

**SELF EFFICACY, HEALTH RELATED QUALITY OF LIFE AND HEALTH PERCEPTION
IN OLDER ADULTS: CROSS SECTIONAL STUDY**
**SEBAÚČINNOSŤ/SELF-EFFICACY, SUBJEKTÍVNA PERCEPCIA ZDRAVIA A SO ZDRAVÍM
SÚVISIACA KVALITA ŽIVOTA U SENIOROV: PRIEREZOVÁ ŠTÚDIA**

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ABSTRACT

Introduction: Psychological factors, such as self-efficacy (SE), play significant role in the adjustment to chronic disease, determine use of medical services, health-promoting behaviour, and health-related quality of life (HRQOL) in older adults. There is currently limited evidence on self-efficacy and its correlates among older adults in Slovakia.

Aim: This study aimed to explore the relationships among sociodemographic variables, self-efficacy (SE), social arrangement, health perception and HRQOL in older adults.

Methods: A cross-sectional survey conducted in convenience sample of 292 community dwelling older adults and nursing home residents. Participants were contacted personally and surveyed by questionnaires (EQ-5D-5L and the General self-efficacy scale) between July 2021 and July 2022. Descriptive statistics and correlational analyses were conducted to examine the relationship between SE, demographic and health-related variables.

Results: The participants older than 75 years had general SE score significantly lower than younger older adults (26.6 ± 8.1 vs. 23.7 ± 6.3 ; $p < 0.001$). There was a significant difference between community dwelling older adults and nursing home residents (21.1 ± 5.7 vs. 27.2 ± 7.4 ; $p < 0.001$). Age, need for constant health, and social care, and various health related quality of life domains were shown as significant correlates of general SE.

Conclusion: Results of study among older adults in Slovakia sounds with results of previously published research. More attention should be paid for the limited self-efficacy of adults older than 75 years of age and nursing home residents. Awareness of positive associations between self-efficacy and perceived health related quality of life may help health professionals enhance both phenomena via effective interventions in older adults. Further research is recommended that focuses on the GSE of older adults and more health-related variables and outcomes.

Keywords: General self-efficacy. Health related quality of life. Community dwelling older adults. Nursing home residents.

ABSTRAKT

Východiská: Psychologické faktory, medzi ktoré patrí aj self-efficacy/sebaúčinnosť, zohrávajú významnú úlohu v adaptácii na chronické ochorenie, ovplyvňujú využívanie zdravotníckych služieb, správanie podporujúce zdravie a kvalitu života súvisiacu so zdravím (HRQOL) u starších dospelých. V súčasnosti existujú iba obmedzené dôkazy o problematike sebaúčinnosti a jej korelátoch medzi staršími dospelými na Slovensku.

Ciele: Cieľom tejto štúdie bolo analyzovať vzťahy medzi demografickými premennými, sebaúčinnosťou (SE), sociálnou situáciou, vnímaním zdravia a HRQOL starších dospelých.

Metódy: Prierezová štúdia bola realizovaná na vzorke 292 starších dospelých žijúcich v komunite a v sociálnych zariadeniach. Respondenti boli oslovení osobne a požiadaní o vyplnenie dotazníkov EQ-5D-5L a Všeobecnú škálu sebaúčinnosti (GSE) v období júl 2021 – júl 2022. Výsledky boli analyzované na báze deskriptívnej štatistiky a korelačnej analýzy.

Výsledky: Respondenti starší ako 75 rokov mali celkové skóre GSE signifikantne nižšie ako mladší starší dospelí ($26,6 \pm 8,1$ vs. $23,7 \pm 6,3$; $p < 0,001$). Bol zistený signifikantný rozdiel medzi staršími dospelými žijúcimi v komunite a obyvateľmi sociálnych zariadení ($21,1 \pm 5,7$ vs. $27,2 \pm 7,4$; $p < 0,001$). Vek, potreba permanentnej zdravotnej a sociálnej starostlivosti a domény kvality života súvisiace so zdravím sa ukázali ako významné koreláty všeobecnej SE.

