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Sadržaj

RIJEČ UREDNIKA

Vrlo poštovani čitatelji,
pred Vama je šesnaesti broj elektroničkog časopisa Zdravstveni glasnik u kojem i ovaj put objavljujemo raznolike multidisciplinarne i interdiciplinarne radove iz oblasti zdravstva. Kao i uvijek i dalje se trudimo i nastojimo držati dostignutu razinu i kontinuirano radimo na tome da ona bude još viša. Do sada je radove u našem časopisu bilo moguće objavljivati na hrvatskom ili engleskom jeziku, a naš cilj nam je da u narednom periodu naš časopis bude isključivo na engleskom jeziku. Naš kontiuirani cilj je naša težnja i borba da podignemo razinu našeg časopisa i da ozbiljno "napadnemo" internetske baze podataka Scopus i WoS. U ovom broju imamo radove koje objavljuju naši sadašnji i bivši studenti i naravno naši nastavnici, a osim njihovih radova imamo i autore radova iz Republike Hrvatske.
Nadam se da ćete čitanjem Zdravstvenog glasnika imati koristi u proširenju i nadopuni svog znanja koje će Vam pomoći i u praktičnom radu i da ćete imati dodatni motiv da i Vaš rad bude publiciran u njemu. Zahvaljujem svima koji su doprinijeli izlasku ovog broja i ujedno pozivam sve zainteresirane da šalju svoje radove za naša slijedeća izdanja ali od sada isključivo na engleskom jeziku.

Mostar, studeni, 2022.

Dragan Babić

EDITORIAL

Dear readers,

You have before you the sixteenth issue of the Health Bulletin, where we once again publish a variety of multidisciplinary and interdisciplinary work from the field of healthcare. As always, we strive to keep the level reached and continuously work to make it better. Until now, it was possible to publish work in Croatian or English, but the goal is for our journal to be exclusively in English in the upcoming issues. Our continuous goal is our aspiration and struggle to raise the level of our journal and seriously "attack" the online databases Scopus and WoS. This issue brings work from our present and former students but also from our teachers, and in addition to their work, we have authors from the Republic of Croatia.

I hope that by reading the Health Bulletin, you will expand and complement your knowledge which will also help you in your practical work and give additional motive to publish your work in our journal. I would like to thank everyone who contributed to this issue and at the same time invite all those interested to send their work for future issues, but from now on exclusively in English.

Mostar, November 2022. *Dragan Babić*

RAZVOJ SESTRINSTVA KAO TEMELJNE ZNANOSTI

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Pojam znanost potječe od latinske riječi scientia, što znači znanje. Znanost je disciplina koja se bavi činjenicama koje su sustavno klasificirane i više ili manje shvaćene općim zakonima, a koje uključuju pouzdane metode za otkrivanje nove istine u vlastitoj domeni.

Sestrinska znanost je suštinsko znanje specifično za disciplinu, koje se fokusira na ljudsko zdravlje, artikulirano u okvirima i teorijama sestrinstva. Takvo znanje se generira različitim metodama istraživanja, a karakterizirano je deskriptivnim, eksplanatornim i prediktivnim načelima o životnom procesu ljudskih bića. Sestrinska znanost je u svojoj najosnovnijoj formi, proučavanje onoga što je sestrinska profesija, kojim svrhama služi društvu, koje su njene moralne odgovornosti i koje je znanje potrebno da predvidi i zadovolji svoje specifične perspektive i svrhe. Medicinske sestre znanstvenici su stručnjaci koji proučavaju fenomene od interesa za pripadnike discipline sestrinstva, a znanstvena istraživanja se smatraju sestrinskom znanošću ako koriste sestrinsku perspektivu i ako su usmjereni na promicanje ciljeva sestrinstva.

Bilo je i mišljenja da ne može postojati nešto poput sestrinske znanosti, a na temelju ideje da različite grane ljudskih i prirodnih znanosti imaju jedan specifičan i dobro definiran fokus za svoja istraživanja, dok sestrinstvo nema.

Smatra se da je Florence Nightingale prva koristila znastvenu metodologiju u sestrinstvu u vrijeme krimskog rata. Mislila je da loše okruženje, više od zadobivenih ratnih rana, ubija vojnike. Zbog toga je vodila pedantne bilješke i koristila se statistikom kako bi uvjerila vlasti da osiguraju potrebne resurse koji su u konačnici smanjili stopu smrtnosti.

Sestrinska znanost se bavi razvojem i usavršavanjem znanja potrebnog za razvoj dobre prakse što onda bitno utječe na napredak profesije, koja bitno doprinosi ljudskoj dobrobiti. Stoga je svrha sestrinske znanosti razvoj znanja, kohezija discipline, nastavak profesije i pružanje kritičnih društvenih usluga koje su razlog daljnjeg postojanja sestrinstva.

