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Association between non-communicable diseases and satisfaction with healthcare and self-rated health – experiences from post-conflict communities

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SUMMARY

Introduction/Objective Estimating the prevalence of non-communicable diseases (NCD), multimorbidities, and their association with self-rated health as well as satisfaction with healthcare.

Methods This cross-sectional study was conducted among ethnic Serb communities at Kosovo and Metohija during 2015–2016. Data of socio-demographic and lifestyle characteristics, self-rated health status and satisfaction with healthcare was obtained through a survey which included 1067 adults, 535 of whom reported presence of NCD. Multinomial regression was performed to analysis factors associated with self-rated health and self-rated satisfaction with the healthcare.

Results Presence of one NCD was reported by 50.1% respondents, whereas 23.1% of the respondents reported multimorbidity. While self-reported NCD presence was negatively associated with self-rated health (p = 0.001–0.016), no association between NCDs and satisfaction with healthcare was observed (p = 0.178–0.974). Being single (p = 0.011–0.017), lower educational level (p = 0.031–0.047), regular breakfast (p = 0.032), frequent vegetable intake (p = 0.009–0.029), no alcohol use (p = 0.010), shorter waiting time (p = 0.001–0.004) and sufficient finance for dental care (p = 0.021) were factors statistically significantly correlated with greater satisfaction with the healthcare.

Conclusion Presence of NCD was negatively associated with self-rated health status, while shorter waiting time and adequate finances were associated with higher level of satisfaction with the healthcare. The results of our study could be of the importance for policy makers in creating the more effective healthcare service in unstable political and security situations.

Keywords: chronic diseases; health status; adult population

INTRODUCTION

In the last two decades, global burden of disease expressed as disability-adjusted life year has increased mainly due to non-communicable diseases (NCD) [1, 2]. Population ageing and unhealthy lifestyles are considered to be the main factors contributing to the NCD development [3]. In the primary healthcare setting, especially in high-income countries, presence of two or more chronic diseases (multimorbidity) is increasingly accepted as the norm rather than exception [4]. Presentation of NCD and multimorbidity is related with shorter life expectancy, compromised mental health, frequent hospitalization and overall deterioration in life quality, which places a significant burden on the healthcare system [5].

Reliable data on the NCD and multimorbidity frequency are necessary for optimal healthcare provision and resource management [6]. Owing to their nature, NCDs are often considered a significant predictor of self-rated health and satisfaction with health care [7, 8]. On the other hand, self-rated health status and satisfaction with health care are important indicators of the healthcare system quality and can guide healthcare policy [9].

Studies have shown that residing in post-conflict areas increases the NCD risk, leads to worsening of existing NCDs and consequently to an increase in disability and death [10, 11, 12]. Post-conflict countries usually go through a protracted transition process, which typically includes rapid urbanization, due to which social systems tend to deteriorate [10, 13]. In such a situation, long-term stress exposure leads to mental health problems, unhealthy habits impair physical health and all of that represent ideal conditions for increase in NCD prevalence in the future [10, 13]. Thus, the aims of our study were to assess the prevalence of NCDs and multimorbidities among the population residing on the Autonomous Province of Kosovo and Metohija (KM) and to determine their association with self-rated health and satisfaction with healthcare.

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METHODS

Study setting

This cross-sectional study focused on ethnic Serbian communities residing in KM. Data collection was conducted from October 2015 to January 2016. Approval for this study was obtained from the Ethics Committee of the Faculty of Medicine of the University of Priština temporarily settled in Kosovska Mitrovica (approval no. 67–11, issued on May 27, 2014).

Following the ethnic conflict in 1999, the Serbian KM province was segregated into a smaller predominantly Serbian territory north of the river Ibar (composed of four municipalities) and a much larger Albanian territory to the south. Ethnic Serbian population also resides in six isolated municipalities in the predominantly Albanian southern part of KM, which are (with certain restrictions) still subject to the Republic of Serbia (RS) governance [14]. Owing to these political conditions, many social systems and infrastructure services are compromised, including healthcare provision [15]. Given the limited presence of RS institutions on the KM, local population has not been included in population surveys conducted in the RS in the last 20 years [16, 17].

