

PROCENA ZDRAVSTVENE PISMENOSTI ODRASLIH KOJI SVOJU ZDRAVSTVENU ZAŠTITU OSTVARUJU U DOMU ZDRAVLJA PIROT I FAKTORI KOJI JE ODREĐUJU

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SAŽETAK

Uvod/Cilj: Zdravstvena pismenost je pojam koji sve više dobija na važnosti u oblasti javnog zdravlja i zdravstvene zaštite, iako se kao takav koristi još od sedamdesetih godina XX veka. Cilj ovog rada je da se proceni nivo zdravstvene pismenosti u populaciji odraslih pacijenata koji svoju zdravstvenu zaštitu ostvaruju u Domu zdravlja Pirot, kao i da se identifikuju faktori koji mogu biti povezani sa nivoom zdravstvene pismenosti.

Metode: Istraživanje je sprovedeno u vidu studije preseka u Domu zdravlja Pirot u periodu od 1.5.2024. do 1.6.2024.godine. U istraživanju je učestvovalo 400 ispitanika. Kao instrumenti istraživanja korišćeni su opšti upitnik i Evropski upitnik za procenu zdravstvene pismenosti (engl. *The European Health Literacy Questionnaire*, HLS-EU-Q-47). U statističkoj analizi podataka korišćen je hi kvadrat test.

Rezultati: Od 400 odraslih ispitanika doma zdravlja 10,2% je imalo neadekvatnu, 15,8% problematičnu, 33,5% dovoljnu, a 40,5% odličnu zdravstvenu pismenost. Dovoljna ili odlična zdravstvena pismenost je statistički značajno bila povezana sa polom, godinama starosti, mestom stanovanja, bračnog statusa i stepenom obrazovanja. Lica sa hroničnim bolestima, kao i lica koja su lično procenila da imaju loše i veoma loše zdravstveno stanje, su značajno češće imala neodgovarajuću/problematičnu zdravstvenu pismenost.

Zaključak: Nizak nivo zdravstvene pismenosti je ključna barijera za korišćenje odgovarajuće zdravstvene zaštite, zbog čega je neophodno kontinuirano raditi na identifikaciji grupa sa neadekvatnom zdravstvenom pismenošću i njihovoj edukaciji.

Ključne reči: zdravstvena pismenost, hronična bolest, faktori rizika, javno zdravlje

Uvod

Zdravstvena pismenost je pojam koji sve više dobija na značaju u oblasti javnog zdravlja i zdravstvene zaštite, iako se kao takav koristi od 1970-ih godina. Koncept zdravstvene pismenosti definiše ljudski potencijal da ispuni složene zahteve zdravlja u savremenom društvu (1). Zdravstvena pismenost, između ostalih determinanti socijalnog zdravlja, u velikoj meri utiče na poboljšanje opšteg zdravlja, a od ključne je važnosti da se unapredi zdravstvena pismenost na lokalnom, regionalnom, nacionalnom i međunarodnom nivou, jer se time poboljšava ukupno društveno zdravlje, omo-

gućavajući pacijentima da preuzmu kontrolu nad svojim zdravljem (2).

Zdravstvena pismenost se definiše kao procena sopstvenog zdravlja, ali i zdravlja porodice i zajednice u smislu razumevanja faktora koji na njega utiču, kao i znanja za upravljanje njime (3). U potrazi za sveobuhvatnom definicijom, Evropski konzorcijum o zdravstvenoj pismenosti predložio je definiciju koja kaže da je „zdravstvena pismenost usko povezana sa pismenošću i podrazumeva znanje ljudi, motivaciju i kompetencije za pristup, razumevanje, ocenu i primenu informaci-

ASSESSMENT OF HEALTH LITERACY OF ADULTS RECEIVING THEIR HEALTH CARE AT THE PIROT HEALTH CENTER AND THE FACTORS THAT DETERMINE IT

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SUMMARY

Introduction/Aim: Health literacy is a concept that has been gaining increasing importance in the field of public health and healthcare, even though it has been in use since the 1970s. The aim of this work is to assess the level of health literacy in the population of adult patients who receive their health care in the Pirot Health Center, as well as to identify factors that may be associated with the level of health literacy.

Methods: The research was conducted in the form of a cross-sectional study in the Pirot Health Center in the period from 1.5.2024. until 1.6. 2024. 400 respondents participated in the research. The general questionnaire and the European Health Literacy Questionnaire (HLS-EU-Q-47) were used as research instruments. The chi-square test was used in the statistical analysis of the data.

Results: Out of 400 adult health center respondents, 10.2% had inadequate, 15.8% problematic, 33.5% sufficient, and 40.5% excellent health literacy. Sufficient or excellent health literacy was statistically significantly associated with gender, age, place of residence, marital status and level of education. Persons with chronic diseases, as well as persons who personally assessed that they have poor and very poor health status, significantly more often had inadequate/problematic health literacy.

Conclusion: A low level of health literacy is a key barrier to the use of appropriate health care, which is why it is necessary to continuously work on the identification of groups with inadequate health literacy and their education.

Key words: health literacy, chronic disease, risk factors, public health

Introduction

Health literacy is a concept that has been recognized as one of the most important in the field of public health and health care, although it has been used as such since 1970s. The concept of health literacy defines the human potential to meet the complex demands of health in modern society (1). Health literacy, among other determinants of social health, influences the improvement of general health, to a large extent, and therefore, it is of key importance to improve health literacy at the local, regional, national and international levels, since this improves overall social health, enabling patients to take control over their health (2).

Health literacy is defined as the assessment of one's own health, but also the health of family and community in terms of understanding the factors that influence it, as well as knowledge to manage it (3). In search of a comprehensive definition, the European Health Literacy Consortium proposed the following definition: "health literacy is closely related to literacy and involves the knowledge, motivation and competences of persons to access, understand, appraise and apply health information in order to make decisions about health care, disease prevention and health promotion necessary for maintaining and improving the

ja za donošenje odluka u svakodnevnom životu koje se tiču zdravstvene zaštite, prevencije bolesti i promocije zdravlja, za održavanje i poboljšanje kvaliteta života tokom životnog puta” (4). Pregledom literature može se zaključiti da autori često naglašavaju potrebu za prevazilaženjem isključivo individualnog pristupa i insistiraju na tome da se zdravstvena pismenost posmatra kao rezultat usklađivanja kriterijuma koje postavlja zdravstveni sistem sa mogućnostima i kapacitetima pojedinca.

Zagovornici zdravstvene pismenosti stanovništva dodatno su proširili kontekst zdravstvene pismenosti kako bi uključili determinante koje prevazilaze lične veštine i čitav medicinski okvir zdravstvene pismenosti. Shodno tome, definisani su modeli zdravstvene pismenosti i to funkcionalna, interaktivna i kritička zdravstvena pismenost (5). Procena zdravstvene pismenosti razvijena je zajedno sa paradigmom zdravstvene pismenosti. Koristeći rezultate prethodnih istraživanja, u cilju procene zdravstvene pismenosti razvijena su dva koncepta (6). Prvi, govori o neophodnosti razvoja najkraćeg mogućeg instrumenta za testiranje sposobnosti čitanja i razumevanja zdravstvenih informacija. Alati koji se koriste u ovom konceptu uglavnom su u formi upitnika, nakon čega istraživač vodi intervju. Drugi, uključuje samotestiranje zdravstvene pismenosti. Ovaj koncept se uglavnom koristi samoinicijativno kada se pojedinac podvrgava popunjavanju testa, a najčešće zato što je ranije imao poteškoća u razumevanju zdravstvenih informacija. Veliki broj navedenih alata javno je dostupan istraživačima, a najčešće korišćeni su: Test za ispitivanje funkcionalne zdravstvene pismenosti kod odraslog stanovništva (engl. *The Test of Functional Health Literacy in Adults*, TOFHLA), Instrument za brzu procenu pismenosti kod odraslih u medicini (engl. *The Rapid Estimate of Adults Literacy in Medicine*, REALM), Test dostignuća širokog opsega (engl. *The Wide Range Achievement Test*; WRAT), Evropski upitnik za procenu zdravstvene pismenosti (engl. *The European Health Literacy Questionnaire*, HLS-EU-Q), Najnoviji vitalni znak (engl. *The Newest Vital Sign*; NVS), Alat za kratak skrining zdravstvene pismenosti (engl. *The Brief Health Literacy Screening Tool*, BRIEF), Skala svih aspekata zdravstvene pismenosti (engl. *All Aspects of Health Literacy Scale*, AAHLS), Demografska procena zdravstvene pismenosti (engl. *The Demographic Assessment of Health Literacy*, DAHL), Procena zdravstvene pismenosti za adolescente

(engl. *The Health Literacy Measure for Adolescents*, HELMA) i Upitnik zdravstvene pismenosti (engl. *The Health Literacy Questionnaire*, HLQ). Takođe, pored navedenih alata, treba napomenuti da su alati za indirektnu procenu zdravstvene pismenosti dostupni i kada je zdravstvena pismenost povezana sa nekom drugom veštinom, kao npr. numeričke veštine ili veštine samoprocene.