Ttri su područja razvoja znanja u sestrinskoj znanosti: načela i zakoni koji upravljaju životnim procesima, dobrobiti i optimalnim funkcioniranjem ljudskih bića, zatim oblici ljudskog ponašanja u interakciji s okolinom u kritičnim životnim situacijama i procesi koji utječu na pozitivne promjene u zdravstvenom statusu. Istraživanje medicinskih sestara koje stvara ili testira teorije iz drugih disciplina nije sestrinsko istraživanje, a rezultati takvih istraživanja grade bazu znanja drugih disciplina.

Praksa utemeljena na dokazima drugačije je definirana u sestrinstvu nego u medicini, osobito kada je vođena teorijom sestrinstva. Sestrinska praksa utemeljena na dokazima je savjesna, eksplicitna i razborita uporaba informacija izvedenih iz teorije, istraživanja temeljenih na donošenju odluka o pružanju skrbi pojedincima

ili skupinama pacijenata i u razmatranju individualnih potreba i sklonosti. Krajnji cilj je formuliranje smjernica za praksu. Dakle, iako su znanstvenici u sestrinstvu uključeni u razvoj i širenje znanja, oni su uvijek svjesni potrebe da svoj rad pretoče u praktične aktivnosti koje su usmjerene na poboljšanje kvalitete života onih ljudi koji traže usluge medicinskih sestara.

Medicinske sestre su u srcu većine zdravstvenih timova, igraju ključnu ulogu u promicanju zdravlja, prevenciji i liječenju bolesti. U posljednjih 50 godina vidljive su nevjerojatne promjene u znanosti o sestrinstvu koje su se dogodile zajedno s premještanjem obrazovanja za sestrinstvo u sveučilišne institucije. Stoga je vrlo važno da već na Fakultetu zdravstvenih studija potičemo znanstveni rad i identificiramo studente s posebnim znanstvenim potencijalom. Poseban optimizam u svrhu ostvarenja tih ciljeva i razvoj sestrinstva kao temeljne znanosti daje već sedam godina postojanja ovog časopisa namjenjenog objavljivanju najboljih radova sestrinske prakse. Za daljnje poticanje razvoja sestrinske znannosti u budućnosti bi bilo dobro poticati mlade znanstvenike da više usklađuju svoja istraživanja s okvirima i teorijama sestrinstva.

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VALIDATION OF THE IDENTITY STYLE INVENTORY AND THE PERSONAL GROWTH INITIATIVE SCALE

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ABSTRACT

Introduction: Various traits, such as the preferred identity style and the tendency to initiate personal development play an important role in the formation of a stable identity and the psychological well-being of an individual.
Objective: Validation of the Croatian translation of the Identity Style Inventory (ISI-5) and the Personal Growth Initiative Scale (PGIS-2).
Method: A total of 228 participants (28 male and 200 female) between the ages of 18 and 28 from Bosnia and Herzegovina, Croatia, Serbia and Montenegro participated in the research. The data was collected by filling out an online questionnaire in which the Identity Style Inventory and the Personal Growth Initiative Scale were applied.
Results: Confirmatory factor analysis confirmed the three-factor structure of the Identity Style Inventory (Information oriented, Normative oriented and Diffuse-avoidant identity style) and the four-factor structure of the Personal Growth Initiative Scale (Readiness to change, Planfulness, Using resources and Intentional behavior). At the same time, satisfactory psychometric characteristics of both measuring instruments were confirmed.
Conclusion: The adapted versions of the Identity Style Inventory and the Personal Growth Initiative Scale provide a good basis for further research on identity styles and personal growth initiative in the Bosnian/Croatian/Serbian speaking area.

Key words: identity statuses, identity styles, personal development

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INTRODUCTION

Personal identity is a personality structure resulting from identification with selected values, social roles and lifestyles. Marcia suggested different identity statuses based on two key criteria from Erikson's exploration and commitment theory: identity achievement (high identity commitment and high self-exploration), moratorium (low commitment, high self-exploration), foreclosure (high commitment, low self-exploration) and identity diffusion (low commitment, low self-exploration) (1). The status conception implies that identity is a resulting variable, that is, a certain stability of personality that is maintained over time. Therefore, numerous researchers have tried to focus directly on the process of identity formation. For example, Berzonsky and Barclay (2) hypothesized that identity statuses as defined by Marcia reflect three different ways of solving or avoiding conflicts and identity issues: an informational,a normative and a diffuse-avoidant orientation (2 - 4). Thus, identity style refers to relatively stable differences in the way individuals process identity-relevant information while participating in or managing to avoid the challenges of constructing, maintaining, and/or reconstructing a sense of identity (5). Young individuals with an information oriented identity style actively seek and evaluate information when solving their own identity problems or making decisions. It has been established that informational types root the definition of one's self in private components of the self such as personal values, goals and self-knowledge (6, 7). In contrast, individuals with a normative oriented style predominantly adopt the instructions and values of significant others, and conform to their expectations. People who use a normative identity orientation are assumed to be relatively more defensive and closed to feedback that could threaten important components of the self, such as personal values. Also, normative individuals define their identity in terms of collective elements of the self, such as expectations and demands of family, religion and other important reference groups (7). Finally, people with a diffuse-avoidant style tend to procrastinate and postpone confrontation with identity problems as long as possible, until situational consequences and/or rewards dictate a course of action (3, 8). Their definitions of self are often based on public components of self, such as popularity, reputation, and the impression they leave on others (6, 7).