Study participants

Respondents of interest for this study were adults (aged 18 and over) residents of four KM municipalities, two of which (Kosovska Mitrovica and Zubin Potok) are located north of the river Ibar, while the remaining two (Gračanica and Štrpce) are in the southern part of KM.

Households were randomly selected for inclusion in the survey through stratification and two-phase sampling. Four of the ten municipalities with predominantly ethnic Serb population were designated as primary strata, whereby local communities served as sampling units in the first phase of the two-phase sampling process. From each stratum, 50% of the local communities were selected, by choosing all odd-numbered local communities from the randomly generated list. In the second phase, households served as sampling units, whereby the units of analysis were identified as study participants from the households.

Out of a total of 400 households, 365 agreed to participate in the study with response household rate of 91.25%. In the end, 1067 adults were interviewed.

Data collection instrument

Data required to meet the study objectives were collected via a purposefully-developed questionnaire designed in accordance with the European Health Interview Survey, Methodological Manual [18].

Socio-demographic variables included sex, age, residential status (North/South KM), educational level (≤ 8 years; 8–12; > 12 years), employment status (unemployed/employed) and marital status (married/single). Lifestyle variables included daily habits, such as regular breakfast consumption (daily/occasionally), fruit and vegetable intake (rarely or never/weekly/daily), substance abuse (yes/no), smoking (yes/no), alcohol consumption (yes/no), excessive drinking, i.e., consumption of more than six alcoholic beverages on a single occasion (never or rarely/monthly/weekly/daily). Physical activity (active/inactive) was defined as continuous moderate physical activity of at least 10-minute per day that results in increased respiration or elevated heart rate [18, 19].

Presence of 17 predefined NCDs in the preceding 12 months was self-reported by the participants. Based on the number of reported NCDs, the sample was segregated into three groups: no NCDs/one NCD/multimorbidity.

The Likert scale was used to estimate the self-rated health (good/very good/moderate/poor/very poor) and self-rated satisfaction (very satisfied/satisfied/neutral/unsatisfied/very unsatisfied). Further, respondents' self-rated health status was stratified into three categories for the purpose of the study analyses: good or very good/moderate/poor or very poor. Similarly, self-rated satisfaction with the healthcare was grouped under: very satisfied or satisfied/neutral/unsatisfied or very unsatisfied.

Unmet health care needs are defined as the difference between the health services that are considered necessary to deal appropriately with health problems and services that are actually received [20]. Unmet healthcare needs were classified in accordance with the factors that contribute to not receiving adequate health services (long waiting time, distance to the healthcare facility or transport issues, and inadequate finances for healthcare, dental care, mental care and medical prescription). Unmet health needs were assessed through closed-ended questions in which respondents have chosen between the offered alternatives (I did not need it/No/Yes).

Statistical analyses

Statistical analyses were conducted using SPSS statistical package for MS Windows ver. 17 (SPSS Inc., Chicago, IL, USA) [21], where $p < 0.05$ was considered as statistically significant. Descriptive sample statistics included measures of central tendency (mean), variance (standard deviation) and relative values (percentages). Differences between studied parameters were assessed via the Kruskal–Wallis test (KW χ^2).

Multinomial regression analysis was performed when analyzing factors associated with self-rated health and self-rated satisfaction with the healthcare, which were treated as dependent variables. When examining self-rated health status and healthcare system quality, "poor or very poor" and "unsatisfied or very unsatisfied," respectively, served as referent categories.

RESULTS

The study sample comprised of 1067 respondents aged 42.6 ± 16 years and 51.3% of them were female. In Table 1 are summarized participants' socio-demographic characteristics.