Svetska zdravstvena organizacija (SZO) dala je definiciju zdravlja u kojoj kaže da je „zdravlje stanje potpunog fizičkog, mentalnog i socijalnog blagostanja, a ne samo odsustvo bolesti” (7). Glavne determinante zdravlja su promenljivi i nepromenljivi faktori. Nepromenljivi zdravstveni faktori su oni koji se ne mogu promeniti našim uticajem, kao što su genetska predispozicija, polna struktura i starost. Promenljivi faktori su oni na koje svojim delovanjem možemo uticati i smanjiti destruktivni uticaj navedenih faktora na zdravlje. SZO je izvela devet grupa zdravstvenih determinanti: lični prihod, obrazovanje, fizičko okruženje, zapošljavanje i uslovi rada, mreža socijalne podrške, genetski faktori, individualno zdravstveno ponašanje i odgovor na stres, zdravstveni sistem (pristupačnost, upotrebljivost, efikasnost u preventivi i lečenju).

Cilj ovog rada je da se proceni nivo zdravstvene pismenosti u populaciji odraslih pacijenata koji svoju zdravstvenu zaštitu ostvaruju u Domu zdravlja Pirot, kao i da se identifikuju faktori koji mogu biti povezani sa nivoom zdravstvene pismenosti.

Metode

Istraživanje je sprovedeno u vidu studije preseka, u periodu od 1. 5. 2024. do 1. 6. 2024. godine. U istraživanju je učestvovalo 400 ispitanika, koji su u navedenom periodu obratili izabranom lekaru. Studija je sprovedena po Helsinškoj deklaraciji, a etičko odobrenje je dobijeno od Etičkog odbora Doma zdravlja Pirot, u Pirotu (poziv na broj: 02-03-1/EO). Pre početka istraživanja ispitanici su bili upoznati sa ciljem i procedurom istraživanja. Svi ispitanici su pre početka istraživanja potpisali dobrovoljni informisani pristanak za učestvovanje u istraživanju, nakon čega je usledila procena podobnosti za uključanje u studiju. Procena podobnosti je vršena na osnovu kriterijuma za uključivanje i isključivanje. Kriterijumi za uključivanje u istraživanje podrazumevali su: da pacijenti imaju pravo na zdravstvenu zaštitu u Domu zdravlja „Pirot“, da su stariji od 18 godina i da su dali pristanak da dobrovoljno popune upitnik. Kriterijumi za isključiva-

quality of life throughout life" (4). By reviewing the literature, it can be concluded that authors often emphasize the need to overcome an exclusively individual approach and insist that health literacy should be viewed as the result of coordinating the criteria set by the health system with the individual's capabilities and capacities.

The proponents of population health literacy have expanded the context of health literacy additionally in order to include the determinants that surmount personal skills and the whole medical framework of health literacy. Therefore, the models of health literacy have been defined, that is, functional, interactive and critical health literacy (5). The assessment of health literacy has been developed together with the paradigm of health literacy. By using the results of previous studies, aimed at the assessment of health literacy, two concepts have been developed (6). The first speaks about the necessity of developing the shortest possible instrument for testing the ability of reading and understanding health information. Tools that are used in this concept are mainly in the form of a questionnaire, and later the researcher conducts the interview. The second includes the self-test of health literacy. This concept is mainly based on self-initiative and the individual completes the test, most frequently because he previously had difficulty understanding health information. The majority of the mentioned tools is publicly available to researchers, while the following are the most often used: The Test of Functional Health Literacy in Adults (TOFHLA), The Rapid Estimate of Adults Literacy in Medicine (REALM), The Wide Range Achievement Test (WRAT), The European Health Literacy Questionnaire (HLS-EU-Q), The Newest Vital Sign (NVS), The Brief Health Literacy Screening Tool (BRIEF), All Aspects of Health Literacy Scale (AAHLS), The Demographic Assessment of Health Literacy (DAHL), The Health Literacy Measure for Adolescents (HELMA) and The Health Literacy Questionnaire (HLQ). Also, in addition to the mentioned tools, it should be mentioned that the tools for the indirect assessment of health literacy are available even when health literacy is associated with other skills, such as numerical skills or self-assessment skills.

The World Health Organization (WHO) defined health in the following way: "health is a state of complete physical, mental and social well-being

and not merely the absence of disease" (7). The main determinants of health are modifiable and non-modifiable factors. The non-modifiable health factors are those that cannot be changed by our influence, such as genetic predisposition, gender structure and age. The modifiable factors are those that we can influence and thus reduce the destructive impact of the mentioned factors on health. The WHO derived nine groups of health determinants: personal income, education, physical environment, employment and working conditions, network of social support, genetic factors, individual health behavior and response to stress, health system (accessibility, usability, efficiency in prevention and treatment).

The aim of this study is to assess the level of health literacy in the population of adult patients who receive their health care in the Health Center Pirot, as well as to identify factors that may be associated with the level of health literacy.

Methods

The research was conducted in the form of a cross-sectional study from May 1st, 2024 to June 1st, 2024. The study included 400 participants, who consulted the chosen doctor in the mentioned period. The study was conducted according to the Declaration of Helsinki, while ethical approval was obtained by the Ethics Committee of the Health Center Pirot (reference number: 02-03-1/EO). The respondents were acquainted with the aim and procedure of the research prior to the start of the study. All respondents signed a voluntary informed consent to participate in the study prior to the start of the study, which was followed by the assessment of suitability for inclusion in the study. Eligibility was assessed based on inclusion and exclusion criteria. The inclusion criteria were the following: patients had the right to health care at the Health Center Pirot, they were older than 18 and they had given their consent to fill out the questionnaire voluntarily. The exclusion criteria were: they did not have the right to health care at the Health Center Pirot, they were younger than 18 and they refused to participate in the study.

The general questionnaire on demographic, social and economic characteristics and characteristics related to the use of health system services and attitudes, information and behavior of respondents in the field of health and the European Health Literacy Questionnaire (HLS-EU-Q-47), which

nje iz istraživanja su bili: da ne ostvaruju pravo na zdravstvenu zaštitu u Domu zdravlja „Piroć“, da su mlađi od 18 godina i da su odbili učestvovanje u istraživanju.

Kao instrumenti istraživanja korišćeni su opšti upitnik o demografskim, socijalnim i ekonomskim karakteristikama i karakteristikama koji se odnose na korišćenje usluga zdravstvenog sistema i stavovima, informisanosti i ponašanju ispitanika u oblasti zdravlja i Evropski upitnik za procenu zdravstvene pismenosti (engl. *The European Health Literacy Questionnaire*, HLS-EU-Q-47), standardizovan upitnik za testiranje zdravstvene pismenosti koji je javno dostupan (1). Evropski upitnik za procenu zdravstvene pismenosti je sveobuhvatan alat koji se koristi za procenu zdravstvene pismenosti u opštoj populaciji. Upitnik se sastoji od ukupno 47 stavki koje su podeljene u tri osnovna domena i to zdravstvena briga (engl. *Healthcare*), prevencija bolesti (eng. *Disease Prevention*) i promocija zdravlja (eng. *Health Promotion*).

Domen zdravstvene brige obuhvata 16 stavki koje procenjuju sposobnost pojedinca da pronalazi, razumeva, procenjuje i koristi informacije u vezi sa zdravstvenom zaštitom. Domen prevencija bolesti sadrži 15 stavki koje ispituju sposobnost pojedinca da pronalazi, razumeva, procenjuje i koristi informacije koje se odnose na prevenciju bolesti, dok se domen promocija zdravlja sastoji od 16 stavki koje procenjuju sposobnost pojedinca da pronalazi, razumeva, procenjuje i koristi informacije u cilju unapređenja i očuvanja zdravlja. Zdravstvena pismenost se procenjuje kroz odgovore na postavljena pitanja koja se odnose na gore navedene domene. Ispitanici odgovaraju na svaku stavku koristeći Likertovu skalu koja se kreće od 1 (vrlo teško) do 4 (vrlo lako), čime se meri koliko dobro mogu da pronađu, razumeju, procene i koriste zdravstvene informacije. Za ispitanike koji su validno odgovorili na najmanje 80% svih pitanja izračunat je sveobuhvatni opšti Indeks zdravst-

vene pismenosti (HLS-EU-Q Index) prema formuli: $\text{Index} = (\text{mean} - 1) * (50/3)$, čije se vrednosti kreću od 0, što predstavlja „najmanji mogući“, do 50, što predstavlja „najbolji mogući“ rezultat zdravstvene pismenosti. Na osnovu opšteg Indeksa zdravstvene pismenosti ispitanici su klasifikovani u jednu od četiri grupe nivoa zdravstvene pismenosti: neadekvatna (0-25), problematična (>25-33), dovoljna (>33-42) i odlična (>42-50).

