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Inequalities in Health Related Quality of Life in Primorsko-Goranska County, Croatia. How Healthy are People Using Primary Health Care?

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A B S T R A C T

We present a cross sectional study on health related quality of life and EQ5D questionnaire practical use in Primorsko-goranska County in Croatia and inequalities in health between its sub regions with a potential application in regional policies social and healthcare organisation. Of 1066 participants that were patients at 42 family health physician's waiting room, women stood for 636 (59.7%) and men for 430 (40.3%). The most commonly reported problem was »Pain/discomfort« with 634 (59.5%) of all respondents and »Anxiety/depression« with 496 (46.6%). The worst health was reported within older age group and in a group with the lowest socio-economic status. Sub regional differences were found. The best health was reported in the suburbs of the town Rijeka and on the Islands, while the worst was reported in the Mountains. EQ5D is a simple and cost-effective instrument for measuring health related quality of life and recognising subgroups for identification of inequalities in the population.

***Key words**: EQ5D, population groups, health related quality of life, health status, health planning*

Introduction

At the beginning of war in Croatia in 1991, health care system was centralized for the purpose of effective management and decentralized in some ways after the war. »County« as such is the organisational unit that may organize some elements of healthcare and finance them[1]. In Primorsko-goranska County, natural and geographic differences, in combination with historical circumstances and socio-economic variations make a solid ground for the occurrence of inequalities in health. Even though there are some differences in organization of health care between mountain area and the rest of the County that may not be enough. Second point of the Declaration of Alma-Ata from 1978 and many other declarations with newer date, point out our obligation to inform policy makers about the unacceptable discrepancy in healthiness inside our community[2]. Measuring inequalities is as hard as measuring health itself. Even though we are teaching healthcare workers to explore and treat diseases through the prism of health, it is easier, even to us, to measure health by the quantity of disease present within population[3]. Starting with the WHO modern definition of health from 1948, the meaning of health is becoming more comprehensive[4]. In a recent history, life was prolonged by years and mortality rate was reduced[5]. The complex task of defining health is becoming additionally important with the added stress on the Quality of life, and its important component, Health related quality of life (HRQoL)[6]. Beauchamp and Childress, in their book »The principles of Medical Ethics« advocated a new approach, respect to the patient's own assessment of health[7,8].

Health status and HRQoL are measured for various purposes. For example, it is necessary point to look into economic planning and resource allocation. HRQoL is measured with an assortment of instruments, which may

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TABLE 1
GLOBAL SCORE AND VISUAL ANALOGUE SCALE BY SOCIODEMOGRAPHIC CHARACTERISTICS

	N (%)	Global score		Statistics		Visual Analogue Scale (VAS)		Statistics	
		Median	Range	F	p*	Median	Range	F	p*
Team				F=1.777†	p=0.131†			F=2.825†	p=0.024†
The town Rijeka	460 (43.2)	0.760	(–0.349) –(+1.000)			70	10–100		
Suburbs of Rijeka	113 (10.6)	0.796	(–0.429) –(+1.000)			72	20–98		
Coastal subregion	128 (12.0)	0.788	(–0.410) –(+1.000)			70	10–100		
Mountains	98 (9.2)	0.725	(–0.594) –(+1.000)			60	20–100		
Islands	267 (25.0)	0.796	(–0.594) –(+1.000)			70	12–100		
Age				F=28.659†	p<0.001†			F=7.439†	p<0.001†
19–29	133 (12.5)	1.000	(+0.082) –(+1.000)			85	10–100		
30–39	150 (14.1)	0.822	(–0.157) –(+1.000)			80	20–100		
40–49	225 (21.1)	0.796	(–0.239) –(+1.000)			70	10–100		
50–59	226 (21.2)	0.725	(–0.410) –(+1.000)			70	10–100		
60–69	181 (17.0)	0.725	(–0.594) –(+1.000)			60	20–100		
≥70	151 (14.2)	0.656	(–0.594) –(+1.000)			59	10–100		
Sex				F=0.300‡	p=0.584‡			F=0.221‡	p=0.638‡
Female	636 (59.7)	0.727	(–0.594) –(+1.000)			70	10–100		
Male	430 (40.3)	0.796	(–0.594) –(+1.000)			70	20–100		
Education				F=23.840†	p<0.001†			F=0.512†	p=0.600†
Low	436 (40.9)	0.725	(–0.594) –(+1.000)			65	20–100		
Medium	386 (36.2)	0.796	(–0.410) –(+1.000)			70	10–100		
High	244 (22.9)	0.796	(–0.239) –(+1.000)			80	20–100		
Smoking				F=2.111‡	p=0.147‡			F=1.053‡	p=0.305‡
Ex, non smoker	754 (70.7)	0.796	(–0.429) –(+1.000)			70	20–100		
Smoking	312 (29.3)	0.760	(–0.594) –(+1.000)			70	10–100		
Socio Economic Status				F=23.840†	p<0.001†			F=3.361†	p=0.005†
Employed/selfemp	535 (50.2)	0.796	(–0.410) –(+1.000)			80	10–100		
Retired	327 (30.7)	0.725	(–0.590) –(+1.000)			60	20–100		
Housworker	100 (9.4)	0.725	(–0.116) –(+1.000)			62.5	10–100		
Studying	36 (3.4)	1.000	(–0.414) –(+1.000)			85	35–100		
Seeking work	61 (5.7)	0.812	(–0.239) –(+1.000)			72	20–100		
Other	7 (0.7)	0.620	(–0.166) –(+1.000)			61	20–90		