Záver: Výsledky štúdie GSE starších dospelých na Slovensku sa zhodujú s výsledkami skôr publikovaných štúdií. Obmedzenej sebaúčinnosti starších dospelých vo veku viac ako 75 rokov a obyvateľov sociálnych zariadení by mala byť venovaná väčšia pozornosť. Potvrdenie pozitívnych súvislostí medzi sebaúčinnosťou (SE) a vnímanou kvalitou života súvisiacou so zdravím môže pomôcť zdravotníckym pracovníkom posilniť oba fenomény prostredníctvom účinných intervencií. Zároveň sa odporúča ďalší výskum zameraný na GSE (general selfefficacy) starších dospelých vo vzťahu k väčšiemu množstvu premených súvisiacich so zdravím.

Kľúčové slová: Všeobecná sebaúčinnosť. Kvalita života súvisiacia so zdravím. Starší dospelí žijúci v komunite. seniori v sociálnych zariadeniach.

INTRODUCTION

It is established that the world population continues to grow older rapidly. A World Health Organisation report on aging and health pointed out that the proportion of the world population over 60 years of age will nearly double from 12 % to 22 % until 2050 (WHO, 2015).

In the following 50 years Slovakia will transform from one of the youngest countries of the European Union into one of the oldest states (Šprocha et al., 2019). Subjectively perceived health in older adults is affected by multi-morbidity in chronic long-term conditions. As the percentage of older adults increases, demand grows for effective, accessible, preventive-care options as does the need to understand factors that promote mental and physical

health and quality of life in older populations. Psychological factors play significant role in the adjustment of older adults to chronic disease, determine survival, use of medical services, health-promoting behaviour, and health-related quality of life (HRQOL) in older individuals (Lee et al., 2020). Numerous studies have declared the importance of psychological variables in improving both quality of life, and objective health outcomes (Smith et al., 1999; Kostka et al., 2010; Panagiotti et al., 2018; Feng et al., 2020). Health literacy, self-efficacy, social support, and health-promoting behaviour are considered the key cognitive and psychological factors in older age group (Lee et al., 2020).

Self-efficacy (SE) refers to an individual's belief in his or her capacity to execute behaviours necessary to produce specific performance attainments (Bandura, 1997). SE plays a key role in the adjustment of older adults to chronic disease and indicates general adaptational outcomes (Barlow et al., 1996). Individuals with high, generalized self-efficacy are more likely to benefit from health education programs than those with low self-efficacy (Walker et al., 1992).

The ability of health care professionals to support healthy aging requires the identification of factors that influences life's quality more than life expectancy. It is, therefore, of importance that GSE should be considered and addressed by health care services that aim to promote wellbeing (Whitehall et al., 2021). Measuring of self-efficacy has been recommended as an approach to assess patients' self-management potential of chronic care management. It is also recognized that GSE may be altered by the receipt of health care services and the environment in which they are received (Ulrich et al., 2008; Whitehall, et al., 2020). A little attention has been paid to the difference in GSE between older adult populations receiving care in different health care settings in Slovakia, even the concept of self-efficacy is well reflected in nursing theory, education and health care provision in long-term ill patients (Gurková, 2017) and health individuals (Mazuchová et al., 2022). In recognition of this, we conducted a pilot study, which examines the relationship between self-efficacy and quality of life in community dwelling older adults and nursing home residents.

MATERIAL AND METHODS

Design

To test the hypotheses, a cross-sectional study was conducted to examine associations between the variables general SE and demographic variables as well as HRQOL and general SE among community dwelling older adults and nursing home residents. Empirical data were collected from the patients, including demographic information of the patients in addition to self-referenced measures (questionnaires). The participants were ambulant (with or without gait aid) older adults (65 + years) who were well-oriented in time, place, and person, recruited from a community (via senior centres) and nursing home residents across Slovakia. A convenient sample of 300 older individuals received questionnaires and final sample 292 (97.30 %) were valid, proceeded to statistical analyses.