In the explanation of the factors that facilitate optimal identity development, a relatively new construct called personal growth initiative (PGI) was highlighted (9 - 11). Robitschek (12) defined personal growth initiative as active and intentional engagement in the process of personal development. Personal growth initiative is an intra-individual change that is subjectively perceived as positive, which is intentional or purposeful in nature.These key aspects qualitatively distinguish personal growth initiative from unintentional changes (9). Namely, individuals with high personal growth initiative invest in this growth process in order to improve their sense of identity. PGI contains cognitive components, such as knowing how to change and believing that change is possible (dimensions Planfulness and Readiness for change), and behavioral components, such as taking the initiative to actually carry out the change process (dimensions Using resources and Intentional behavior). Therefore, in order for an individual to have high personal growth initiative, it is not enough to just notice a shift in their personal development over time (because it can follow withmaturation or be situationally determined), but it is necessary for them to be proactive in the process of change by deliberately seeking out or creating opportunities for personal development (10). Numerous studies have shown that individuals with high personal growth initiative usually have good

emotional, social and psychological well-being (12 - 15), and that they have fewer emotional and psychosocial problems (14). Also, Robitschek and Cook (10) found a positive correlationof personal growth initiative with career exploration and work identity. Consequently, individuals with a high propensity to initiate personal development are consciously motivated and directed towards the realization of their goals on a daily basis, and show a certain wisdom regarding the choice of directions and optimal roles in the future, developing comprehensive, feasible and rational action plans to achieve these specific goals (12, 16).

Measuring instruments for examining identity styles and personal growth initiative have never been applied in the Bosnian/Croatian/Serbian speaking area, and the need for their translation and validation is emphasized. Namely, the shortcomings of such research are largely a reflection of the lack of measuring instruments for assessing the specific subjective experiences of young individuals.

The objective of this research was to validate the Croatian translation of the Identity Style Inventory (5) and the Personal Growth Initiative Scale (17).

METHOD

Participants and procedure

A total of 228 young individuals (28 male and 200 female) from Bosnia and Herzegovina (61.8%), Croatia (20.6%), Serbia (14.9%) and Montenegro (2.6%) participated in the research. The age range was 18 to 28 years, and the average age of the participants was 23 years. Students made up 62.7% of the sample, employed individuals 27.6% and unemployed 9.6%. Participation in the research was voluntary and anonymous, in accordance with the research ethics code. Data were collected by filling out an online questionnaire that was advertised through various social media channels.

Measuring instruments

The first part of the questionnaire included questions about sociodemographic data that were constructed for the purposes of this research. Then the Identity Style Inventory or ISI-5 (5) was applied, which distinguishes three identity styles: Information oriented, Normative oriented and Diffuse-avoidant. The entire inventory consists of 27 items (9 items for each subscale). Furthermore, the Personal Growth Initiative Scale or PGIS-2 (17) was applied, which consists of 16 items and includes the participants' assessments on the subscales Readiness for change (4 items), Planfulness (5 items), Using resources (3 items) and Intentional behavior (4 items). Both questionnaires are of the Likert type, and the participants indicated the degree of agreement with each individual statement with values from 1 to 5 (1 – *completely disagree*; 5 – *completely agree*).

Statistical analyses

The data collected by the research were analyzed using statistical software SPSS Statistics 25 (IBM Corp., Armonk, NY, USA) and STATISTICA 7 (StatSoft Inc., Tulsa, OK, USA).