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TABLE 1 (continued from previous page)

	N (%)	Global score		Statistics		Visual Analogue Scale (VAS)		Statistics	
		Median	Range	F	p*	Median	Range	F	p*
Have you ever worked in a social welfare or health institution?				F=3.741‡	p=0.053‡			F=51.734‡	p<0.001‡
Yes	111 (10.4)	0.848	(–0.594) –(+1.000)			80	20–100		
No	955 (89.6)	0.760	(–0.116) –(+1.000)			70	10–100		
Have you ever been seriously ill?				F=82.977‡	p<0.001‡			F=37.448‡	p<0.001‡
Yes	367	0.691	(–0.239) –(+1.000)			60	20–100		
No	699	0.796	(–0.594) –(+1.000)			80	10–100		
Have you ever provided care for your family member who had been seriously ill?				F=0.004‡	p=0.947‡			F=14.223‡	p<0.001‡
Yes	535	0.727	(–0.594) –(+1.000)			70	10–100		
No	531	0.796	(–0.594) –(+1.000)			70	20–100		
Have you ever provided care for somebody else who had been seriously ill?				F=0.402‡	p=0.526‡			F=5.503‡	p=0.019‡
Yes	847	0.725	(–0.594) –(+1.000)			70	10–100		
No	219	0.796	(–0.594) –(+1.000)			71	20–100		

* Differences were tested significant at p<0.05

† One – way ANOVA, ‡ Student's T-test

be generic, preference based or disease specific[9–11]. One of them is developed by EuroQol group, the EQ5D self reporting questionnaire with 5 dimensions to describe HRQoL[12,13].

The aim of this study is to provide a better understanding and a clarification of the dissimilarity in health status between population subgroups in Primorsko-goranska County and to help adjusting healthcare services by taking into account subjective dimension.

Materials and Methods

Sample and respondents

According to 2001 census a total of 305,505 residents live in the Primorsko-goranska County, where 267,650 of them are 19 years and older. A total of 1,500 patients representing (0.56%) of adult population were taken as a convenience sample to be surveyed. Of the 1,500 questionnaires offered, 1,200 were handed in, making the response rate (80%). Not fully completed questionnaires, of which there were 134, were excluded. The number of valid surveys was 1,066. Proportion of women in the study was 636 (59.7%) whereas men stand for 429 (40.3%) of the respondents. There were 5 different sub regions identified in the County: the town Rijeka, suburbs of Rijeka, Coastal sub region, Mountains and Islands.

The study was carried out in the offices of the 42 general practitioner physicians who permitted and supervised conduct of the survey. Questionnaires were distributed between 30 to 40 pieces per office, depending on the number of inhabitants and doctor's offices in five sub-regions of the County. Physicians were giving questionnaires to patients during one day to the patients who were currently present in a waiting room and voluntarily agreed to participate in a self-responding questionnaire. Dissemination, investigation and collection of the study questionnaire have been completed in a period between July and October 2003.

Study questionnaire

The EQ5D instrument was used. This questionnaire is a generic, utility-based HRQoL instrument developed by an international, multidisciplinary group of researchers in order to measure health for clinical and economic appraisal. It was translated and validated for use in Croatian[14].