Participation in the study was voluntary and required informed consent. Written consent was obtained from each of the participants after the aims of the study had been explained to them. The approval of the Ethics Committee of The Alexander Dubcek University in Trencin, has been obtained (Application No: 2/2021). Data collection was conducted by the authors of the study, or trained administrators (nursing students, nurses working in nursing homes) who were able to help with administration of self-reported measures in standardized manner. This research was conducted in accordance with the Declaration of Helsinki.

Questionnaires

The survey included the General self-efficacy scale (Schwartz, Jerusalem, 1997), the EuroQol 5 Dimension 5 Level (EQ-5D-5L), and demographics questions.

The General self-efficacy scale (GSE) is based on Bandura's theory of self-efficacy and reflecting the degree of overall self-confidence that individuals perceive when dealing with difficult situations (Bandura, 1977). It is a 10-item self-administered scale with a 4-point Likert scale response options. The sum of the responses to all the 10 items are obtained to yield the final composite score which ranges from 10 to 40 with higher scores indicating higher self-efficacy. Each item refers to successful coping and implies an internal-stable attribution of success. The scale has been found to have good reliability, with Cronbach's alpha values ranging from

$\alpha = 0.76 - 0.90$. It also demonstrated satisfactory criterion-related validity, as it showed a strong correlation with a multiple-item general self-efficacy scale. Additionally, the scale has shown validity evidence based on relationships with other constructs, such as positive correlations with life satisfaction and positive emotions, and negative correlations with negative emotions, task and perceived stress, and illness symptoms. The General Self-Efficacy Scale has been translated and validated in different international populations (e.g. Juarez et al. 2008; Löve et al., 2012) including clinical population e.g. with 2 diabetes (Bowen et al., 2015), post-stroke patients (Carlstedt et al., 2015).

The EQ-5D is a broadly used generic instrument of subjective health perception. In addition to a thermometer-like visual analogous scale (VAS) anchored by 0 (worst imaginable health) and 100 (best imaginable health), the EQ-5D's descriptive system comprises five dimensions with one item per dimension: Mobility, Self-care, usual activities, pain/discomfort (PD) and anxiety/depression (AD). Toll has excellent psychometric properties (Feng et al., 2021). Responses to these items can be counted up as level sum score or converted into a single measure of health utility using preference-based (typically country-specific) weights. Preference weights are derived from preference elicitation studies using hypothetical EQ-5D health profiles (Stolk et al., 2019), typically sampling a general population. Internal consistency is not a relevant psychometric property for the EQ-5D-5L since its index score is based on a completely different measurement framework. Test-retest results show potential problems with stability over time on an item level, but not at the index score level (Feng et al., 2021). The EQ-5D-5L is currently available for more than 150 languages, including Slovak language version. Unfortunately, Slovak national study with appropriate value set is still missing, the dimension/item scores, which range from 1 to 5 (a higher score indicates worse perceived health) were calculated in current study.

The general data questionnaire was designed by authors. In this questionnaire, the demographic data such as age, sex, social arrangement, and education were included.

Statistics

Descriptive statistics were used to report the sample characteristics, and GSE, EQ-5D-5L, EQ-

VAS scores. The empirical data were processed in the statistical programme STATISTICA. For statistical processing of the data, we used sums, average values (so-called average score, \bar{x}) and medians calculated based on the responses of participants. Non-parametric Mann-Whitney U-Test was used to examine the relationships between EQ-5D-5L scores and EQ-VAS, and the relationship between the presence/absence of individual conditions on the self-efficacy score. For verification of the association between the GSE and HRQOL we used the Spearman's correlation. Internal consistence of the scales was detected by Cronbach's α .