In order to verify the factor structure, a confirmatory factor analysis (CFA) of the results on the ISI-5 was conducted, in which the factors Informational, Normative and Diffuse-avoidant identity style represented latent variables. Due to the theoretically assumed connections between individual identity styles, in addition to the model in which all factors were treated as mutually independent, an ISI-5 model in which all factors were treated as interconnected was also checked. A CFA was then conducted on the PGIS-2 scores, with the factors Readiness for change, Planfulness, Using resources, and Intentional behavior representing latent variables. Since the Readiness for change and Planfulness dimensions are defined as cognitive components of the PGIS-2, and Using resources and Intentional behavior as behavioral, another CFA was conducted to examine the possible better fit of the two-dimensional model for the

PGIS-2. The ratio of Chi-square values and degrees of freedom, RMSEA (Root Mean Square Error Approximation), SRMR (Standardized Root Mean Square), GFI (Goodness of Fit Index), AGFI (Adjusted Goodness of Fit Index) and CFI (Comparative Fit Index)were used as indicators of model fit. The acceptance criteria of the model fit were as follows: $\chi^2/df \leq 5$; RMSEA and SRMR ≤ 0.10; GFI ≥ 0.85; AGFI ≥ 0.80; CFI ≥ 0.90 (18 - 20). Latent factor intercorrelations and standardized factor loadings were calculated, taking into account the recommended criterion for minimum factor loading of 0.4 (21). The reliability analysis was performed by calculating the Cronbach alpha coefficients of all factors, while the discriminative validity was analyzed by reviewing the range of responses on individual factors and indicators of normality of distributions. The discriminative validity of individual factors was additionally analyzed by examining the correlations of items with the associated factor scales. Satisfactory discriminative validity is manifested in homogeneity (items of the associated factor should correlate highly with the overall result, and low with the other factors). The greater the difference, the greater the discriminative validity (22). Finally, the basic descriptive parameters of the results on all factor scales were calculated.

RESULTS

Confirmatory factor analysis of the Identity Style Inventory and the Personal Growth Initiative Scale

The results of the conducted CFA indicate partial fit between the hypothesized models and the data. By reviewing the indices of fit for different models (Table 1), it was concluded that the three-factor model for ISI-5 with correlated factors and the four-factor model for PGIS-2 fit the data best. As a result, it was decided to keep these two models in further analyses.

Table 1. Indices of model fit

	Critera of model fit*	Correlated three factor ISI-5 model	Uncorrelated three factor ISI-5 model	Four factor PGIS-2 model	Two factor PGIS-2 model
χ^2 (df)	p<0.01	778.501 (321)	817.872 (324)	359.368 (98)	489.415 (103)
χ^2 / df	≤ 5	2.43	2.52	3.67	4.75
RMSEA	≤ 0.10	0.089	0.091	0.111	0.119
SRMR	≤ 0.10	0.099	0.114	0.128	0.089
GFI	≥ 0.85	0.773	0.765	0.830	0.807
AGFI	≥ 0.80	0.733	0.726	0.763	0.746
CFI	≥ 0.90	0.669	0.642	0.871	0.809

Note: *criteria by Sun, (18); Schreiber et al. (19); Hooper et al. (20)

The results of correlation analyzes indicate a statistically significant positive correlation between the Diffuse-avoidant and Normative oriented identity style, while the correlation between other identity styles was not significant (Table 2). All components of personal growth initiative were significantly positively correlated with each other (Table 3).

Table 2. Intercorrelations of latent factors on the Identity Style Inventory

	Diffuse	Informational	Normative
Diffuse	-	-.043	.261**
Informational		-	-.057
Normative			-

Note: **p<.01

Table 3.Intercorrelations of latent factors on the Personal Growth Initiative Scale

	Readiness for change	Planfulness	Using resources	Intentional behavior
Readiness for change	-	.748**	.468**	.660**
Planfulness		-	.455**	.625**
Using resources			-	.488**
Intentional behavior				-

Note: **p<.01

Standardized factor loadings of individual indicators with associated latent constructs for the ISI-5 are, except for three items, statistically significant (Table 4). Of the items with significant factor loadings, six items had loadings significantly below 0.4, which would imply their exclusion. All item factor loadings for PGIS-2 were statistically significant and, except for one item, were of appropriate size (Table 5). Nevertheless, it was decided to keep all items in further analyses, since they all had statistically significant correlations with the total results on the associated factors and were of satisfactory size, as well as due to the fact that these scales were applied to a convenient and small sample of young individuals.

Table 4. Standardized factor loadings of items with associated factors on the Identity Style Inventory

Items	Diffuse	Informational	Normative
Trudim se ne razmišljati o problemima niti se baviti njima koliko god mogu. (I try not to think about or deal with problems as long as I can.)	.072		
Kada moram donijeti odluku, pokušavam čekati što je dulje moguće kako bih vidio/vidjela što će se dogoditi. (When I have to make a decision, I try to wait as long as possible in order to see what will happen.)	.614**		
Moji se životni planovi mijenjaju kad god razgovaram s različitim ljudima. (My life plans tend to change whenever I talk to different people.)	.568**		
Nisam siguran/na kamo idem u svom životu; pretpostavljam da će se stvari riješiti same od sebe. (I'm not sure where I'm heading in my life; I guess things will work themselves out.)	.680**		
Ne isplati se brinuti o vrijednostima unaprijed; odlučujem o stvarima kada se dogode. (It doesn't pay to worry about values in advance; I decide things as they happen.)	-.018		
Kada se pojave osobni problemi, pokušavam odgoditi djelovanje što je dulje moguće. (When personal problems arise, I try to delay acting as long as	.699**		