The EQ5D instrument has been designed for self-completion. It consisted of 4 pages. First page was a cover page. Second page consisted of the descriptive system produced in a standard layout that enables the respondent to classify her/his own health in five dimensions: mobility, ability to undertake self-care, to participate in usual activities, experience of pain and discomfort and

anxiety or depression. Within each of the mentioned dimensions there were three levels of choice for the patient: (1) no problems, (2) moderate problems and (3) extreme problems. These three levels over the five dimensions describe 243 possible health profiles. Five dimensions of health generate a five-digit figure. For example, 11111 is a figure for the best health profile and 33333 for the worst. This figure was converted into a single score (Global score) using »sets of values« derived from population samples. Experts in a number of countries, using different techniques, have derived a number of »value sets«. Time trade-off (TTO) value set of scores has been derived and used mostly in health economic studies. If there is no suitable national value set available for the chosen population, then the advised choice is United Kingdom (UK) TTO, which has been used in this study. The lowest possible score was –0.594 along with the highest possible score, which was 1. Score with a negative character represented scores of people whose health profile is in condition perceived worse then death. Third page of the questionnaire was Visual Analogue Scale (VAS), a 20 cm long »thermometer« calibrated from zero, with worst imaginable health state on the bottom to 100, best imaginable health state on the top. Patients were asked to self-rate their health state and mark the perception on the »thermometer«. The final, fourth page was designed to give us demographic, and other background information like socio-economic characteristics, age, sex, education level, experience of illness, whether smoker or not, and whether or not has the respondent worked in the health or social services. In relation to patient's socio-economic status, categories to choose were: employed or self-employed, retired, house worker, studying, seeking work and other. Education was considered low for the level of primary school, medium for the level of high school and high for patients with the Bachelor's and university degree[13,14].

Statistical analysis

Statistical analysis was performed with the SPSS Statistical Package for Windows, version 10.0 (SPSS Inc. Chicago, IL, USA). Differences were tested using χ^2, t-tests, one-way ANOVA and List Square Differences (LSD), post hoc test. Level of statistical significance was set at $p<0.05$.

Results

There was no significant discrepancy in health related quality of life considering global scores of inhabitants in sub regions but there was a significant difference in VAS, more subjective measure of health, between sub regions. The biggest difference was VAS results between population in the Mountains and Suburbs of the town Rijeka (Table 1).

From the provided scores of each of the 5 dimensions it can notice that Mountains were often scoring the worst. That specially showed in the dimension of »Self care« where Mountains had 23.4% of respondents with moderate and extreme problems while Islands as second worst had 15.1%.

TABLE 2
NUMBERS (PERCENTAGES) OF RESPONDENTS REPORTING A PROBLEM IN EACH EUROQOL DIMENSION

EuroQol dimension	no problem		moderate/ extreme	
	N	%	N	%
Mobility	748	70.0	320	30.0
Self care	927	86.8	141	13.2
Usual activities	774	72.5	294	27.5
Pain/discomfort	433	40.5	635	59.5
Anxiety/depression	570	53.4	498	46.6

As expected, both Global score and VAS showed significant difference between age categories. Best results were in younger age, while older people reported poorer health.

Comparing male and female results, both Global score and VAS didn't show significant difference tested with T-test.

There were differences between global scores of people with different level of education. Those who completed elementary school education and less, (low education), had lower scores then those who completed high school level of education, (medium). Those from the medium education level had lower scores then people who continued their education after high school. Despite the fact that low educated participants expressed their health lower on the VAS, statistically tested differences were not significant.

Smoking status of participants applied to the representation in general population with 29.3% of smokers in the County. Percent of smokers was highest in the age group between 30–39 years old with 42.0% and lowest in a group of oldest citizens with ≥70 years old with 15.2%. Smokers in total reported no significant differences in global score comparing to non-smokers (Table 1). Those who reported to be studying had the best results both in global score and VAS.

Second best in global score were those who seeking work, whereas they were the third best on the VAS. Employees were exactly opposite, second best in VAS and third in global score. The global score and VAS between house workers and retired people was almost the same and it was worst of all. Respondents who worked at the social welfare or health institutions did not had better global scores then those who did not, but they felt better. Global score of people who provided care for a family member or somebody did not showed significantly lower global score. Providing care for a family member or somebody else affected image of personal health on the VAS (Table 1).

