

Quality of life of people with disabilities: Differences in satisfaction with indicators and domains between active and inactive individuals

Authors' Contribution:

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B - Data Collection
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Dagmar Nemček

Comenius University, Faculty of Physical Education and Sports, Bratislava, Slovakia

Abstract

Quality of life (QoL) is strongly influenced by an individual's health. The lack of population studies measuring the QoL of people with physical disabilities (PD) and people who are deaf and hard of hearing (D/HH) encouraged us to consider conducting this research. The aim of this study was to compare the satisfaction with quality of life indicators (QoLI) and domains (QoLD) between people with PD and people who are D/HH. This study included 315 individuals with disabilities, concretely with PD and hearing impairments. Participants were divided into two groups based on participation in physical activities: active (people with PD, n=73; people who are D/HH, n=52) and inactive (people with PD, n=77; people who are D/HH, n=113). The second part of Subjective Quality of Life Analysis (S.QUA.L.A.) between active and inactive members with disabilities was used. The Pearson chi-square test was used to determine the differences in satisfaction with 23 QoLI and 5 QoLD (general health, physical health and level of independence, psychological health and spirituality, social relationships and environment) between the two groups (active and inactive) within each population with disabilities. We found significant differences between active and inactive people with PD only in 3 from 23 QoLI and only in one from 5 QoLD. On the other hand active people who are D/HH presented significant higher satisfaction with 11 QoLI and with 4 QoLD as well as significant higher level of overall QoL ($p<.05$) comparing inactive individuals with the same disability. This evaluation of the satisfaction with QoLI and QoLD by S.QUA.L.A. shows that it is a suitable tool to asses QoL in the population with different kinds of disabilities. The results of our study confirmed that regular participation in sport increases QoL, especially in people who are D/HH.

Keywords: people with physical disabilities, people who are deaf or hard of hearing, the Subjective Quality of Life Analysis, active and inactive individuals.

INTRODUCTION

The International Classification of Functioning, Disability and Health defines disability as an umbrella term for impairments, activity limitations and participation restrictions. Disability is 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). Over a billion people are estimated to live with some form of disability. This corresponds to about 15% of the world's population. Between 110 million (2.2%) and 190 million (3.8%) people 15 years and older have significant difficulties in functioning [1].

Quality of Life (QoL) is an individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment [2].

Participation in sports, whether competitive or non-competitive, is one way for people with disabilities to increase their QoL. Some studies have argued that people with physical disabilities [3,4] and people who are deaf or hard of hearing who participate in sports and recreational activities improve self-confidence, self-esteem, and quality of life, as well as performance of activities of daily living [5, 6]. Reviews of adults with various disabilities have described the physical, psychological, social, and economic benefits of participation in sports and recreational activities [7-14].

Many scientific papers suggest that participation in sports and recreational activities is beneficial to people with disabilities [15-17]. Tasiemski et al [18] performed a very large questionnaire-based study, including almost 1000 participants, in which about half were physically active or participated in organized sports. The participants were all wheelchair users. Those who participated in sports had a higher level of life satisfaction, along with a decreased depression and anxiety level. The overall conclusion was that the participants were satisfied with life in general, especially in social domains, but with the lowest satisfaction in sexual life and vocational situation. Another study [19] present, that people with spinal cord injury who participate actively in sports display increased community integration, life satisfaction, employment, and extraversion, as well as decreased levels of anxiety and depression.

Considering the previous research findings, the aim of our research was to compare satisfaction with QoL indicators (QoLI) and QoL domains (QoLD) between active (who participated in sport - competitive as well as non-competitive) and inactive people (who do not participate in any sport) within group of people with physical disabilities (PD) and people who are deaf and hard of hearing (D/HH). We hypothesized that satisfaction with more than half of QoLI and with all QoLD will be significantly higher in active people than in people who are not involved in any sports (inactive) within each assessed group of population with disabilities.