Za statističke proračune korišćen je komercijalni, standardni programski paket SPSS, verzija 20.0. (*The Statistical Package for Social Sciences software—SPSS Inc, version 20.0, Chicago, IL*). Za statističku analizu podataka korišćen je hi kvadrat test.

Rezultati

Od 400 odraslih ispitanika uključenih u ovo studiju preseka 10,2% je imalo neadekvatnu, 15,8% problematičnu, 33,5% dovoljnu, a 40,5% odličnu zdravstvenu pismenost (tabela 1).

Najviše ispitanika je bilo starosne dobi od 30 do 39 godina (37,0%), a najmanje je imalo 50 i više godina (13,5%). Ispitanika 40-49 godina je bilo 23,5%, a 20-29 godina 26,0% (tabela 2, grafikon 1). Većinu ispitanika u ovom istraživanju činile su žene (62,0%) (tabela 2, grafikon 2), osobe u braku ili vanbračnoj zajednici (57,5%) (tabela 2, grafikon 3), kao i osobe koje živele u urbanim sredinama (57,5%) (tabela 2, grafikon 4). U odnosu na stepen obrazovanja, najveći procenat ispitanika je bio sa srednjoškolskim obrazovanjem (78,0%), a najmanji sa nepotpunom ili završenom osnovnom školom (2,7%). Što se tiče radnog statusa, među ispitanicima je najviše bilo onih koji su zaposleni (79,5%), a najmanje penzionera (12,0%). Najveći procenat ispitanika je materijalno stanje svojeg domaćinstva definisao kao dobro (56,0%), a najmanji kao veoma loše (2%). Prilikom procene sopstvenog zdravlja, 36% ispitanika je navelo da ima dobro zdravstveno stanje, a 4,5% kao veoma loše (tabela 2, grafikon 5). Hroničnu bolest je imalo 18,5%,

Tabela 1. Nivo zdravstvene pismenosti prema Indeksu zdravstvene pismenosti odraslih koji svoju zdravstvenu zaštitu ostvaruju u Domu zdravlja Piroć

Nivo zdravstvene pismenosti	N	%
Neadekvatna zdravstvena pismenost	40	10,2
Problematična zdravstvena pismenost	63	15,8
Dovoljna zdravstvena pismenost	135	33,5
Odlična zdravstvena pismenost	162	40,5

is a standardized health literacy test that is publicly available, were used as research instruments (1). The European questionnaire for the assessment of health literacy is a comprehensive tool used to assess health literacy in the general population. The questionnaire consists of 47 items that are divided into three basic domains, namely healthcare, disease prevention and health promotion.

The health care domain includes 16 items that assess the ability of an individual to find, understand, evaluate and use information related to health care. The domain of disease prevention contains 15 items that examine the ability of an individual to find, understand, evaluate and use information related to disease prevention, while the domain of health promotion consists of 16 items that assess the ability of an individual to find, understand, evaluate and use information in order to improve and preserve health. Health literacy is assessed through answers to raised questions related to the above mentioned domains. The respondents answer questions using a Likert scale ranging from 1 (very difficult) to 4 (very easy), which measures how well they can find, understand, evaluate and use health information. For respondents who validly answered at least 80% of all questions, a comprehensive general health literacy index (HLS-EU-Q Index) was calculated according to the formula: $\text{Index} = (\text{mean} - 1) * (50/3)$, whose values range from 0, which is the “lowest possible”, to 50, which is the “best possible” health literacy score. Based on the general health literacy index, respondents were classified into one of four groups of health literacy levels: inadequate (0-25), problematic (>25-33), sufficient (>33-42) and excellent (>42-50).

The commercial, standard software package SPSS, version 20.0 (The Statistical Package for Social Sciences software – SPSS Inc, version 20.0, Chicago, IL). Chi-square test was used for the statistical analysis of data.

Results

Of 400 adult respondents, who were included in this cross-sectional study, 10.2% had inadequate, 15.8% problematic, 33.5% sufficient, and 40.5% excellent health literacy (Table 1).

The majority of respondents were in the age group 30 to 39 years (37.0%), while the fewest respondents were 50 and older (13.5%). 23.5% of respondents were in the age group 40-49 years, while 26.0% were in the age group 20-29 years (Table 2, Figure 1). The majority of respondents in this study were women (62.0%) (Table 2, Figure 2), married persons or persons who were cohabiting (57.5%) (Table 2, Figure 3), as well as persons who lived in urban areas (57.5%) (Table 2, Figure 4). According to the level of education, the highest percentage of respondents had a high school diploma (78.0%), while the lowest percentage of respondents was among persons who did not complete or who completed primary school (2.7%). In relation to the work status, the majority of respondents were employed (79.5%), while the fewest respondents were retired (12.0%). The highest percentage of respondents defined the financial condition of their household as good (56.0%), while the smallest percentage of them defined this condition as bad (2%). When assessing their own health, 36% of respondents stated that they had a good state of health, while 4.5% stated that it was very bad (Table 2, Graph 5). 18.5% of respondents had a chronic disease, and 81.5% had no chronic diseases (Table 2, Figure 6). Adequate or excellent health literacy was statistically significantly more often present in women than in men, in those under the age of 40 than in those older than 40, in the urban population than in people living in the suburbs and in rural areas, in married persons or persons who were cohabiting than in single or divorced/widowed persons, in persons with university or college diplomas in comparison to lower

Table 1. The level of health literacy according to the Health Literacy Index of adults who receive their health care at the Pirov Health Center

Level of health literacy	N	%
Inadequate health literacy	40	10.2
Problematic health literacy	63	15.8
Sufficient health literacy	135	33.5
Excellent health literacy	162	40.5

Tabela 2. Sociodemografske karakteristike odraslih koji svoju zdravstvenu zaštitu ostvaruju u Domu zdravlja Pirot u odnosu na stepen zdravstvene pismenosti