Hypertension (24.6%) was the most prevalent NCD in the study sample. The prevalence of other NCDs were: hyperlipidemia (10.3%), allergies (9.9%), lower spine deformities (8.1%), renal problems (5.9%), upper spine deformities (5.6%), diabetes (5.2%), depression (5%), angina pectoris (4.1%), arthrosis (3.7%), urinary incontinence (3.1%), chronic bronchitis (2.4%), asthma (1.9%), myocardial infarction (1.4%), cancer (1.3%), stroke (1%) and cirrhosis (0.5%). Moreover, relative to men, a statistically significantly higher percentage of women reported suffering from chronic bronchitis (p = 0.024), arthrosis (p = 0.001), skeletal deformities (p = 0.001) and depression (p = 0.002) (Data not shown).

One-half of our participants (50.1%) reported that they have one NCD, whereas multimorbidity was declared by 23.1% of the participants (Table 1). Greater multimorbidity frequency was observed among older individuals, women, residents of south municipalities, less educated and unemployed respondents, and those in a relationship. Individuals with multimorbidity more often declared that they did not practice regular physical activity, and were more frequently to be smokers, but did not consume drugs or alcohol (Table 1).

Table 2 described self-rated health status and satisfaction with healthcare. The majority (71.2%) of the respondents rated their health as good or very good. As expected, those with multimorbidity were more frequent to perceive their health as moderate, poor, or very poor. On the other hand, those that did not report any NCDs were least satisfied with the healthcare (p = 0.029).

Unmet healthcare needs due to long waiting time, distance to health facility or inadequate finances for healthcare, dental care, mental care and medical prescription were more frequently reported by participants with multimorbidities (p = 0.001) (Table 2).

Table 1. Socio-demographics and lifestyle characteristics

Variables	Number of non-communicable diseases				p-value
	None (532)	One (288)	Multimorbidity (247)	Total (1067)	
	n (%)	n (%)	n (%)	n (%)	
Gender					
Male	266 (51.2)	153 (29.4)	101 (19.4)	520 (48.7)	**0.013**
Female	266 (48.6)	135 (24.7)	146 (26.7)	547 (51.3)	
Age	34.8 (12.3)	46.8 (15.8)	52.7 (15.4)	42.6 (16)	**0.001**
Place of residence					
Northern Kosovo	235 (48.5)	149 (30.7)	101 (20.8)	485 (45.5)	**0.031**
Southern Kosovo	296 (51)	139 (23.9)	146 (25.1)	581 (54.5)	
Relationship status					
Single	209 (19.6)	70 (6.6)	59 (5.5)	338 (31.7)	**0.001**
In a relationship	323 (30.3)	218 (20.4)	188 (17.6)	729 (68.3)	
Education					
≤ 8 years	7 (9.1)	20 (26.0)	50 (64.9)	77 (7.2)	
8–12 years	310 (51)	178 (29.3)	120 (19.7)	608 (57)	**0.001**
> 12 years	215 (56.3)	90 (23.6)	77 (20.1)	382 (35.8)	
Employment					
Unemployed	226 (44.8)	138 (27.4)	140 (27.8)	504 (47.2)	**0.001**
Employed	306 (54.4)	150 (26.6)	107 (19)	563 (52.8)	
Having breakfast					
Irregular	93 (48.9)	50 (26.3)	47 (24.8)	190 (17.8)	0.848
Regular	439 (50.1)	238 (27.1)	200 (22.8)	877 (82.2)	
Fruit intake					
Rare or never	86 (45.5)	53 (28)	50 (26.5)	189 (17.7)	
Weekly	274 (51)	151 (28.1)	112 (20.9)	537 (50.3)	0.562
Daily	172 (50.4)	84 (24.6)	85 (25)	341 (32)	
Vegetable intake					
Rare or never	62 (44.6)	36 (25.9)	41 (29.5)	139 (13)	
Weekly	293 (50.9)	161 (28)	122 (21.1)	576 (54)	0.757
Daily	177 (50.3)	91 (25.9)	84 (23.9)	352 (33)	
Physical activity					
No	247 (41.3)	166 (27.8)	185 (30.9)	598 (56)	**0.001**
Yes	285 (60.8)	122 (26)	62 (13.2)	469 (44)	
Drug use					
No	527 (49.9)	286 (27.1)	243 (23)	1056 (99)	0.549
Yes	5 (45.5)	2 (18.2)	4 (36.3)	11 (1)	
Smoking					
No	301 (53.7)	143 (25.5)	117 (20.8)	561 (52.6)	**0.029**
Yes	231 (45.6)	145 (28.7)	130 (25.7)	506 (47.4)	
Alcohol use					
No	243 (42.6)	158 (27.7)	170 (29.7)	571 (53.5)	**0.001**
Yes	289 (58.3)	130 (26.2)	77 (15.5)	496 (46.5)	
Alcohol use (binge drinking)					
Never or rare	318 (45.6)	188 (27)	191 (27.4)	697 (65.3)	**0.001**
Monthly	162 (57.6)	80 (28.5)	39 (13.9)	281 (26.3)	
Weekly	49 (62)	17 (21.5)	13 (16.5)	79 (7.4)	
Daily	3 (30)	3 (30)	4 (40)	10 (1)	