METHODS

Participants and procedure

Two groups of people with disabilities (n=315) were recruited for the study: people with physical disabilities (PD; n=150), people who are deaf or hard of hearing (D/HH; n=165). Both groups were divided into active participants who regularly participating in physical activity and sport at least two time per week and inactive who not participating in any sport in their

leisure time. Participants were contacted through representatives of national organisations and schools all around Slovakia unifying people with special needs. Some questionnaires were sent electronically by representatives of the organisations and some were passed out at the different meetings organised by national organisations. Pupils of special schools filled out the questionnaires during their classes with school principal permission. All data were collected during two years period (2013 – 2014). All participants with disabilities agreed participate in the study and gave their written informed consent.

The Subjective Quality of Life Analysis (S.QUA.L.A)

S.QUA.L.A. is a multidimensional instrument. This multidimensional self-assessment method was created by Mathieu Zannotti in 1992 [20]. This scale includes 22 items (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). We used second part of S.QUA.L.A. where for each indicator, participants were asked to evaluate their degree of satisfaction using the 5-point rating scale. Score 1 (high satisfaction) meant the highest satisfaction and in the same time the highest level and score 5 (total disappointment) expressed the absolute insignificance of the particular indicator in life. We consider rating 1 – 2 to be positive, 3 to be neutral and 4-5 to be negative. For this study we modified the S.QUA.L.A. questionnaire including one more indicator “sport participation” and we unified all 23 S.QUA.L.A. indicators into five domains following WHOQoL [21]: (1) General health; (2) Physical health and the Level of independence (PHLI); (3) Psychological health and Spirituality (PHS); (4) Social relationships (SR); (5) Environment (E). In this study a Slovak version of the S.QUA.L.A. was used [22].

Data analyses

Statistical analysis was performed using SPSS v. 15.0. Qualitative variables are presented as proportion and percentage. Quantitative variables are presented as mean. Pearson chi-square test was used to determine the differences in QoLI and QoLD between active and inactive within each population group with disabilities (people with PD and people who are D/HH). Student’s two-sample t test was used for comparing overall QoL between active and inactive people within each population group with disabilities (people with PD and people who are D/HH). In current study, only one measurement has been made and two main groups formed the study. The level of statistical significance was set at $p < .05$.

RESULTS

Participants

Group of people with PD (n=150) included individuals with following disabilities: 28.5% cerebral palsy, 28.2% amputees, 18.8% progressive muscular dystrophy, 17.9% spine cord injury (quadriplegia and paraplegia), 5.3% sclerosis multiplex and 1.3% myelomeningocele. Group of people who are D/HH (n=165) included 50.3% hard of hearing individuals (55.8% active and 47.8% inactive) and 49.7% deaf individuals (44.2% active and 52.2% inactive).

The highest number of inactive participants showing the group of people who are D/HH (68.5%) represented by women over the 30 years of age (56.6%). On the other hand, the highest number of active individuals are represented by people with PD (48.7%) involving men (58.9%) up to 29 years of age (56.2%). The highest number of participants from all evaluated group have high school education level and mostly of them are single, except inactive individuals who are D/HH. Individuals with PD including more students comparing people who are D/HH, those are mostly employed. Basic participant’s characteristics are presented in Table 1.

We found that active people with PD are the most satisfied in their life with hobbies in leisure (1.945 points) and food (1.986 points) and the most dissatisfied with politics (4.000 points) and justice (3.423 points) (Table 1). Inactive people with PD are the most satisfied in their life with home environment (1.948 points), food (1.974 points) and family relations (1.987 points) and the most dissatisfied with the same two QoLI like active people with PD (political situation with 3.618 points and justice with 3.416 points), but they are also very dissatisfied with sport participation in leisure time (3.041 points).

The significant differences in satisfaction between active and inactive people with PD we found only in three QoLI: sport participation ($p<.01$), hobbies in leisure ($p<.01$) and work/studies ($p<.01$). Significantly higher satisfaction with all three QoLI was presented by active participants with PD with particular QoLI. The mean scores show that active people with PD are more satisfied in their life with 15 from 23 QoLI than inactive people with PD. The differences in overall QoL wasn't significant between active and inactive individuals with PD, but overall mean score shows higher QoL level in active individuals with PD.