RESULTS

The total sample size was 292 older adults, with a larger proportion of respondents (209, 71.6 %) being female. The mean age of participants was 65.6 (SD 7.91). The sample consisted of younger seniors aged 65 – 75 years (52.4 %). More than half of the elderly were community dwelling (67.5 %) and the rest of the sample resided in nursing homes (32.5 %). The majority of participants were high school graduates (from 11 to 12 years of schooling) (97 %). The GSE score was 25.4 ± 7.16 points and 167 participants (54.2 %) scored under the median value (25.0). Further demographic and health related data can be found in Table 1.

The mean scores for the EQ-VAS 66.9 (SD 17.64). The results show that the medium correlation between GSE and Health-VAS, D1, D2 and D3 dominates for the entire set of individuals (Table 2). However, if we divide the sample according to social arrangement, the elderly who live in community dwelling show a weak correlation for all the monitored parameters (Table 3). Elderly residents who live in nursing homes show a strong correlation only for the relationship of GSE to anxiety / depression ($R = -0.47$). Other dimensions of HRQOL with GSE in nursing home residents are not statistically significant. From these findings, it follows that the correlation relationship in table 2 is formed by the synthesis of two mutually different sub samples, while the fact that the individual lives in the community or in a nursing home has a significant influence on the resulting correlation coefficient. Correlation coefficient in the individual areas of HRQOL (Health Related Quality of Life), namely mobility, pain and self-care are not statistically significant with the level of GSE in elderly residents in nursing homes. The differences and correlations among

Table 1 Participants sociodemographic characteristics, GSE and HRQOL (N = 292)

Variables	Groups			
	65 – 75 years		75 < years	
Age	153 / 52.4 %		139 / 47.6%	
Gender	Males		Females	
	83 / 28.4 %		209 / 71.6 %	
Residence	Community dwelling		Nursing home	
	197 / 67.5 %		95 / 32.5 %	
Variables / Parameters	\bar{x}	SD	X_m	Min – max
GSE	25.4	7.2	25	10 – 40
Self-rated health/VAS*	66.9	17.64	70	0 – 100
D1/Mobility	2.33	1.03	2	1 – 5
D2/Self-care	1.80	0.95	1.5	1 – 5
D3/Usual Activities	2.04	1.01	2	1 – 5
D4 Pain/discomfort	2.40	0.92	2	1 – 5
D5 anxiety/depression	1.62	0,82	1	1 – 5

Legend: *VAS scale – part of EQ-5D-5L; n – number; \bar{x} – Average; SD – Standard deviation; X_m – Median; Min-max – Range

Table 2 Differences and correlation of GSE and selected variables (N = 292)

Variables	GSE			p
	\bar{x}	SD	X_m	
Age				
65-75 years	26.6	8.1	27.0	<0,001*
75 < years	23.7	6.3	23.0	
Gender				
Males	26.4	8.1	28.0	0.087
Females	24.8	7,1	24.0	
Residence				
Community dwelling older adults	27.2	7.4	20,0	<0,001*
Nursing home residents	21.1	5.7	28,0	
EQ5D5L	R	CI -95%	CI +95%	p
Self-rated health/VAS*	0.37	0.26	0.46	<0,001*
EQ5D1/Mobility	-0.42	-0.51	-0.32	<0,001*
EQ5D2/Self-care	-0.44	-0.53	-0.33	<0,001*
EQ5D3/Usual activities	-0.40	-0.49	-0.29	<0,001*
EQ5D4/Pain/discomfort	-0.29	-0.40	-0.18	<0,001*
EQ5D5/Anxiety/depression	-0.35	-0.45	-0.24	<0,001*

Legend: n – number of participants; \bar{x} – Average; SD – Standard deviation; X_m – Median; R – Spearman's correlation coefficient, p – value of the testing criterion, p < 0,05*; CI – Confidence interval; **VAS scale – Visual analogous scale part of EQ5D5L