possible.)			
Pokušavam izbjegavati osobne situacije koje od mene zahtijevaju da puno razmišljam i da se sam/a s njima nosim. (I try to avoid personal situations that require me to think a lot and deal with them on my own.)	.520**		
Sada baš i ne razmišljam o svojoj budućnosti, još je daleko. (I am not really thinking about my future now, it is still a long way off.)	.209**		
Osjećaj "tko sam ja" se mijenja od situacije do situacije. (Who I am changes from situation to situation.)	.586**		
Kad se suočim sa životnom odlukom, pokušavam analizirati situaciju kako bih je razumio/razumjela. (When facing a life decision, I try to analyze the situation in order to understand it.)		.615**	
Probleme u svom životu rješavam aktivno razmišljajući o njima. (I handle problems in my life by actively reflecting on them.)		.200**	
Prilikom donošenja važnih odluka volim imati što više informacija. (When making important decisions, I like to have as much information as possible.)		.363**	
Povremeno razmišljam i ispitujem logičku dosljednost između mojih vrijednosti i životnih ciljeva. (I pedodically think about and examine the logical consistency between my values and life goals.)		.277**	
Provodim puno vremena čitajući ili razgovarajući s drugima pokušavajući razviti skup vrijednosti koji za mene ima smisla. (I spend a lot of time reading or talking to others trying to develop a set of values that makes sense to me.)		.474**	
Kada donosim važne odluke, volim provoditi vrijeme razmišljajući o svojim mogućnostima. (When making important decisions, I like to spend time thinking about my options.)		.513**	
Kad se suočim sa životnom odlukom, uzimam u obzir različita gledišta prije nego što donesem odluku. (When facing a life decision, I take into account different points of view before making a choice.)		.628**	
Razgovor s drugima pomaže mi istražiti svoja osobna uvjerenja. (Talking to others helps me explore my personal beliefs.)		.417**	
Važno mi je dobiti i procijeniti informacije iz raznih izvora prije nego što donesem važne životne odluke. (It is important for me to obtain and evaluate information frrom a variety of sources before I make important life decisions.)		.618**	
Mislim da je bolje usvojiti čvrsta uvjerenja nego biti otvorenog uma. (I think it is better to adopt a firm set of beliefs than to be open-minded.)			.246**
Nikad ne dovodim u pitanje što želim raditi u životu jer sam sklon/a slijediti ono što važni ljudi očekuju od mene. (I never question what I want to do with my life because I tend to follow what important people expect me to do.)			.581**
Radije se bavim situacijama u kojima se mogu osloniti na društvene norme i standarde. (I prefer to deal with situations in which I can rely on social norms and standards.)			.381**
Automatski usvajam i slijedim vrijednosti uz koje sam odgajan/a. (I automatically adopt and follow the values I was brought up with.)			.429**
Mislim da je bolje držati se čvrstih vrijednosti nego razmatrati nove vrijednosti. (I think it's better to hold on to fixed values rather than to consider altemative value systems.)			.504**
Kada drugi kažu nešto što dovodi u pitanje moje osobne vrijednosti ili			.178**

uvjerenja, automatski zanemarujem ono što imaju za reći. (When others say something that challenges my personal values or beliefs, I automatically disregard what they have to say.)	
Kada donosim odluku o svojoj budućnosti, automatski pratim što bliski prijatelji ili rodbina očekuju od mene. (When I make a decision about my future, I automatically follow what close fdends or relatives expect from me.)	.820**
Nastojim ostvariti ciljeve koje moja obitelj i prijatelji imaju za mene. (I strive to achieve the goals that my family and friends hold for me.)	.838**
Oduvijek sam znao/la u što vjerujem i u što ne vjerujem; nikada zapravo ne sumnjam u svoja uvjerenja. (I have always known what I believe and don't believe; I never really have doubts about my beliefs.)	.021

Note: **p<.01

Table 5. Standardized factor loadings of items with associated factors on the Personal Growth Initiative Scale