Statistics: KW χ^2, mean and SD

Table 3 shows factors associated with self-reported health status. Based on the multinomial regression analysis findings (χ^2 = 536.093; p = 0.001), absence or smaller number of NCDs, younger age, being employed, and alcohol consumption emerged as the factors most closely associated with positive self-rating health.

Multinomial regression analysis was also performed to assess the association between presence of NCDs and satisfaction with healthcare. Both models developed for this purpose were statistically significant in explaining this relationship ("General socio-demographic" χ^2 = 108.080, p = 0.001; "Healthcare unavailability" χ^2 = 92.383; p = 0.001). Multinomial regression results failed to reveal any connection between NCD presence and satisfaction with the healthcare.

Being single, lower educational level, healthier lifestyle (regular breakfast, frequent vegetable intake and no alcohol use), shorter waiting time, and sufficient financial means for meeting the dental care needs were factors associated with higher level of satisfaction with the healthcare. Table 4 describes factors associated with healthcare satisfaction among respondents.

DISCUSSION

This study found that more than half of the survey respondents in post-conflict area suffered from at least one NCD. While presence of NCDs was negatively associated with

Table 2. Self-rated health status and satisfaction with healthcare compared to the number of non-communicable diseases

Variables	Number of non-communicable diseases				p-value
	None (532)	One (288)	Multimorbidity (247)	Total (1067)	
	n (%)	n (%)	n (%)	n (%)	
Self-rated health status					
Poor, very poor	3 (5.5)	10 (18.2)	42 (76.3)	55 (5.2)	
Moderate	36 (14.3)	93 (36.9)	123 (48.8)	252 (23.6)	0.001
Good, very good	493 (64.9)	185 (24.3)	82 (10.8)	760 (71.2)	
Satisfaction with healthcare					
Unsatisfied, very unsatisfied	55 (46.6)	31(26.3)	32 (27.1)	118 (11.1)	
Neutral	152 (45.8)	90 (27.1)	90 (27.1)	332 (31.1)	**0.029**
Satisfied, very satisfied	325 (52.7)	167 (27.1)	125 (20.2)	617 (57.8)	
Long waiting time					
I did not need it	336 (58.7)	144 (25.2)	92 (16.1)	572 (53.6)	
No	172 (42)	116 (28.4)	121 (29.6)	409 (38.3)	**0.001**
Yes	24 (27.9)	28 (32.5)	34 (39.6)	86 (8.1)	
Availability due to transportation					
I did not need it	343 (57.3)	156 (26.1)	99 (16.6)	598 (56)	
No	178 (42)	123 (29.1)	135 (31.9)	436 (40.9)	**0.001**
Yes	11 (33.3)	9 (27.3)	13 (39.4)	33 (3.1)	
Lack of finance for healthcare					
