment than participants who lived alone ($U=7075$, $p<.05$, $U=6968.5$, $p<.05$, retrospectively). The social relationships were better for participants who lived with spouse and children than participants who lived with the parents ($U=29667$, $p<.01$), and who lived alone ($U=5386$, $p<.00$). The participants who lived alone were less satisfied with their social relationships and environment than participants who lived with the parents ($U=13038$, $p<.05$, $U=12345.5$, $p<.01$, retrospectively).

DISCUSSION

In the conducted study it was confirmed that socio-demographic variables play an important role in the experienced quality of life of the persons with disabilities. Also, type of disabilities has an influence on the evaluated quality of life.

Different types of disability have various impacts on the quality of life and on various aspects of functioning [5]. In this study persons with sensory disabilities are found to feel more satisfaction in various domains of life than persons with physical disability. In the study exploring experiences of the persons with physical disabilities [24], it was established that disability influenced mostly the psychological domain of quality of life, including negative feelings, body image, physical appearance, spirituality, and self-esteem. Comparing experiences of persons with different types of disability it was concluded that the most negative perception of quality of life had participants with physical disabilities, due to lowered possibility to decide and act independently [17]. In the same study, it was established that persons with hearing impairments had a more positive perception of the quality of life than persons with intellectual disability and with a physical disability. Such perception reflects stronger feelings of social integration and independence for people with hearing impairments. The finding that persons with spinal cord injury rated lower the quality of life compared to persons without disabilities [25] was explained by the lower level of social integration and by secondary consequences of injury, such as chronic pain and urinary infections. Persons with visual impairments reported the worse perception of all domains of quality of life compared to the general population, to the persons with hearing impairments and to those suffering from type 2 diabetes [14].

Compared to older participants (45+), younger participants (18-45) with sensory and physical disabilities seem to be more satisfied with quality of life across all domains, which can be attributed to stronger expectancies and stronger readiness of anticipating positive outcomes in future in younger age, as well as to often worse health status, lower functionality [13] and to restricted interpersonal communication in older age. In our study, it was established that the decline in positive thinking and positive experience of life begins after the age of 45.

The differences between genders were not confirmed in our study, which leaves an open question for future studies. The results from previous studies are not completely in agreement, so among persons with visual impairments, male participants reported better quality of life than female participants [14], while females with spinal cord injury reported slightly higher life satisfaction than males participants [15].

In the presented study, more educated participants reported the higher quality of life than less educated ones. Perhaps they have more efficient coping strategies, especially in the psychological domain, and in gaining benefits of social support as they are more familiar with their rights and opportunities. In Langelaan research more educated participants with visual impairments showed higher problem-solving capacity [14], which could contribute to higher satisfaction at educated participants, as they were able to gain more benefits for themselves.

Employed participants and students scored better in all life domains than unemployed and retired participants. The result is in the line with findings that

employed persons with spinal cord injury [16] and employed visually impaired persons [17] reported higher levels of quality of life than unemployed individuals with the same disabilities. Employment status appeared to be important for social identity and feeling of self-esteem of persons suffering from schizophrenia while unemployed felt isolated and marginalized [18]. Satisfaction with life situation in persons with physical disability is connected to the profession or important activities, to social integration, to a sense of life meaning [19], and to increased independence [20]. These studies confirm that engagement in purposeful activity supports satisfaction with various life domains. This finding is in the line with the results of our study, according to which difference between employed participants and students has been shown only within environment domain. This finding could be explained by more responsible and stressful work environment, in comparison with the school environment.

Married and unmarried participants are more satisfied with different life domains compared to divorced participants and widows. Married, in comparison to unmarried participants, have better interpersonal connections. Marital status seems to be connected to the social support. In a study of Schultz and Decker [21], it was established that adaptation of person to own disability depends on partner's support. So, the loss of marital social support in divorced and widows may lead to a lower rating of the quality of life and to less optimistic life standpoint. In the Kreuter et al. study [22] the half of the sample reported separation from a partner after the injury, which could lead to less satisfaction with overall quality of life.

Participants living with children were less satisfied with physical and psychological health, with social relationships, and with being supported compared to those living with parents, with a spouse or with spouse and children. Dissatisfaction with life could be a consequence of the burden of child-rearing which leaves a little free time for a single parent, especially for those with a disability. A single parent in these circumstances doesn't have enough time to take care of own health, psychological needs and the need for social relationships. In addition, persons with disabilities who live with parents probably have better care, and they are more satisfied with possibilities of maintaining their overall health, especially physical health.

CONCLUSION

Results showed that better ratings of quality of life express persons with sensory disabilities, younger and more educated persons with disability, those who are married and unmarried compared to divorced and widows, employed and students compared to unemployed and retired, those living with parents, with partner or with partner and children compared to persons living just with children. In developing intervening programs for persons with disabilities it must be considered social integration, possibilities of employment or engagement in meaningful occupational activity. Special attention must be attributed to persons with physical disability, who reported a lower level of satisfaction with the quality of life, as well as to older persons with disability, having in mind that in older age usually declines social support, health, and purposeful activities.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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