The WHOQoL only environment score was significantly higher in active people with PD than in inactive participants ($p<.05$), whereas general health, physical, psychological a social domains scores showed no significant difference between the two evaluated groups. Mean QoLD scores display higher satisfaction with GH, PHLI, SR and E in active participants with PD and only the score of psychological health and spirituality is higher in inactive people with PD (Table 3).

Active people who are D/HH are the most satisfied in their life with love (1.824 points), family relations and food (1.846 points), home environment (1.902 points) and sport in leisure (1.904 points). The highest dissatisfaction in their life they presented with political situation (3.0780 points) (Table 4). Also QoLI like sleep and sexual activity did not exceed 2 points of satisfaction, which means positive rating. Inactive people who are D/HH present the highest satisfaction with children (1.855 points), love (1.982 points) and family relations (1.991 points). On the other hand the highest dissatisfaction is presented with political situation (3.442 points), justice (3.116 points) and finances (3.063 points).

The significant differences in satisfaction between active and inactive people who are D/HH were found in ten QoLI: physical wellbeing ($p<.01$), home environment ($p<.01$), mobility in daily activities ($p<.01$), love ($p<.05$), participation in sport in leisure time ($p<.01$), work/studies ($p<.05$) justice, beauty and art ($p<.05$), finances ($p<.01$) and food ($p<.01$). Significantly higher satisfaction with all ten QoLI was presented by active participants who are D/HH. The mean scores show that active people who are D/HH are more satisfied in their life with 20 from 23 QoLI than inactive people who are D/HH. Comparison of overall QoL displays significantly higher level in active individuals who are D/HH ($p<.05$).

The WHOQoL general health ($p<.05$), physical ($p<.01$), psychological health ($p<.01$) and environment ($p<.01$) scores were significantly higher in group of active people who are D/HH, whereas social relations domain scores showed no significant difference between active and inactive people who are D/HH. Mean QoLD scores were either higher in all mentioned QoLD in group of actively living people who are D/HH than in the group of inactive people with the same disability (Table 5).

Table 1. Data of the 315 participants

Basic characteristics of participants		People with PD; n (%)		People who are D/HH; n (%)	
		active	inactive	active	inactive
		73 (48.7)	77 (51.3)	52 (31.5)	113 (68.5)
Gender	Men	43 (58.9)	33 (42.9)	36 (69.2)	49 (43.4)
	Women	30 (41.1)	44 (57.1)	16 (30.8)	64 (56.6)
Age	Range 15-29 yrs	41 (56.2)	34 (44.2)	21 (40.4)	30 (26.5)
	Range 30+ yrs	32 (43.8)	43 (55.8)	31 (59.6)	83 (73.5)
Education level	Primary	17 (23.3)	28 (36.4)	10 (19.2)	4 (3.5)
	High school	41 (56.2)	35 (45.5)	38 (71.2)	99 (87.7)
	University	15 (20.5)	14 (18.1)	4 (7.7)	10 (8.8)
Merital status	Single	51 (69.9)	47 (61.0)	27 (52.0)	44 (38.9)
	Married	16 (21.9)	19 (24.7)	23 (44.2)	58 (51.3)
	Divorced	5 (6.8)	6 (7.8)	2 (3.8)	9 (8.0)
	Widow	1 (1.4)	5 (6.5)	0 (0)	2 (1.8)
Employment status	Employed	16 (21.9)	17 (22.1)	27 (51.9)	68 (60.2)
	Unemployed	6 (8.2)	7 (9.1)	11 (21.2)	21 (18.6)
	Student	34 (46.6)	31 (40.2)	10 (19.2)	7 (6.2)
	Pensioner	17 (23.3)	22 (28.6)	4 (7.7)	17 (15.0)

S.QUA.L.A. and WHOQoL

Table 2. Differences in QoLI between active and inactive people with PD (n=150)