I did not need it	338 (58.6)	139 (24.1)	100 (17.3)	577 (54.1)	
No	179 (42.3)	129 (30.5)	115 (27.2)	423 (39.6)	**0.001**
Yes	15 (22.4)	20 (29.9)	32 (47.7)	67 (6.3)	
Lack of finance for dental care					
I did not need it	324 (57.3)	139 (24.6)	102 (18.1)	565 (53)	
No	188 (42.3)	134 (30.2)	122 (27.5)	444 (41.6)	**0.001**
Yes	20 (34.5)	15 (25.9)	23 (39.6)	58 (5.4)	
Lack of finance for medication prescription					
I did not need it	334 (58.1)	141 (24.5)	100 (17.4)	575 (53.9)	
No	190 (41.9)	134 (29.6)	129 (28.5)	453 (42.5)	**0.001**
Yes	8 (20.5)	13 (33.3)	18 (46.2)	39 (3.6)	
Lack of finance for mental care					
I did not need it	50 (56.4)	150 (24.2)	121 (19.4)	621 (58.2)	
No	182 (41.7)	136 (31.1)	119 (27.2)	437 (41)	**0.001**
Yes	0 (0)	2 (22.2)	7 (77.8)	9 (0.8)	

Statistics: KW χ^2, mean and SD

Table 3. Multinomial regression model describing factors associated with self-reported health status

Variables	Self-rated health status (Moderate *vs*. Poor, very poor)		Self-rated health status (Good, very good *vs*. Poor, very poor)	
	p-value	OR (95% CI of OR)	p-value	OR (95% CI of OR)
Number of chronic diseases				
None	0.195	2.35 (0.64–8.56)	**0.001**	23.33 (6.53–83.35)
One	**0.016**	2.68 (1.20–5.98)	**0.001**	7.38 (3.19–17.06)
Multimorbidity	1		1	
Gender				
Male	0.184	0.60 (0.29–1.26)	0.991	0.99 (0.46–2.13)
Female	1		1	
Age	0.272	0.99 (0.96–1.01)	**0.001**	0.93 (0.90–0.95)
Place of residence				
Northern Kosovo	0.851	1.07 (0.54–2.11)	0.242	0.65 (0.32–1.33)
Southern Kosovo	1		1	
Relationship status				
Single	0.293	0.67 (0.32–1.41)	0.325	0.67 (0.30–1.49)
In a relationship	1		1	
Education				
≤ 8 years	0.339	0.59 (0.20–1.73)	0.082	0.34 (0.10–1.15)
8–12 years	0.892	1.06 (0.44–2.58)	0.462	0.72 (0.29–1.75)
> 12 years	1		1	
Employment				
Unemployed	0.128	0.53 (0.24–1.20)	**0.032**	0.40 (0.18–0.93)
Employed	1		1	
Having breakfast				
Irregular	0.101	2.43 (0.84–7.02)	0.341	1.71 (0.57–5.13)
Regular	1		1	

Table 3. Continued				
Fruit intake				
Rare or never	0.631	1.31 (0.44–3.89)	0.324	0.56 (0.18–1.78)
Weekly	0.733	1.16 (0.50–2.69)	0.908	0.39 (0.39–2.28)
Daily	1		1	
Vegetable intake				
Rare or never	0.607	0.73 (0.23–2.39)	0.729	0.80 (0.23–2.79)
Weekly	0.945	1.03 (0.44–2.40)	0.901	0.95 (0.39–2.27)
Daily	1		1	
Physical activity				
No	0.495	1.31 (0.60–2.86)	0.909	0.96 (0.43–2.11)
Yes	1		1	
Drug use				
No	0.474	2.55 (0.19–32.93)	0.301	4.27 (0.27–66.83)
Yes	1		1	
Smoking				
No	0.903	1.04 (0.52–2.09)	0.362	1.40 (0.68–2.89)
Yes	1		1	
Alcohol use				
No	**0.004**	0.23 (0.09–0.62)	**0.002**	0.20 (0.06–0.55)
Yes	1		1	