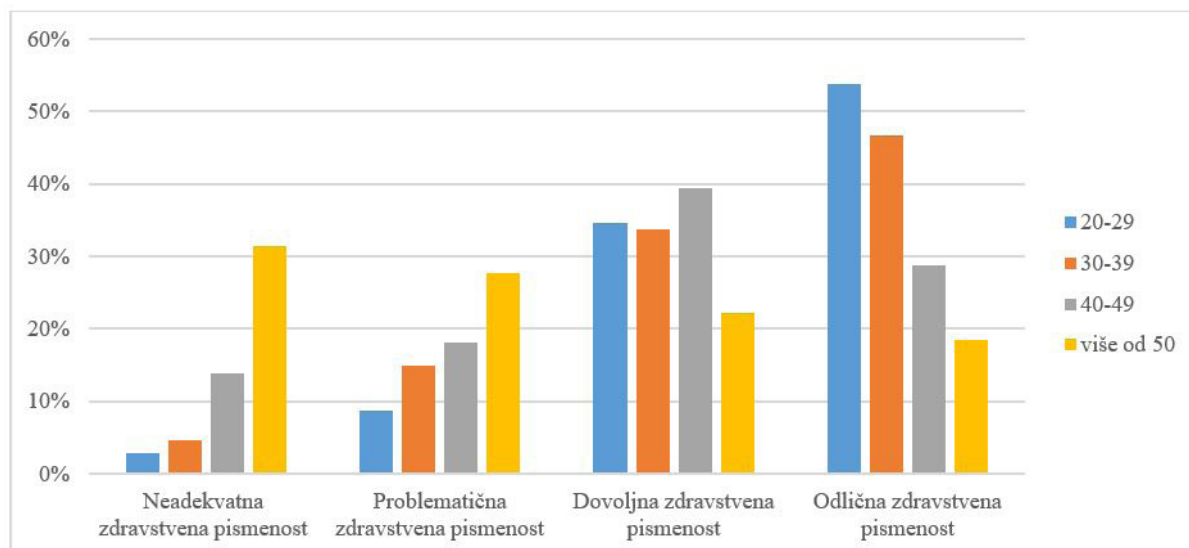
Karakteristike ispitanika	Neadekvatna zdravstvena pismenost N (%)	Problematična zdravstvena pismenost N (%)	Dovoljna zdravstvena pismenost N (%)	Odlična zdravstvena pismenost N (%)	p vrednost
Pol					
Muški	16 (10,5)	38 (25,0)	54 (35,5)	44 (28,9)	<0,001
Ženski	24 (9,7)	25 (10,1)	81 (32,7)	118 (47,6)	
Starosna dob (godine)					
20-29*	3 (2,9)	9 (8,6)	36 (34,6)	56 (53,8)	<0,001
30-39*	7 (4,7)	22 (14,9)	50 (33,8)	69 (46,6)	
40-49	13 (13,8)	17 (18,1)	37 (39,4)	27 (28,7)	
više od 50	17 (31,5)	15 (27,8)	12 (22,2)	10 (18,5)	
Sredina iz koje potiču					
Gradska	11 (4,8)	28 (12,2)	97 (42,2)	94 (40,9)	<0,001
Prigradska*	11 (11,5)	27 (28,1)	26 (27,1)	32 (33,3)	
Seoska*	18 (24,3)	8 (10,8)	12 (16,2)	36 (48,6)	
Bračni status					
Neoženjen/neudata	17 (11,6)	19 (13,0)	35 (24,0)	75 (51,4)	<0,001
U braku/ vanbračnoj zajednici	18 (7,8)	36 (15,6)	93 (40,4)	83 (36,9)	
Udovica/udovac*	3 (21,4)	5 (35,7)	2 (14,3)	4 (28,6)	
Razveden/na*	2 (20,0)	3 (30,0)	5 (50,0)	0 (0,0)	
Stepen obrazovanja					
Osnovna škola i niže*	3 (27,3)	3 (27,3)	5 (45,5)	0 (0,0)	0,009
Srednja škola*	30 (9,6)	48 (15,4)	115 (36,9)	119 (38,1)	
Viša/Visoka škola	7 (9,1)	12 (15,6)	15 (19,5)	43 (55,8)	
Radni status					
Zaposlen/na	15 (4,7)	43 (13,5)	112 (35,2)	148 (46,5)	<0,001
Nezaposlen/na	13 (27,1)	10 (20,8)	14 (29,2)	11 (22,9)	
U penziji	12 (35,3)	10 (29,4)	9 (26,5)	3 (8,8)	
Socio-ekonomsko stanje					
Vrlo loše*	6 (75,0)	2 (25,0)	0 (0,0)	0 (0,0)	0,125
Loše*	1 (4,2)	3 (12,5)	9 (37,5)	11 (45,8)	
Prosečno	5 (10,4)	12 (25,0)	16 (33,3)	15 (31,2)	
Dobro	22 (9,8)	18 (8,0)	86 (38,4)	98 (43,7)	
Vrlo dobro	6 (6,2)	28 (29,2)	24 (25,0)	38 (39,6)	
Subjektivna procena zdravstvenog stanja					
Veoma dobro*	2 (2,6)	19 (25,0)	29 (38,2)	26 (34,2)	<0,001
Dobro*	4 (2,7)	10 (6,8)	47 (32,2)	85 (58,2)	
Prosečno	11 (10,6)	12 (11,5)	43 (41,3)	38 (36,5)	
Loše	11 (19,6)	19 (33,9)	14 (25,0)	12 (21,4)	
Veoma loše	12 (66,7)	3 (16,7)	2 (11,1)	1 (5,5)	
Postojanje hronične bolesti					
Da	13 (17,6)	23 (31,1)	19 (25,7)	19 (25,7)	<0,001
Ne	27 (8,3)	40 (12,3)	116 (35,6)	143 (43,9)	

*spojene kategorije pri izračunavanju p vrednosti korišćenjem hi kvadrat testa

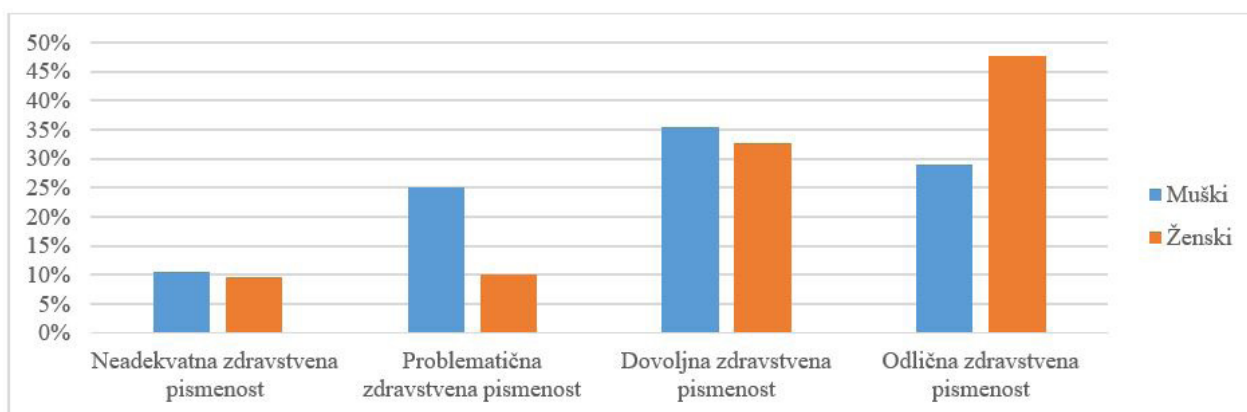
Table 2. Socio-demographic characteristics of adults who receive their health care at the Pirot Health Center in relation to the level of health literacy

Characteristics of respondents	Inadequate health literacy N (%)	Problematic health literacy N (%)	Sufficient health literacy N (%)	Excellent health literacy N (%)	p value
Gender					
Male	16 (10.5)	38 (25.0)	54 (35.5)	44 (28.9)	<0.001
Female	24 (9.7)	25 (10.1)	81 (32.7)	118 (47.6)	
Age (years)					
20-29*	3 (2.9)	9 (8.6)	36 (34.6)	56 (53.8)	<0.001
30-39*	7 (4.7)	22 (14.9)	50 (33.8)	69 (46.6)	
40-49	13 (13.8)	17 (18.1)	37 (39.4)	27 (28.7)	
Older than 50	17 (31.5)	15 (27.8)	12 (22.2)	10 (18.5)	
Environment in which they live					
City	11 (4.8)	28 (12.2)	97 (42.2)	94 (40.9)	<0.001
Suburban*	11 (11.5)	27 (28.1)	26 (27.1)	32 (33.3)	
Rural*	18 (24.3)	8 (10.8)	12 (16.2)	36 (48.6)	
Marital status					
Single	17 (11.6)	19 (13.0)	35 (24.0)	75 (51.4)	<0.001
Married/in cohabitation	18 (7.8)	36 (15.6)	93 (40.4)	83 (36.9)	
Widow/widower*	3 (21.4)	5 (35.7)	2 (14.3)	4 (28.6)	
Divorced*	2 (20.0)	3 (30.0)	5 (50.0)	0 (0.0)	
Level of education					
Primary school and lower*	3 (27.3)	3 (27.3)	5 (45.5)	0 (0.0)	0.009
Secondary school*	30 (9.6)	48 (15.4)	115 (36.9)	119 (38.1)	
College/Faculty	7 (9.1)	12 (15.6)	15 (19.5)	43 (55.8)	
Working status					
Employed	15 (4.7)	43 (13.5)	112 (35.2)	148 (46.5)	<0.001
Unemployed	13 (27.1)	10 (20.8)	14 (29.2)	11 (22.9)	
Retired	12 (35.3)	10 (29.4)	9 (26.5)	3 (8.8)	
Socio-economic state					
Very bad*	6 (75.0)	2 (25.0)	0 (0.0)	0 (0.0)	0.125
Bad*	1 (4.2)	3 (12.5)	9 (37.5)	11 (45.8)	
Average	5 (10.4)	12 (25.0)	16 (33.3)	15 (31.2)	
Good	22 (9.8)	18 (8.0)	86 (38.4)	98 (43.7)	
Very good	6 (6.2)	28 (29.2)	24 (25.0)	38 (39.6)	
Subjective assessment of health condition					
Very good*	2 (2.6)	19 (25.0)	29 (38.2)	26 (34.2)	<0.001
Good*	4 (2.7)	10 (6.8)	47 (32.2)	85 (58.2)	
Average	11 (10.6)	12 (11.5)	43 (41.3)	38 (36.5)	
Poor	11 (19.6)	19 (33.9)	14 (25.0)	12 (21.4)	
Very poor	12 (66.7)	3 (16.7)	2 (11.1)	1 (5.5)	
Existence of chronic disease					
Yes	13 (17.6)	23 (31.1)	19 (25.7)	19 (25.7)	<0.001
No	27 (8.3)	40 (12.3)	116 (35.6)	143 (43.9)	