Indicators	Mean		χ^2	sign. level
	Active	Inactive		
Physical wellbeing	2.616	2.883	4.657	ns
Psychological wellbeing	2.110	2.333	3.224	ns
Home environment	2.041	1.948	1.738	ns
Sleep	2.205	2.233	1.008	ns
Family relations	2.042	1.987	2.414	ns
Social relations	2.027	2.052	1.548	ns
Children	2.038	2.226	1.111	ns
Mobility/Daily activities	2.239	2.289	1.749	ns
Love	2.444	2.413	1.126	ns
Sexual activity	2.758	2.826	4.988	ns
Political situation	4.000	3.618	8.930	ns
Religion/Spirituality	2.301	2.500	5.882	ns
Rest in leisure	2.167	2.325	2.961	ns
Hobbies in leisure	1.945	2.487	11.05	p<.05
Sport in leisure	2.342	3.041	19.89	p<.01
Safety	2.356	2.533	5.096	ns
Work/Education	2.426	2.597	9.869	p<.05
Justice	3.423	3.416	0.209	ns
Freedom	2.268	2.566	5.122	ns
Beauty and art	2.457	2.400	2.535	ns
Truth	2.732	2.844	2.833	ns
Finances	2.870	2.776	2.409	ns
Food	1.986	1.974	2.026	ns
t-test	2.426	2.533	0.832	ns

Possible indicator score range is 1-5; lower mean scores indicate higher satisfaction with QoLI

Table 3. Differences in QoLD between active and inactive people with PD (n=150)

Domains	Mean		χ^2	<i>p</i>	sign. level
	Active	Inactive			
GH	2.822	3.000	4.042	0.374	ns
PHLI	2.250	2.376	2.909	0.513	ns
PHS	2.893	2.865	4.132	0.388	ns
SR	2.216	2.272	6.257	0.181	ns
E	2.304	2.559	10.03	0.039	p<.05

Table 4. Differences in QoLI between active and inactive people who are D/HH (n=165)

Indicators	Mean		χ^2	sign. level
	Active	Inactive		
Physical wellbeing	2.154	2.464	11.47	p<.01
Psychological wellbeing	2.212	2.348	6.608	ns
Home environment	1.902	2.259	13.75	p<.01
Sleep	1.942	2.180	7.022	ns
Family relations	1.846	1.991	4.292	ns
Social relations	2.096	2.027	2.662	ns
Children	2.038	1.855	3.876	ns
Mobility/Daily activities	2.038	2.345	15.88	p<.01
Love	1.824	1.982	9.496	p<.05
Sexual activity	1.980	2.027	2.311	ns
Political situation	3.078	3.442	8.165	ns
Religion/Spirituality	2.580	2.718	5.166	ns
Rest in leisure	2.019	2.195	3.887	ns
Hobbies in leisure	2.000	2.214	4.531	ns
Sport in leisure	1.904	2.455	22.61	p<.01
Safety	2.327	2.577	5.906	ns
Work/Education	2.558	2.884	13.23	p<.05
Justice	2.731	3.116	15.17	p<.01
Freedom	2.327	2.429	3.984	ns
Beauty and art	2.288	2.509	10.76	p<.05
Truth	2.423	2.679	5.212	ns
Finances	2.500	3.063	19.16	p<.01
Food	1.846	2.330	16.99	p<.01
t-test	2.200	2.439	2.361	p<.05

Possible indicator score range is 1-5; lower mean scores indicate higher satisfaction with QoLI

Table 5. Differences in QoLD between active and inactive people who are D/HH (n=165)

Domains	Mean		χ^2	<i>p</i>	sign. level
	Active	Inactive			
GH	2.250	2.637	11.79	0.045	p<.05
PHLI	2.110	2.392	42.14	1.56e-8	p<.01
PHS	2.487	2.741	31.78	2.12e-6	p<.01
SR	1.990	1.975	8.909	0.063	ns
E	2.160	2.499	52.61	1.03e-10	p<.01