Table 3 General self-efficacy and HRQOL in nursing home residents and community dwelling older adults, N = 142

Correlations of GSE and	Social arrangement	R	CI -95 %	CI +95 %	p
Self-rated health (VAS*)	community	0.33	0.17	0.47	<0.001*
	NH	0.28	0.08	0.46	0.006*
EQ5D1/Mobility	community	-0.33	-0.47	-0.17	<0.001*
	NH	-0.08	-0.28	0.13	0.460
EQ5D2/Self-care	community	-0.31	-0.45	-0.15	<0.001*
	NH	-0.17	-0.37	0.03	0.091
EQ5D3/Usual activities	community	-0.25	-0.40	-0.09	0.003*
	NH	-0.28	-0.46	-0.07	0.007*
EQ5D4/Pain/discomfort	community	-0.32	-0.46	-0.16	<0.001*
	NH	-0.02	-0.23	0.18	0.811
EQ5D5/Anxiety/depression	community	-0.24	-0.40	-0.08	0.003*
	NH	-0.47	-0.62	-0.30	<0.001*

Legend: n – number; R – Spearman's coefficient; p value < 0.05*; **VAS scale – Visual analogous scale part of EQ5D5L

variables, GSE and HRQOL are comprehensively demonstrated in table 2.

DISCUSSION

Demographic characteristics and the General self-efficacy

The primary aim of the current study was to examine the associations among GSE, HRQOL and some other variables in older adults. Our results suggest that that age, social arrangement, self-rated health and all five dimensions of HRQOL were significantly associated with GSE. Median of GSE score in our sample was 25 of the scoring range (10 – 40), and 54,2 % of participant scored under the median, depicting a lower level of general self-efficacy in this age group. Our study also found that males had higher GSE than females, although it has not reached statistically significant level. In some counties, e.g. China, the difference in GSE among males and females are significant. As Wang et al. (2020) refer is a matter of different position of women in the society in the past. Concept of a man capable of providing for his family was widespread previously (and in some societies/cultures is more or less valid until now). We assume that such attributes of traditional roles rooted in the past could play a certain role in creation of the differences in the general SE in a gender context of elderly in Slovakia. Intergender differences can be also an effect of different experiences related to adverse health, ability to perform activities of daily living independently, social status (social isolation, widowhood) etc. which were not currently investigated, so the suggestion that may contribute to general SE is speculative. In the present study, participants' age had significant negative correlation with their general SE level. Thus, this may not be unexpected considering the adverse effect of ageing on the psychological, physical, and social health of older adults (Anand, 2014) which would understandably reduce GSE (Okoye et al., 2022). The earlier published work indicates that measures of self-efficacy show age differences. As Whitehall et al. (2020) stated, *the feeling of competence or self-efficacy is more robust between the ages of 25 and 65, because it is the period when individuals have higher optimal levels of activity, with improved performance and diversified social and professional roles. By contrast, from the age of 65 onwards people gradually withdraw*

from these roles and their associated activities, as well as self-efficacy gradually decline.

The impact of social arrangements on the General self-efficacy and The Health-related quality of life in older adults

It is well understood that general SE may be altered by the receipt of health care services and the environment in which they are received (Whitehall et al., 2021), very little research has investigated whether there is any effect of the health care setting on the general SE of older adults previously (Ulrich et al., 2008). Our findings shows that older adults residing in nursing homes demonstrated significantly lower GSE than community dwelling counterparts (27.2 ± 7.4 vs. 21.1 ± 5.7 , $p < 0,001$). Whitehall et al. (2020) published similar findings in a more recent systematic overview and meta-analysis, where seniors scored as follows: older adults receiving care provided by primary care providers had the greatest general SE score, followed by inpatients in a rehabilitation ward, then those attending education courses, then those attending an outpatient clinic, followed by residents of nursing homes, and lastly, those receiving acute medical inpatient care (27.05). Community dwelling participants, who are relatively active and healthy (or their diseases are well-compensated) reach higher average values of the general SE score than nursing home residents. Previous research has also found that within nursing homes are also other underlying factors which influence the general SE of their residents such as adaptation to facility, decision to enter, the quality of care, length of stay, and social support (Whitehall et al., 2021). Therefore, these conditions were not investigated actually, so the suggestion that may contribute to the general SE is speculative either.