Bold values are statistically significant; 1 – reference category

Table 4. Multinomial regression model describing factors associated with healthcare satisfaction among respondents

Variables	Satisfaction with healthcare (Neutral *vs.* Unsatisfied, very unsatisfied)		Satisfaction with healthcare (Satisfied, very satisfied *vs.* Unsatisfied, very unsatisfied)	
	p-value	OR (95% CI of OR)	p-value	OR (95% CI of OR)
Model 1. Socio-demographic and and lifestyle characteristics				
Number of chronic diseases				
None	0.974	0.99 (0.55–1.79)	0.178	1.48 (0.84–2.60)
One	0.778	1.09 (0.59–2)	0.209	1.45 (0.81–2.58)
Multimorbidity	1		1	
Gender				
Male	0.315	0.78 (0.48–1.27)	0.592	1.13 (0.72–1.79)
Female	1		1	
Age	0.806	0.99 (0.98–1.02)	0.580	1.01 (0.99–1.02)
Place of residence				
North of Kosovo	0.498	1.17 (0.75–1.83)	0.206	0.76 (0.49–1.16)
South part of Kosovo	1		1	
Relationship status				
Single	**0.017**	2.02 (1.14–3.59)	**0.011**	2.06 (1.18–3.57)
In relationship	1		1	
Education				
≤ 8 years	0.164	1.97 (0.76–5.11)	0.496	0.72 (0.28–1.85)
8–12 years	**0.031**	1.69 (1.05–2.73)	**0.047**	1.58 (1.01–2.47)
> 12 years	1		1	
Employment				
Unemployed	0.563	0.87 (0.55–1.39)	0.406	0.83 (0.53–1.29)
Employed	1		1	
Having breakfast				
Irregular	0.384	0.79 (0.47–1.34)	**0.032**	0.57 (0.34–0.95)
Regular	1		1	
Fruits intake				
Rare or never	0.423	1.35 (0.65–2.84)	0.212	0.64 (0.32–1.29)
Weekly	0.225	1.426 (0.80–2.53)	0.225	0.72 (0.42–1.23)
Daily	1		1	
Vegetable intake				
Rare or never	**0.009**	0.32 (0.14–0.75)	0.633	0.82 (0.37–1.83)
Weekly	**0.013**	0.48 (0.27–0.85)	**0.029**	0.54 (0.31–0.94)
Daily	1		1	
Physical activity				
No	0.549	1.16 (0.72–1.86)	0.543	0.87 (0.56–1.36)
Yes	1		1	
Drug use				
No	0.374	2.53 (0.33–19.50)	0.931	1.08 (0.19–5.87)
Yes	1		1	