DISCUSSION

The current study present that there are no significant differences in most of the QoLI between active and inactive individuals with PD. Only three from 23 QoLI showing significantly higher satisfaction in active people with PD. Similar results are resented in evaluation of QoLD, when only one from five assessed domains is significantly higher in active people with PD. Even overall QoL doesn't displays significant differences between active and inactive individuals with PD, but we can say that active people with PD are generally more satisfied with their life and present higher QoL than inactive peers what is showed by mean score of each evaluated QoLI (15 from 23) as well as QoLD (4 from 5). Many other investigators found an association between sports participation and QoL in people with disabilities. Buffart et al [23] performed a study that included 51 persons, aged 16-25 years, with myelomeningocele and found an association between sports participation and social support, enjoyment of exercise, competence, self-perceived physical appearance, and global self-worth. Another questionnaire-based study with a total of 169 participants divided the subjects into 3 different groups based on their level of activity [24]. Sports participation appeared to decrease anxiety and depression, particularly in the group with the highest level of activity (ie, active more than 3 times per week), although no significant differences were found. This study provides an interesting baseline for the relevant frequency of activity for persons with spinal cord injury in order to maintain optimal psychological health. A pilot postal survey with 45 participants who had an spinal cord injury failed to find any significant correlations between participation in sports or leisure activities and the level of education or employment [25]. People with a spinal cord injury kept being active in sports or other physical activities primarily to maintain good physical condition and improve upper body strength. Based on the articles reviewed, it is apparent that organized sports can play an important role for people with physical disabilities. Therefore, it is essential to increase participation in sports, because such participation can empower people with physical disabilities to set and attain goals and reach a higher QoL on their own terms. This also motivates further studies of sports participation as a way to increase health, function, QoL, and community integration.

The current study further presents bigger number of significant differences in QoLI between active and inactive people who are D/HH like it was in previous comparison. Ten form 23 QoLI showing significantly higher satisfaction in active people who are D/HH comparing their inactive peers. Similar results are resented in evaluation of QoLD, when four from five assessed domains are significantly higher in active people who are D/HH as well as overall QoL is significantly higher in active people who are D/HH. Comparing the QoL between active and inactive people who are D/HH we can definitely say, that active participants are more satisfied with their life than inactive peers who are D/HH what is presented by QoLI, QoLD as well as overall QoL assessment. Health-related measures of quality of life based on physical, emotional, and psychological functioning have been reported for persons who are D/HH [26-29], but just few studies measured the QoL relating to sport participation in this target group of population. Nemček & Kručanica [6] assessed the QoL in 152 participants who are D/HH and found that people with hearing impairments involved in sport show significantly higher satisfaction with physical health and the level of independence, psychological health and spirituality and presented significantly higher satisfaction with general health comparing the individuals with hearing impairment who lead sedentary lifestyle. Nemček [5] found that, the individuals with hearing impairment are more satisfied with physical health and the level of independence than psychological health and spirituality. In other study, general life satisfaction in D/HH youth was found to be significantly lower in

the areas of self, family, friends, and living environment compared with controls that had normal hearing [30]. Kurková [31] points to positive emotional reactions of physical activities in leisure and physical education classes in students in schools for the deaf who showed the highest values among the three evaluated groups of students (students who are D/HH integrated in general schools and hearing classmates). It can become a tool to increase the popularity of physical and sport activities at the same time become a regular part of youth's leisure activities that can lead to increase their QoL through regular participation in sport in later life [32].

Finally we can say, that we didn't confirm the hypothesis, where we assumed that satisfaction with more than half of QoLI and with all QoLD will be significantly higher in active people than in inactive within each assessed group of population with disabilities. The significantly higher satisfaction with QoLI in both evaluated active participants (with PD and who are D/HH) didn't exceed amount of half neither satisfaction with all five QoLD were not presented in active people with PD and people who are D/HH.

CONCLUSION

Based on the aim of the current study, we found significantly higher satisfaction in active people with PD in only three from 23 QoLI and in one from five QoLD. Significantly higher satisfactions with 10 from 23 QoLI and with four from five QoLD were presented by active people who are D/HH. Generally we can say, that the evaluation of the satisfaction with QoLI and QoLD by S.QUA.L.A. shows that it is a suitable tool to assess QoL in the population with different kinds of disabilities. The results of our study, mainly the mean scores confirmed, that regular participation in sport increases QoL as well as satisfaction with life, especially in people who are D/HH.

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Address for correspondence:

Dagmar Nemček, Comenius University in Bratislava, Faculty of Physical Education and Sports Dep. of Sport Educology and Sport Humanities, Nábr. Arm. Gen. L. Svobodu 9 814 69 Bratislava, Slovakia
e-mail: dagmar.nemcek@uniba.sk

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