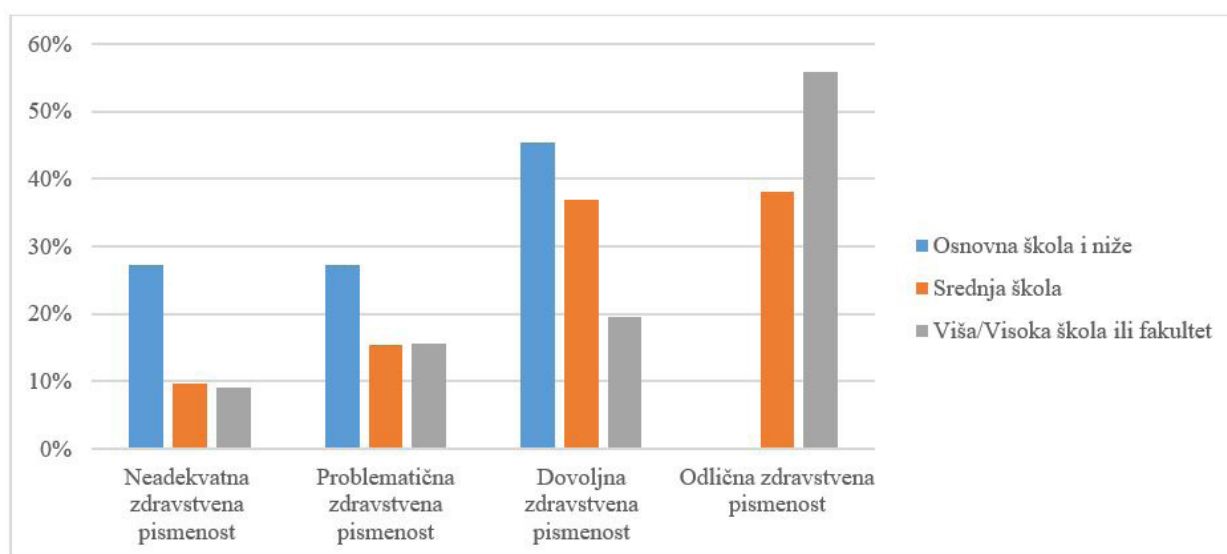
*joint categories when calculating p value using chi-square test



Grafikon 1. Distribucija ispitanika u populaciji odraslih pacijenata (n=400) koji svoju zdravstvenu zaštitu ostvaruju u Domu zdravlja Pirot prema nivou zdravstvene pismenosti u odnosu na starosnu dob



Grafikon 2. Distribucija ispitanika u populaciji odraslih pacijenata (n=400) koji svoju zdravstvenu zaštitu ostvaruju u Domu zdravlja Pirot prema nivou zdravstvene pismenosti u odnosu na pol



Grafikon 3. Distribucija ispitanika u populaciji odraslih pacijenata (n=400) koji svoju zdravstvenu zaštitu ostvaruju u Domu zdravlja Pirot prema nivou zdravstvene pismenosti i u odnosu na obrazovni status

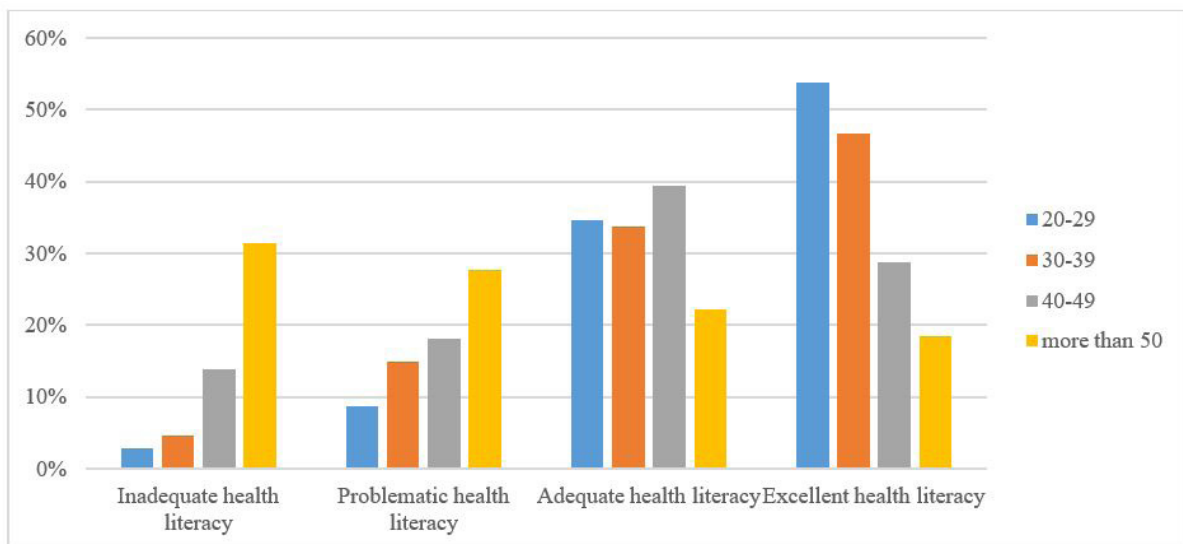


Figure 1. Distribution of respondents in a population of adult patients (n=400) who receive their health-care at the Health Center Pirot according to the level of health literacy in relation to age

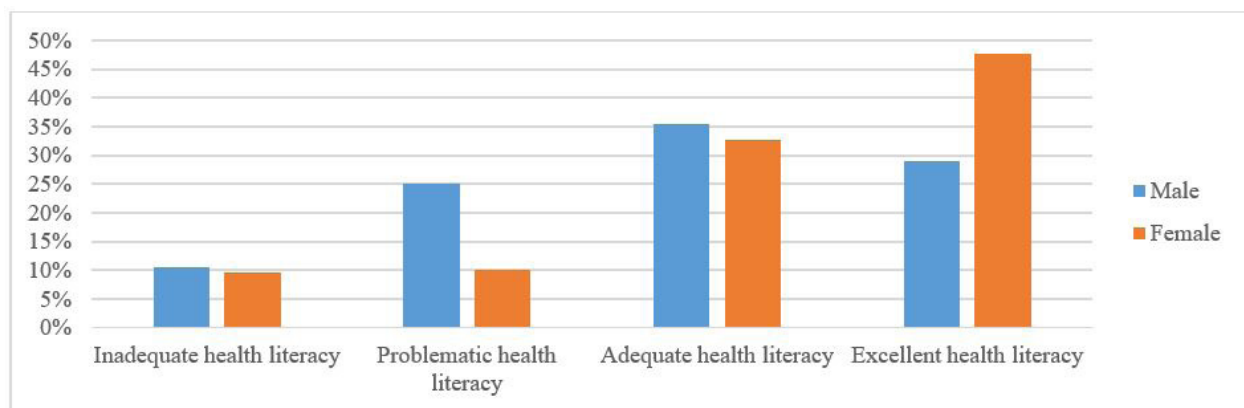


Figure 2. Distribution of respondents in a population of adult patients (n=400) who receive their health-care at the Health Center Pirot according to the level of health literacy in relation to gender