Because of the small number of respondents reported extreme problems on each dimension, their results were calculated together with moderate problems. Experience

of five different dimensions showed that pain/discomfort was the most frequently reported with 59.5% of moderate and extreme problems. Second most frequently reported problem was anxiety/depression represented with 46.6% of moderate and extreme problems (Table 2).

Discussion and Conclusion

Information obtained from the results of this survey gives us very important insight on the ill health in our County. It also clears grounds for our premise that some of the sub regions of the County have lower health quality then others. Most of the moderate and extreme problems appeared in residents of the Mountain sub region. They rated their health worse on VAS then others even though their global scores did not showed the same significance. Most of the moderate and extreme problems appeared in residents of the Mountain sub region, lowering their global scores. There were few important moments that speak in favor of the fact Mountains. The worst state of health related quality of life: aging population, unemployed, house workers and residents with low education is largely represented in the Mountains[15]. In total, it seems that age has the strongest influence on the health related quality of life in this study and similar to others[16,17]. But, age as such is heavier burden when social safety net is missing. That seems to be happening in the Mountains where isolation of the population is stronger then anywhere else and more poverty is present, especially in the population of retired farmers[15]. In general, it is not surprising that majority of people with other socio-demographic characteristics showed differences in HRQoL[18]. It is worthy of note that some characteristics like whether or not health or social worker, providing care for somebody or not, changed only the valuation of health on the »thermometer«, while global scores were not significantly different. The question in our study was why smokers didn't show significant difference in health quality? Other important studies had shown that smokers are reporting poorer health[19]. Investigating this observable fact in separate age groups didn't give other results. The explanation could be in some other respondent's characteristic that influenced how they perceive health and unawareness of harmfulness of tobacco. Socio-economic status is very important determinant of health. In our study group of house workers had very poor results together with unemployed. It should be an important reminder to motivate house workers on employment and also to tackle unemployment as part of the public health policy. It is worth mentioning that all house workers were women. Even though populations observed were completely different, most of the results showed comparability with other similar studies, like in UK and New Zealand[16,20]. The most frequently reported moderate or extreme problem was in the dimension of pain/discomort. National questionnaire from the UK, according to their results, suggests that »pain/discomfort« plays an important role in disability research, which is a very good information resource for the care giving social organizations in the County. Anxiety/depression was the second most important problem to investigate and remind health workers on the importance of emotional status of the patient and mental health in general. This survey was conducted at the doctor's office and therefore it may have a bigger number of reported problems then general population, but it is a good starting point for further investigations, especially because it is the first research of this kind in Croatia using EQ5D. For the country with limited resources for health, it is also noteworthy that this research can be conducted with very modest funds, which may ensure repeated conduct of the research.

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NEJEDNAKOSTI U KVALITETI ŽIVOTA POVEZANOJ SA ZDRAVLJEM U PRIMORSKO--GORANSKOJ ŽUPANIJI, HRVATSKA. KOLIKO SU ZDRAVI LJUDI KOJI KORISTE PRIMARNU ZDRAVSTVENU ZAŠTITU?

S A Ž E T A K

Prezentirana je *cross-sectional* studija o kvaliteti života povezanoj sa zdravljem i korištenju u praksi EQ5D upitnika u Primorsko-goranskoj županiji u Hrvatskoj i nejednakostima u zdravlju između njezinih podregija, s potencijalnom primjenom u regionalnim politikama socijalnih i zdravstvenih organizacija. Od 1066 sudionika studije koji su bili pacijenti 42 liječnika obiteljske medicine, žena je bilo 636 (59.7%), a muškaraca 430 (40,3%). Najčešće prijavljeni problem je bio »Bol/nelagoda« u 634 (59,5%) i »Anksioznost/depresivnost« u 496 (46,6%). Najgore zdravlje nađeno je u starijoj dobnoj skupini i u skupini najlošijeg socio-ekonomskog statusa. Podregionalne razlike su također nađene. Najbolje zdravlje nađeno je u predgrađima grada Rijeke i na otocima, dok je najgore nađeno u planinama. EQ5D je jednostavan i isplativ instrument za mjerenje kvalitete života povezane sa zdravljem i prepoznavanje podgrupa za identifikaciju nejednakosti u populaciji.