Table 4. Continued				
Smoking				
No	0.472	0.85 (0.54–1.34)	0.520	1.15 (0.75–1.77)
Yes	1		1	
Alcohol use				
No	0.352	1.26 (0.77–2.07)	**0.010**	1.85 (1.16–2.95)
Yes	1		1	
Model 2. Unavailability of healthcare				
Number of chronic diseases				
None	0.368	0.76 (0.45–1.35)	0.720	1.10 (0.65–1.88)
One	0.909	0.97 (0.53–1.78)	0.542	1.20 (0.67–2.16)
Multimorbidity	1		1	
Long waiting time				
I did not need it	**0.001**	7.27 (2.15–24.59)	**0.004**	4.95 (1.65–14.88)
No	**0.001**	5.39 (2.59–11.19	**0.001**	7.37 (3.68–14.74)
Yes	1		1	
Availability due to transportation				
I did not need it	0.368	0.52 (0.13–2.16)	0.185	2.69 (0.62–11.64)
No	0.660	0.79 (0.27–2.29)	0.320	1.82 (0.56–5.94)
Yes	1		1	
Lack of finance for healthcare				
I did not need it	0.555	0.68 (0.19–2.45)	0.712	0.79 (0.22–2.79)
No	0.775	0.88 (0.35–2.17)	0.940	1.04 (0.42–2.56)
Yes	1		1	
Lack of finance for dental care				
I did not need it	0.960	1.03 (0.31–3.47)	**0.021**	4.37 (1.25–15.27)
No	0.607	0.79 (0.31–1.97)	0.168	1.99 (0.75–5.27)
Yes	1		1	
Lack of finance for medication prescription				
I did not need it	0.184	0.35 (0.08–1.64)	0.150	0.33 (0.07–1.50)
No	0.131	0.34 (0.09–1.38)	0.297	0.47 (0.12–1.94)
Yes	1		1	
Lack of finance for mental care				
I did not need it	0.315	3.14 (0.34–29.36)	0.784	1.37 (0.15–12.87)
No	0.548	1.94 (0.22–16.88)	0.912	1.13 (0.13–9.99)
Yes	1		1	

Bold values are statistically significant; 1 – reference category

health self-ratings among our participants, it was unrelated with participants' satisfaction with healthcare.

NCD prevalence in the study sample was congruent with that reported for other Serbian territories [17]. The survey respondents were most frequent to report hypertension, which coincided with the findings of previous studies conducted in other countries [22, 23]. Comprehensive literature review revealed that armed conflicts tend to result in greater cardiovascular diseases incidence, as well as more frequent adoption of risky behaviors [10]. For example, Spiegel and Salama [24] reported that cardiovascular diseases are more frequent cause of mortality in areas affected by interethnic conflict, compared to contagious diseases and conflict-related violence.

In a five-year-long study focusing on the 12 most common NCDs, it was found that multimorbidity prevalence varies by the countries, with estimated range 45–70% [25]. The lower multimorbidity prevalence found in this study relative to the results reported by other authors could be attributed to the nature of self-reported data, whereas in most previous studies prevalence was calculated based on data from official medical records [25]. Likewise, disparities in the multimorbidity prevalence for different countries are ascribed to incongruence in the utilized data sources, differences in target population characteristics and NCD types included in the analysis [22]. In the present study, respondents with multimorbidity more frequently reported unemployment, lower educational level and sedentary lifestyle. On the other hand, they more frequently adopted other healthy habits. It is possible that severely compromised health of persons living with multimorbidities precludes them from preforming everyday physical activities, but following medical advice regarding healthy lifestyle and diet.

A higher percentage of participants in our study rated their health as very good and good compared to that of the previous study conducted throughout Serbia [17]. Our results coincide with those reported by the European Union, where almost 70% of the surveyed population rated their health status as good [26]. In our sample, absence or a smaller number of NCDs, younger age, being employed and alcohol consumption are correlated with more positive self-rated health, which is in line with the findings reported in literature [27]. It is interesting to note that the survey respondents who consumed alcohol tend to rate their health more favorably. Given the anxiolytic effects of smoking and alcohol consumption, these habits are more prevalent among individuals living in post-conflict zones, as they serve as a coping mechanism [10, 28]. The studies have found that individuals who consume alcohol regularly in moderate quantities perceive their health status more favorably compared to those that abstain from alcohol or consume it occasionally [29].

In contrast to the self-rated health, presence of self-reported NCDs was not associated with satisfaction with healthcare. Available evidence indicates that satisfaction with healthcare is determined by the educational level, income, age, and residence type [30]. Most of the studies examining patients' satisfaction with healthcare in the United States and European countries indicate that shorter waiting time, better-qualified medical personnel and lower healthcare cost are associated with more favorable healthcare system ratings [31, 32]. Our findings coincide with these observations. Available evidence further indicates that positive interactions with healthcare professionals correlate with greater satisfaction with the healthcare irrespective of the number and complexity of present diseases [33, 34]. In general, most Serbs residing within KM struggle to access required medical treatments and attribute these issues to inadequate healthcare system organization [16]. To sum up, patient satisfaction is derived from a combination of prior experiences with medical services and perceived efficacy, safety and utility of available medical transportation [35].