Items	Readiness for change	Planfulness	Using resources	Intentional behavior
Shvaćam što moram promijeniti na sebi. (I figure out what I need to change about myself.)	.631**			
Spreman/na sam napraviti određene promjene na sebi. (I can tell when I am ready to make specific changes in myself.)	.545**			
Znam kada trebam napraviti određene promjene na sebi. (I know when I need to make a specific change in myself.)	.788**			
Znam kada je vrijeme da promijenim određene stvari na sebi. (I know when it's time to change specific things about myself.)	.781**			
Kada pokušavam promijeniti sebe, napravim realan plan za svoj osobni razvoj. (When I try to change myself, I make a realistic plan for my personal growth.)		.667**		
Znam kako napraviti realan plan kako bih promijenio/la sebe. (I know how to make a realistic plan in order to change myself.)		.804**		
Znam korake koje mogu poduzeti kako bih napravio/la namjerne promjene na sebi. (I know steps I can take to make intentional changes in myself.)		.727**		
Znam kako postaviti realne ciljeve da bih napravio/la promjene na sebi. (I know how to set realistic goals to make changes in myself.)		.844**		
Postavljam realne ciljeve za ono što želim promijeniti na sebi. (I set realistic goals for what I want to change about myself.)		.692**		
Koristim različite izvore kada se pokušavam razvijati. (I use resources when I try to grow.)			.267**	
Tražim pomoć kada se pokušavam promijeniti. (I ask for help when I try to change myself.)			.859**	
Aktivno tražim pomoć kada se pokušavam promijeniti. (I actively seek out help when I try to change myself.)			.922**	

Neprestano pokušavam rasti kao osoba. (I am constantly trying to grow as a person.)	.700**
Koristim svaku priliku za razvoj. (I take every opportunity to grow as it comes up.)	.820**
Aktivno radim na poboljšanju sebe. (I actively work to improve myself.)	.859**
Tražim prilike za rast kao osoba. (I look for opportunities to grow as a person.)	.774**

Note: **p<.01

Reliability analysis

Cronbach alpha reliabilities of the subscales for the ISI-5 are .700 for Diffuse-avoidant, .686 for Information oriented and .738 for Normative oriented identity style. The reliabilities of the subscales for the PGIS-2 are .775 for Readiness for change, .860 for Planfulness, .697 for Using resources and .868 for Intentional behavior. According to reports on acceptable values of the Cronbach alpha coefficient in the range from .70 to .95 (23 - 26), the coefficients obtained in the current research can be considered satisfactory, taking into account that the reliability coefficients for Information oriented identity style and Usingresources are close to the limit value. Additionally, the reliability analysis shows that eliminating several items would increase the reliability of individual subscales of ISI-5 and PGIS-2. It is important to mention that all subscales of both questionnaires are of satisfactory reliability when all associated items are taken into the analysis and, although the exclusion of individual items would slightly increase their reliability, it was decided to keep the original structure of the questionnaire.

Discriminability analysis and basic descriptive parameters

By reviewing the obtained ranges of results on all subscales (Table 7), it was concluded that the results of all subscales on the PGIS-2 cover 100% of the theoretical range, which points to the excellent sensitivity of these subscales. In contrast, scores on the ISI-5 cover 72% of the theoretical range for the Diffuse-avoidant, 50% for Information oriented, and 75% for Normative oriented identity style. It can be concluded that the sensitivity of the subscales is acceptable, except for the Information oriented identity style, the sensitivity of which would be desirable to check on a larger and more representative sample of young individuals.

The discriminative validity of individual factors on the ISI-5 and PGIS-2 was additionally analyzed by examining the correlations of items with the associated factor scales (Table 6).Although external correlations on PGIS-2 are relatively high, the ranges of correlation coefficients of items with the associated factors (homogeneity) are larger than the range of correlation coefficients of items with other factors (external correlation), which suggests good discriminative validity of the factors (Table 6).

Table 6. Discriminative validity of individual factors

	Factor	Number of items	Range (smallest-largest) of correlation coefficients	
			Homogenity*	External correlation**
Identity Style Inventory	Diffuse	9	.252-.725	.002-.383
	Informational	9	.394-.621	.004-.207
	Normative	9	.384-.716	.016-.376
Personal Growth Initiative Scale	Readiness for change	4	.653-.851	.317-.670
	Planfulness	5	.753-.862	.327-.663
	Using resources	3	.525-.904	.280-.618
	Intentional behavior	4	.799-.882	.379-.574

Note: *Range of correlations of individual items with the associated factor; **Range of correlations of individual items with other factors

Table 7 shows the descriptive parameters of individual subscales of the Identity Style Inventory and the Personal Growth Initiative Scale. The distributions of all subscales on the ISI-5 and PGIS-5 deviated significantly from normality on the Kolmogorov-Smirnov test, but other indicators of normality of distribution were taken into account as indicators of discriminability, such as coefficients of skewness and kurtosis, which were in a satisfactory range for all subscales i.e. skewness index <3 and kurtosis index <10 (27).