The expected association between general SE and all dimensions of HRQOL including-self rated health were confirmed by correlational analysis in our sample. General SE was identified as an important and independent correlate of HRQOL in older adults (Kostka, Jachimowicz, 2010; Mudrak et al., 2016). This finding is in accordance with those of former studies, which indicated that greater self-efficacy was more strongly related to positive HRQOL of older adults (Lee et al., 2020; Mudrak et al., 2016; Yazdi-Ravandi et al., 2013) Our study specifically showed significant moderate association between general self-efficacy and each dimension of HRQOL in community dwelling older

adults, namely Mobility, Pain/discomfort, Usual activities of daily living, Self-care, and Anxiety/depression (mental health domain). It was not the same in the group of nursing home residents, which showed lower HRQOL than their community dwelling counterparts. Correlation coefficient in the individual areas of HRQOL (Health Related Quality of Life), namely mobility, pain and self-care were not statistically significant with the level of the general SE in elderly residents in nursing homes. However, a significant association between general SE and the psychological dimension of HRQOL in older adults was approved, even more strongly in a group of nursing home residents. We believe that deficits in these areas are compensated by healthcare and professional care and therefore they do not correlate with SE rates. The loss of autonomy, stay in an institution and the objective reduction of significant personal social contacts, or loneliness, manifest themselves more significantly at the level of experience, with a higher level of anxiety and depression (Czaja et al., 2021). Recent research (Peters et al., 2019) has elucidated the associations among self-efficacy and development of depressive symptoms, suggesting that it is likely to be affected by factors such as social isolation and feeling of loneliness in multimorbid older adults in institutional care, such as nursing homes.

As Peters et al. (2019) imply the intervention should not only focus on physical and mental health, but also on promoting self-efficacy and perceived social support, as well as addressing loneliness with psychoeducational interventions. Older individuals can increase/gain self-efficacy and sense of confidence by experiencing success with their ability to control, manage symptoms associated with chronic disease as well. Simultaneously, the better coping skills with a disease, the more enhancement of HRQOL, both physical and mental components (Roskoschinski et al., 2023). Forementioned study suggested that incorporating the concept of self-efficacy when instructing older adults about healthcare and management could help improve their chances of attaining a higher HRQOL perception.

Limitations

The participants were conveniently recruited, and this could have to some extent affected the generalizability of the present results. The participants were recruited irrespective of their comor-

bidity thereby making it difficult ascertaining the roles of comorbidities on the levels and interrelationships between the constructs. The cross-sectional nature of the study did not allow the establishment of direction of causality with findings. The results of presented study should be interpreted with caution, because statistics were focused on correlations only, so the other confounding factors were not controlled.

CONCLUSION

In conclusion, our study found that more than 54 % of participant scored under the median of GSE score, depicting a lower level of general self-efficacy in this age group. This may be a cause for concern considering the reported adverse effects of poor self-efficacy to health and well-being of elderly. Participants in our study also exhibited high level (33.1 ± 12.9) and prevalence of the FOF. The GSE of younger adults (65 – 75 years) was significantly higher than that of the older (75+). The results of this study also highlight the slight gender difference in GSE among older adults. The significant correlates of GSE in older adults were age, social status and health perceptions. These results also substantiate the hypothesized role of social support and general self-efficacy and underscore the need to consider ways of enhancing psychosocial care in nursing homes. Results of first pilot study of GSE among elderly in Slovakia sounds with results of previously published research. Further research is recommended that focuses on the GSE of older adults and more health-related variables and outcomes.

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