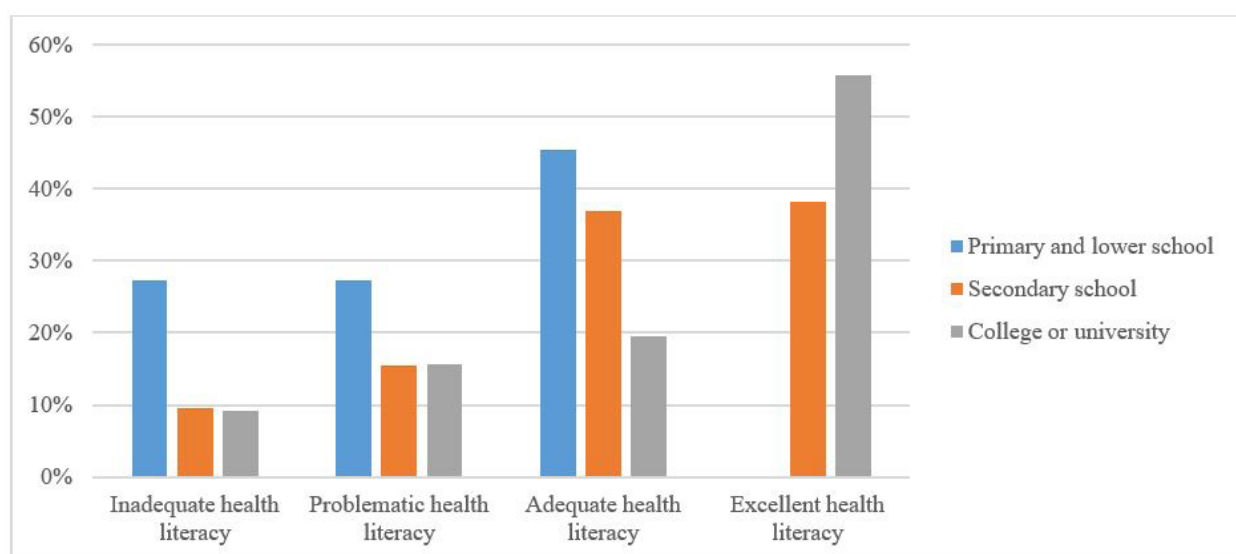
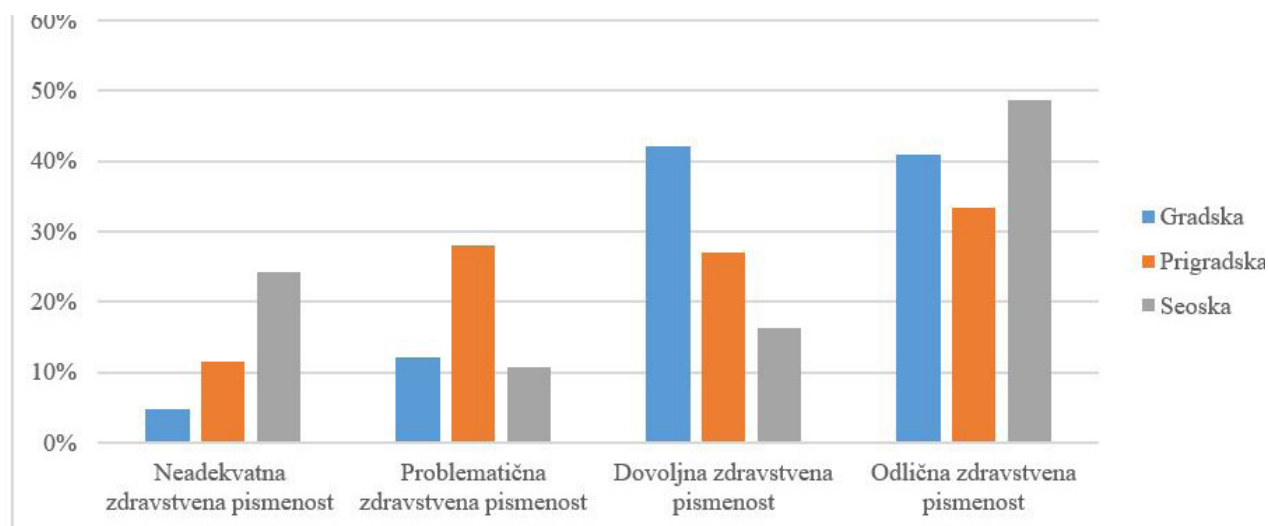
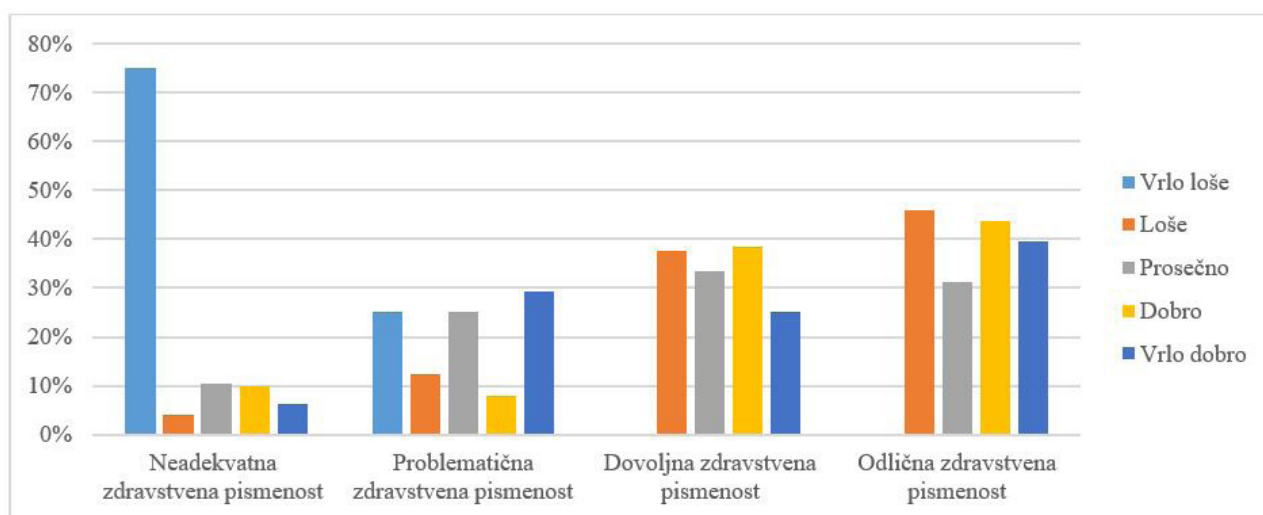


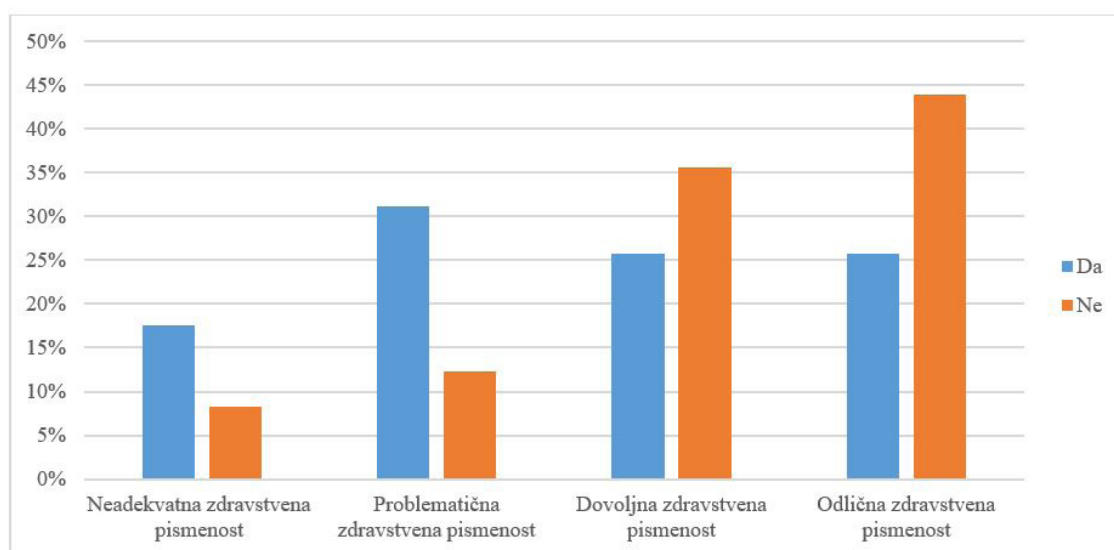
Figure 3. Distribution of respondents in a population of adult patients (n=400) who receive their health-care at the Health Center Pirot according to the level of health literacy and educational status.



Grafikon 4. Distribucija ispitanika u populaciji odraslih pacijenata (n=400) koji svoju zdravstvenu zaštitu ostvaruju u Domu zdravlja Pirot prema nivoou zdravstvene pismenosti i u odnosu na sredinu u kojoj žive



Grafikon 5. Distribucija ispitanika u populaciji odraslih pacijenata (n=400) koji svoju zdravstvenu zaštitu ostvaruju u Domu zdravlja Pirot prema nivoou zdravstvene pismenosti i u odnosu na ličnu procenu zdravlja



Grafikon 6. Distribucija ispitanika u populaciji odraslih pacijenata (n=400) koji svoju zdravstvenu zaštitu ostvaruju u Domu zdravlja Pirot prema nivoou zdravstvene pismenosti i u odnosu na prisustvo hronične bolesti

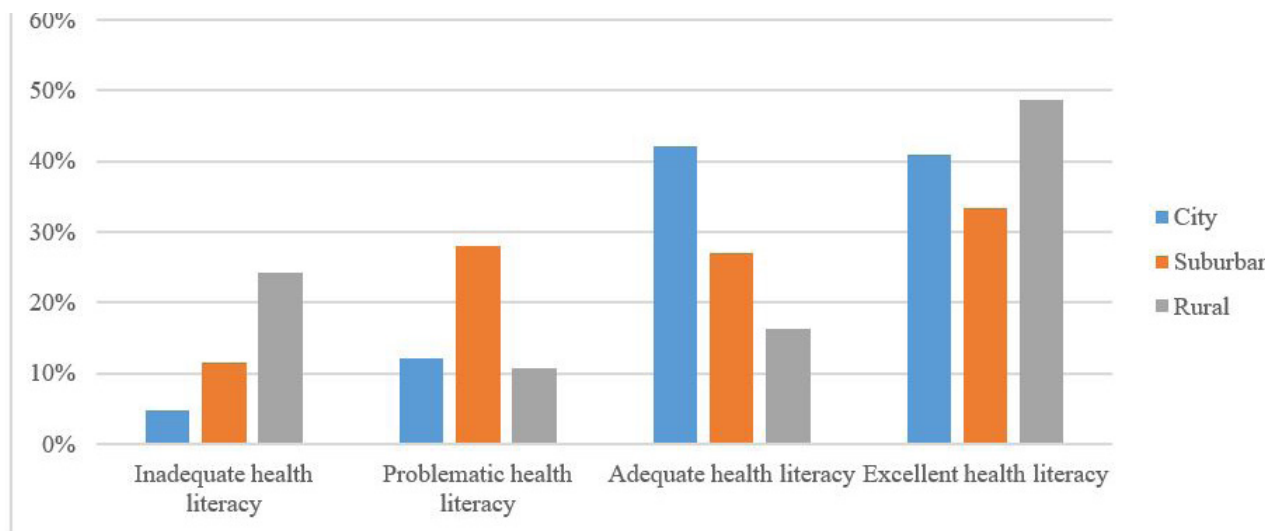


Figure 4. Distribution of respondents in a population of adult patients (n=400) who receive their health-care at the Health Center Pirot according to the level of health literacy and in relation to the environment in which they live