Table 7. Descriptive parameters of the subscales of the Identity Style Inventory and the Personal Growth Initiative Scale (N=228)

	Subscales	n	M	SD	Range of results	Kolmogorov-Smirnov	Skewness (st. error)	Kurtosis (st. error)
Identity Style Inventory	Diffuse-avoidant	9	21.193	5.709	9-35	.084**	.106 (.161)	-.685 (.321)
	Information oriented	9	37.513	4.124	27-45	.078**	-.332 (.161)	-.333 (.321)
	Normative oriented	9	22.250	5.750	9-36	.095**	.048 (.161)	-.485 (.321)
Personal Growth Initiative Scale	Readiness for change	4	16.430	2.778	4-20	.126**	-.873 (.161)	1.307 (.321)
	Planfluness	5	18.259	4.471	5-25	.092**	-.576 (.161)	-.150 (.321)
	Using resources	3	10.487	2.780	3-15	.091**	-.222 (.161)	-.587 (.321)
	Intentional behavior	4	16.829	3.074	4-20	.151**	-1.117 (.161)	1.873 (.321)

Note: n-number of items; M-mean; SD-standard deviation; st. error.-standard error; **p<.01

DISCUSSION

The results of the factor analysis indicate consistency of the factor structure, as stated by the authors of the original questionnaires. The three-factor structure for the ISI-5 and the four-factor structure for the PGIS-2 were confirmed. It was expected that identity styles would manifest as three different ways of solving and/or avoiding identity-related conflicts (informational, normative and diffuse-avoidant orientation), while personal growth initiative was expected to manifest itself through cognitive components such as readiness for change and creating plans for personal development, and through behavioral components such as using different sources of support and initiating intentional behavior in the direction of actually implementing the change process. The results of this research indicate satisfactory psychometric characteristics of both measuring instruments.

By reviewing the individual fit indices of the selected models for the ISI-5 and PGIS-2, it can be concluded that some indicate a good fit of the model with the data (Chi-square divided by the degrees of freedom for both models, and SRMR and RMSEA for the ISI-5 model), while others are predominantly on the border of acceptability or slightly below/above the recommended values (especially the SRMR, RMSEA, GFI, AGFI and CFI indices for the PGIS-2 model). It should be noted that not a single extreme deviation of the mentioned indices from the criteria of model fit was observed (Table 1). Namely, it is possible that the relatively small and convenient sample of young individuals in this study influenced the size of the indicated model fit indices, as well as some other factors such as the type of data, normality of data distribution, method of parameter estimation, and the complexity of the model (28). The authors of the original questionnaires reported the Chi-square test divided by the degrees of freedom, SRMR and RMSEA values in the confirmatory factor analysis (5, 17). The values of these indices in the original research were excellent for ISI-5, but for PGIS-2, according to the authors of the scale, they implied "*acceptable(but not good) model fit*" (17). As a result, it was concluded that the factor structure of the Identity Style Inventory, as well as the Personal Growth Initiative Scale, partially match the results of the authors of the mentioned scales.

During the psychometric validation of the two measuring instruments, standardized factor loadings and reliability indices would be increased by eliminating individual items. Some of the items that had insignificant and/or low factor loadings also had the lowest factor loadings in the author's original questionnaires, although they were all statistically significant. The reason for this is probably that some of the items include the examination of several independent experiences that need to be evaluated, for instance, "*I try not to think about or deal with problems as much as I can*." All the items that had insignificant factor loadings were formulated similarly, i.e. in a way that they examine independent experiences and states that can be examined separately, which can be considered a potential shortcoming of the measuring instrument. It should also be noted that moderate correlations are expected among individual identity styles. According to Berzonsky (8), active processing of identity-relevant information, which is a characteristic of the Information oriented identity style, should be negatively related to the Diffuse-avoidant style. Then, since normative orientation could stimulate the processing of information received from significant others, its positive association with Information oriented identity style is possible. By examining the intercorrelations of the latent factors, it was noticed that their relationships do not suit the expected direction (Table 2). Namely, a positive correlation between the Normative oriented and the Diffuse-avoidant style was obtained, while the relationship between the other identity styles was not statistically significant.It is interesting to note that the same result regarding the

connection between the normative and diffuse style was obtained on a sample of students in Italy (29). The explanation for these resultscan be found in the fact that low self-exploration is a feature of both mentioned identity styles, as well as a feature of their eponymous identity statuses (1). What differentiates them is the level of identity commitment, with normative types characterized by high commitment, while diffuse types are characterized by low commitment. The positive association of these styles and their common lack of self-exploration provokes thought that normative orientation may be underpinned by similar deficits in the processing of identity-important information as the diffuse-avoidant orientation. The results of some studies support this assumption, showing that both normative and diffuse identity individuals exclude relevant information due to a limited focus of attention (30) and that both orientations are associated with an approach to problem solving that is directed by others (31). However, in normative types, this deficit could be compensated by automatically identifying with the goals, values and lifestyle of significant others, whereby normative individuals actually ensure certain identity commitment without having to go through a moratorium crisis and the emotional effort associated with it, nor expend cognitive resources due to dealing with issues of identity.