The significance of the present study stems from the large sample size, thus ensuring its representativeness of the ethnic Serb population residing in KM. Consequently, the results reported in our study provide valuable insight into the NCD prevalence and perceived health status among individuals living in post-conflict zones, and their satisfaction with the healthcare, which is inevitably compromised due to previous conflict. Namely, previous studies from other countries affected by the conflict have found a higher burden of NCDs and mental illness among the population and exacerbations of existing NCDs due to serious psychological distress, less access to health care, interruptions in medication supply, lack of financial stability [11, 12, 23]. However, there are some limitations. Cross-sectional design adopted in the present study precluded us from reaching any conclusions regarding the causality of the observed relationships. Moreover, given that analyses were based on self-reported data that to a degree relied on accurate recall, informer bias could have affected the obtained results. Finally, our lifestyle measures were broad. For example, the measure of alcohol intake and smoking has not been accurately quantified.

CONCLUSION

Based on our findings, it could be concluded that the presence of NCDs is negatively associated with the self-rated health, but not with satisfaction with healthcare. Interestingly, being single, lower educational level, regular breakfast, frequent vegetable intake, no alcohol use, financial stability, dental care and shorter waiting time that mostly depends of organization of health service have positive influence on patients' satisfaction with healthcare. As patients' satisfaction with healthcare is one of the determinants of healthcare system quality, the findings reported in this work could be utilized when formulating healthcare policy, in particular when allocating inevitably limited resources, to ensure that they are most optimally utilized to provide as effective and efficient healthcare as possible.

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Повезаност хроничних незаразних болести са задовољством здравственом заштитом и самопроценом здравственог стања – искуства из постконфликтне средине

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САЖЕТАК

Увод/Циљ Испитивали смо учесталост хроничних незаразних болести (ХНБ) и мултиморбидитета, као и њихову повезаност са самопроценом здравственог стања и задовољством здравственом заштитом.

Методе Студија пресека спроведена је у српским срединама на територији Косова и Метохије током 2015/2016. године. Укупно је анкетирано 1067 одраслих становника коришћењем упитника о социодемографским карактеристикама, животним навикама, самопроцени здравственог стања и задовољства здравственом заштитом, од којих је 535 пријавило присуство неке од ХНБ. Мултиномијална регресија спроведена је за анализу фактора повезаних са задовољством здравственом заштитом и самопроценом здравственог стања.

Резултати Присуство ХНБ је пријављено од стране 50,1% испитаника, док је присуство мултиморбидитета пријавило 23,1% испитаника. Присуство ХНБ је показало негативну повезаност са самопроценом здравственог стања (p = 0,001–0,016), док повезаност ХНБ са задовољством здравственом заштитом није уочена (p = 0,178–0,974). Бити без емотивног партнера (p = 0,011–0,017), ниже образовање (p = 0,031–0,047), редован доручак (p = 0,032), редовно конзумирање поврћа (p = 0,009–0,029), некоришћење алкохола (p = 0,010), краће време чекања (p = 0,001–0,004) и поседовање довољно финансија за остваривање стоматолошке здравствене заштите (p = 0,021) показали су повезаност са већим задовољством здравственом заштитом.

Закључак Присуство ХНБ је показало негативну повезаност са самопроценом здравственог стања, док су краће време чекања и финансије били повезани са већим задовољством здравственом заштитом. Резултати нашег истраживања могу бити од значаја креаторима здравствене политике приликом доношења одлука у правцу стварања што ефикасније здравствене службе.

Кључне речи: хроничне болести; здравствено стање; одрасло становништво