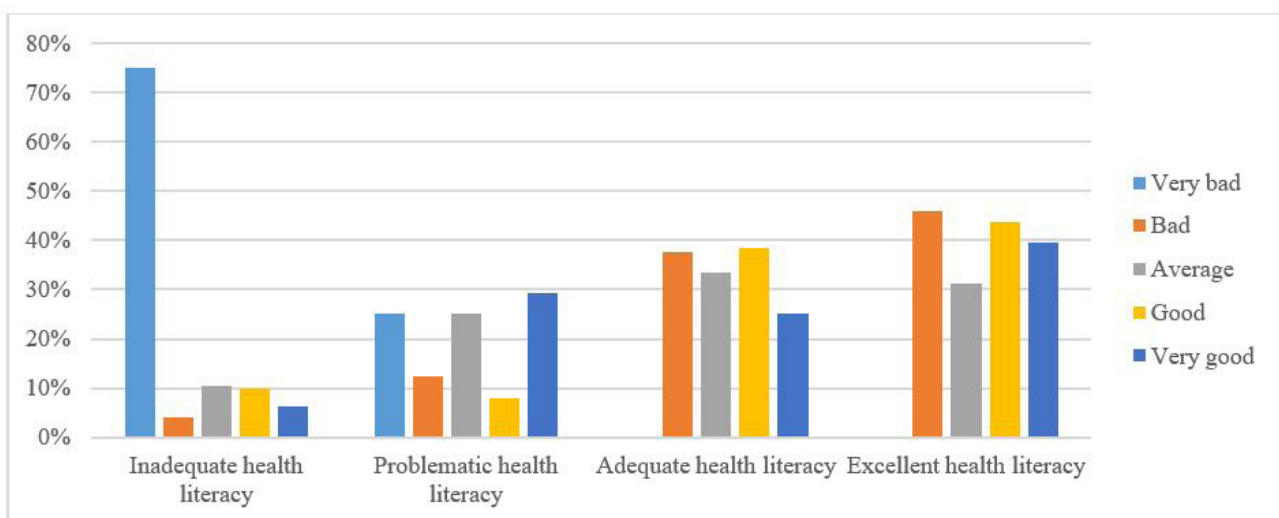


Figure 5. Distribution of respondents in a population of adult patients (n=400) who receive their healthcare at the Health Center Pirot according to the level of health literacy and health assessment

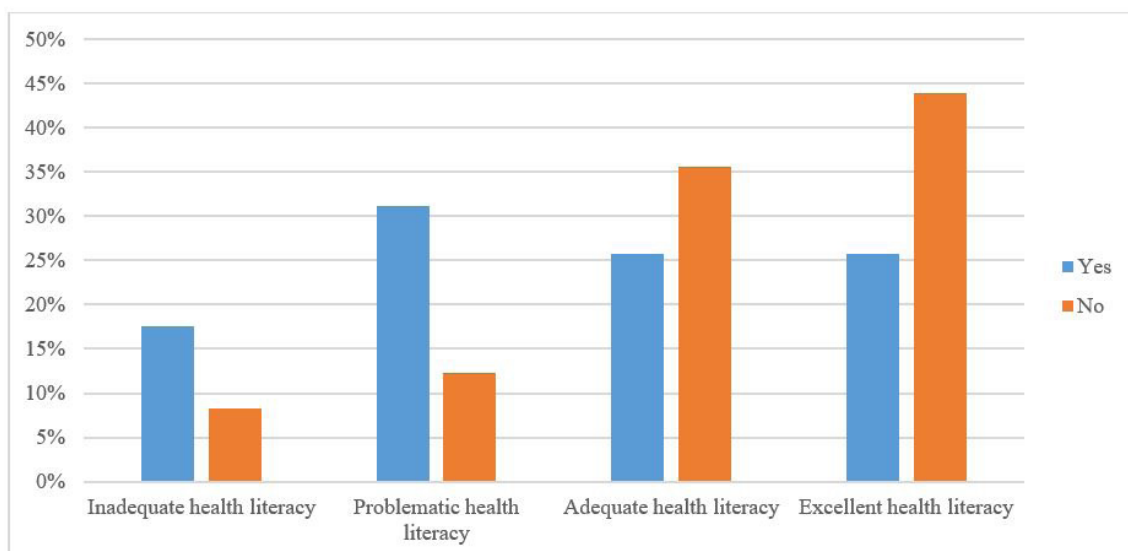


Figure 6. Distribution of respondents in the population of adult patients (n=400) who receive their health care at the Pirot Health Center according to the level of health literacy and in relation to the presence of a chronic disease

ispitanika, a 81,5% je bilo bez hroničnih oboljenja (tabela 2, grafikon 6). Dovoljna ili odlična zdravstvena pismenost je statistički značajno češće bila prisutna kod žena nego muškaraca, kod mlađih od 40 godina nego starijih od 40 godina, kod gradskog stanovništva nego lica koja žive u prigradskim i seoskim sredinama, kod lica u braku ili vanbračnoj zajednici nego kod neoženjenih/neudatih i udovaca/razvedenih, kod lica sa višom/viskom školom ili fakultetom u odnosu na niži stepen obrazovanja i kod zaposlenih nego kod nezaposlenih/penzionera. Nije uočena statistički značajna razlika u stepenu zdravstvene pismenosti u odnosu na socio-ekonomsko stanje koje su sami procenjivali ispitanici. Lica sa hroničnim bolestima, kao i lica sa subjektivnom procenom da imaju loše i veoma loše zdravstveno stanje, su značajno češće imala neodgovarajuću/problematičnu zdravstvenu pismenost nego lica sa dovoljnom/odličnom zdravstvenom pismenošću.

Diskusija

Naše istraživanje je identifikovalo socio-demografske faktore koji statistički značajno utiču na dovoljnu/odličnu zdravstvenu pismenost, poput starosti (mlađi od 40 godina), pola (žene), stepena obrazovanja (viša/visoka škola ili fakultet), mesta stanovanja (gradska sredina), bračnog statusa (život u braku/vanbračnoj zajednici) i zaposlenost (nezaposleni/penzioneri). Takođe, uočena je veza između materijalnog stanja ispitanika i njihove zdravstvene pismenosti (tj. osobe sa boljim socio-ekonomskim stanjem imale su viši nivo zdravstvene pismenosti), ali ona nije bila statistički značajna. Ovi rezultati podržavaju prethodna istraživanja i ukazuju na potrebu za ciljanim edukativnim intervencijama i zdravstvenim politikama koje će unaprediti zdravstvenu pismenost baš u identifikovanim grupama (8,9). Brojne studije, kao i naša, su ukazale da starije osobe, niže obrazovanje i loši socio-ekonomski uslovi su ključni faktori loše zdravstvene pismenosti (10-13). Međutim, neki istraživači ukazuju da lica sa istim stepenom obrazovanja mogu da pokazuju različit nivo znanja i veština, tako da ovaj indikator nije uvek dosledan pri proceni njegovog uticaja na stepen pismenosti (10,11). U mnogim istraživanjima, kao i u našem, žene imaju viši nivo zdravstvene pismenosti nego muškarci (12), što može da bude posledica činjenice da žene veću važnost pridaju zdravlju kao majke, negovateljice, učesnice različitih preven-

tivnih programa itd. (13). Parker i saradnici (14) su ustanovili da je neadekvatna zdravstvena pismenost češće zastupljena kod stanovništva koje živi u ruralnoj sredini. Sa druge strane, neka druga istraživanja su pokazala da je niži nivo zdravstvene pismenosti prisutan kod ispitanika iz gradske sredine (1). Analizirajući Američku nacionalnu studiju, baziranu na reprezentativnom uzorku, uočava se da ne postoji značajna razlika u zdravstvenoj pismenosti ispitanika ruralnih i urbanih naselja (4). Takođe, uočava se u brojnim studijama da se zdravstvena pismenost povećava sa poboljšanjem materijalnog statusa ispitanika (4-6).

U našem istraživanju ispitanici sa nekim hroničnim oboljenjem su značajno češće imali niži nivo zdravstvene pismenosti u odnosu na one koji ga nisu imali. Takođe, ispitanici koji su svoje zdravlje samoprocenili kao veoma dobro ili odlično imali su odličan nivo zdravstvene pismenosti, a oni koji su ga procenili kao loše ili veoma loše, skoro dve trećine, imalo je neadekvatnu zdravstvenu pismenost. Istraživanje u Australiji, koje je koristilo isti merni instrument kao u našem istraživanju, je pokazalo da ispitanici koji koriste usluge državnog zdravstvenog sistema imaju daleko niži nivo zdravstvene pismenosti u odnosu na ispitanike koji su koristili usluge privatnog zdravstvenog sistema (5,15). *Jessup* i saradnici (16), objašnjavaju da je prisustvo hroničnih bolesti u korelaciji sa povećanim rizikom od različitih mentalnih poremećaja, poput pojave anksioznosti i depresije, što može doprineti smanjenju mogućnosti kontrole zdravlja i ostvarivanju lične zdravstvene zaštite (7,8,17).

Sve je veći broj istraživanja koja se bave zdravstvenom pismenošću, jer je utvrđena veza između niske učestalosti zdravstvene pismenosti i lošijeg zdravlja, neadekvatnog zdravstvenog ponašanja i sve većeg korišćenja zdravstvenih usluga (18). Takođe, sve češće se sprovode populaciona istraživanja za analizu i praćenje učestalosti javljanja nedovoljne zdravstvene pismenosti, što pomaže u kreiranju javnozdravstvenih politika i pristupanju izradi odgovarajućih strategija. Međutim, upoređivanje zdravstvene pismenosti između zemalja je otežano jer se koriste različite definicije i instrumenti za procenu zdravstvene pismenosti. Generalno, niska zdravstvena pismenost vodi da osoba ne razume svoju bolest, otežano donosi odluke, informiše se o bolesti iz nerelevantnih izvora informacija, ne može da razume kako može da unapredi svoje zdravlje itd (19,20). Brojne

levels of education, in employed persons than in unemployed/retired persons. No statistically significant difference was observed in the level of health literacy in relation to the socio-economic condition assessed by respondents themselves. Persons with chronic diseases, as well as persons with the subjective assessment of having poor or very poor health status, significantly more often had inadequate/problematic health literacy than persons with sufficient/excellent health literacy.

Discussion

Our study has identified socio-demographic factors that have a statistically significant influence on sufficient/excellent health literacy, such as age (under the age of 40), gender (female), level of education (college/faculty), place of residence (urban areas), marital status (living in marriage/cohabiting) and employment (unemployed/retired). Also, the relationship between the marital status of respondents and their health literacy was observed, but it was not statistically significant (i.e. persons with better socio-economic state had a higher level of health literacy). These results support previous research and indicate the need for targeted educational interventions and health policies that will improve health literacy in the identified groups (8,9). Numerous studies, as well as our study, indicate that older people, lower education and lower socio-economic status are key factors in poor health literacy (10-13). However, some researchers point out that persons with the same level of education can show a different level of knowledge and skills, so this indicator is not always consistent when assessing its impact on the level of literacy (10,11). In numerous studies, as well as in ours, women have a higher level of health literacy than men (12), which may be a consequence of the fact that women attach more significance to health as mothers, caregivers, participants in various preventive programs, etc. (13). Parker et al. (14) found that inadequate health literacy is more common in the population living in rural areas. On the other hand, some other studies have shown that a lower level of health literacy is present in respondents from urban areas (1). By analyzing the American National Study, based on a representative sample, it has been observed that there is no significant difference in the health literacy of respondents from rural and urban areas (4). Also, it has been

observed in numerous studies that health literacy increases with the improvement of the material status of respondents (4-6).

In our study, respondents with some chronic diseases had a lower level of health literacy significantly more often in comparison to those who did not have it. Also, respondents who self-assessed their health as very good or excellent had an excellent level of health literacy, while those who assessed it as poor or very poor, almost two-thirds, had inadequate health literacy. A study, which was conducted in Australia and in which the same measuring instrument was used as in our study, showed that respondents who used the services of the state health system had a much lower level of health literacy compared to respondents who used the services of the private health system (5,15). Jessup et al. (16) explain that the presence of chronic diseases is correlated with an increased risk of various mental disorders, such as anxiety and depression, which can contribute to a reduced ability to control health and achieve personal health care (7,8,17).

There is an increasing number of studies dealing with health literacy, because the relationship between low frequency of health literacy and poor health, inadequate health behavior and increasing use of health services has been established (18). Also, population studies are increasingly being conducted to analyze and monitor the frequency of occurrence of insufficient health literacy, which helps in creating public health policies and appropriate strategies. However, the comparison of health literacy between different countries is difficult because different definitions and instruments are used to assess health literacy. Generally, low health literacy means that a person does not understand his illness, has difficulty making decisions, gets information about the illness from irrelevant sources of information, cannot understand how he can improve his health, etc. (19,20). Numerous studies have shown that persons with chronic diseases have difficulties when coping with the disease, as well as that they use health services more often (21). Also, worse disease outcomes occur more often in them. The above mentioned is related to the lack of knowledge about the disease, about treatment and possibilities of self-care. It is necessary for health workers to identify persons with inadequate health literacy in order

studije su pokazale da lica sa hroničnim bolestima imaju teškoće u upravljanju bolešću, kao i da češće koriste zdravstvene usluge (21). Takođe, kod njih se češće javljaju lošiji ishodi bolesti. Sve navedeno se dovodi u vezu sa nedostatkom znanja osoba o samoj bolesti, lečenju i mogućnostima samozbrinjavanja. Neophodno je da zdravstveni radnici identifikuju lica sa neadekvatnom zdravstvenom pismenošću u cilju prilagođavanja komunikacije sa njima (npr. proveru razumevanja datih uputstava, izbegavanje žargona i stručne terminologije itd.).

Upotreba validiranih instrumenata (alata) za procenu zdravstvene pismenosti daje dodatnu pouzdanost našim dobijenim rezultatima. Naše istraživanje ima nekoliko ograničenja. Prvo, uzorak ispitanika je pretežno obuhvatao osobe iz urbanih sredina, što može uticati na generalizaciju rezultata. Drugo, podaci o zdravstvenoj pismenosti su prikupljeni putem samoprocene, što može dovesti do subjektivnih pristrasnosti. Konačno, istraživanje nije uzelo u obzir sve moguće faktore koji mogu uticati na zdravstvenu pismenost, poput kulturnih i jezičkih barijera. Dalja istraživanja u ovoj oblasti su neophodna, posebno longitudinalno praćenje zdravstvene pismenosti kako bi se bolje razumeo njen uticaj na dugoročne zdravstvene ishode. Potrebno je istražiti i efikasnost različitih intervencija usmerenih na poboljšanje zdravstvene pismenosti, posebno u grupama sa niskim socio-ekonomskim statusom i u ruralnim zajednicama.

Zaključak

Aktivnosti vezane za unapređenje zdravstvene pismenosti u Pirotu treba sprovoditi među starijima, osobama iz ruralnih sredina, koje žive same, imaju niži stepen obrazovanja i koji su nezaposleni/penzioneri. kao i među muškarcima, licima sa hroničnim bolestima i onima koji loše ili veoma loše procenjuju svoj zdravstveni status. Neophodno je kontinuirano praćenje nivoa zdravstvene pismenosti u populaciji odraslih pacijenata i ispitivati faktore koji su povezani sa zdravstvenom pismenošću, te dobijene rezultate koristiti kao osnovu za kreiranje i implementaciju aktivnosti u cilju povećanja nivoa zdravstvene pismenosti, što bi doprinelo unapređenoj zdravljama.

Konflikt interesa

Autori su izjavili da nema konflikta interesa.

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to adapt communication with them (e.g. to check whether they understood given instructions, to avoid jargon and professional terminology, etc.).

The use of validated instruments (tools) for the assessment of health literacy gives additional reliability to our obtained results. Our study has several limitations. First, the sample of respondents included persons mainly from urban environments, which may affect the generalization of results. Second, data on health literacy were collected through self-assessment, which may lead to subjective bias. Finally, the study did not take into account all possible factors that may affect health literacy, such as cultural and language barriers. Further research in this field is necessary, especially longitudinal monitoring of health literacy in order to better understand its impact on long-term health outcomes. It is also necessary to investigate the efficiency of different interventions aimed at improving health literacy, especially in groups with low socio-economic status and in rural communities.

Conclusion

Activities related to the improvement of health literacy in Pirot should be carried out among the elderly, persons from rural areas, single persons, persons with lower levels of education, and among unemployed/retired, as well as among men, persons with chronic diseases and those who assess their health status as poor or very poor. It is necessary to continuously monitor the level of health literacy in the population of adult patients and examine factors related to health literacy, and use the obtained results as a basis for the creation and implementation of activities aimed at increasing the level of health literacy, which would contribute to the improvement of health.

Competing interests

The authors declared no competing interests.

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