As expected, all factors on the PGIS-2 are significantly and positively correlated with each other (Table 3) as stated by the original authors of the scale (17). Although it is not possible to conclude about causal relationships, cognitive components probably facilitate behavioral ones and vice versa, thus assuming a reciprocal relationship between these variables.

Reliability and validity indicators indicate good psychometric properties of both measuring instruments. Due to the aforementioned shortcomings of the convenient sample and the first application of these instruments in the Croatian language, it was decided to keep all items in the analysis as the authors suggest. Although the results of the analyzes were satisfactory for both instruments despite these shortcomings, the need to verify their characteristics on larger samples is highlighted. Nevertheless, it should be noted that the psychometric characteristics of the ISI-5 and PGIS-2 are relatively good and have a good basis for further research on identity formation processes and personal growth initiative, thus enabling future research on identity styles and personal growth initiative in the Bosnian/Croatian/Serbian speaking area. The validation of these measuring instruments is an important step in the realization of such research.

CONCLUSION

The three-factor structure of the Identity Style Inventory and the four-factor structure of the Personal Growth Initiative Scale were confirmed, as well as the satisfactory psychometric characteristics of both measuring instruments. Thus, the adapted versions of the ISI-5 and PGIS-2 provide a good basis for further research on identity styles and personal growth initiative in the Bosnian/Croatian/Serbian speaking area.

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VALIDACIJA INVENTARA STILOVA IDENTITETA I SKALE INICIRANJA OSOBNOG RAZVOJA

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SAŽETAK

Uvod: Različite osobine, poput preferiranog stila identiteta i sklonosti iniciranja osobnog razvoja imaju važnu ulogu u formiranju stabilnog identiteta i psihološkoj dobrobiti pojedinca.
Cilj istraživanja: Validacija hrvatskog prijevoda Inventara stilova identiteta (ISI-5) i Skale iniciranja osobnog razvoja (PGIS-2).
Metoda: U istraživanju je sudjelovalo ukupno 228 mladih osoba (28 mladića i 200 djevojaka) u dobi od 18 do 28 godina s područja Bosne i Hercegovine, Hrvatske, Srbije i Crne Gore. Podaci su prikupljeni ispunjavanjem online upitnika kojim su primijenjeni Inventar stilova identiteta i Skala iniciranja osobnog razvoja.
Rezultati: Konfirmatornom faktorskom analizom je potvrđena trofaktorska struktura Inventara stilova identiteta (Informacijski orijentirani, Normativno orijentirani i Difuzno izbjegavajući stil identiteta) i četverofaktorska struktura Skale iniciranja osobnog razvoja (Spremnost na promjenu, Planiranost, Korištenje izvora podrške i Namjerno ponašanje). Ujedno su potvrđene zadovoljavajuće psihometrijske karakteristike oba mjerna instrumenta.
Zaključak: Adaptirane verzije Inventara stilova identiteta i Skale iniciranja osobnog razvoja pružaju dobru podlogu za daljnja istraživanja o stilovima identiteta i iniciranju osobnog razvoja na B/H/S govornom području.

Ključne riječi: statusi identiteta, stilovi identiteta, osobni razvoj

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ZNAČAJ VREMENA OD POČETKA BOLI DO DOLASKA U BOLNICU NAKON SRČANOG UDARA NA PODRUČJU HERCEGOVINE

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SAŽETAK

Uvod: Ishemijska Bolest srca (IBS) je vodeći uzrok smrti u svijetu. Može se manifestirati kao stabilna i nestabilna angina pektoris, akutni infarkt miokarda (AIM), funkcionalno zatajenje srca, iznenadna srčana smrt. Svake godine u svijetu od posljedica IBS-a umre oko 17 milijuna ljudi, uključujući 5milijuna ljudi godišnje u Europi. Za procjenu učinkovitosti zdravstvenog sustava važno je ustanoviti koliko vrijeme od početka boli do dolaska u jedinicu intenzivnog liječenja (JIL) ovisi o udaljenosti bolesnikova mjesta boravka od Mostara, osobito u udaljenim područjima Hercegovačko neretvanske županije/kantona (HNŽ/K) i Zapadno hercegovačke županije/kantona (ZHŽ/K).
Cilj istraživanja: Utvrditi značaj vremena od početka boli do dolaska u bolnicu nakon srčanog udara na području Hercegovine.
Rezultati: Istraživanje je obuhvatilo ukupno 95 bolesnika s AIM-a i to infarkt miokarda s ST elevacijom (STEMI) i infarkt miokarda bez ST elevacije (NSTEMI) koji su transportirani u vozilima HMP i primljeni u Jedinicu intenzivnog liječenja Sveučilišne Kliničke bolnice Mostar. Bolesnici s AIM-a iz Mostara i bliže okolice (HNŽ/K<15km) ranije su pozivali hitne medicinske pomoći (HMP) od bolesnika koji žive na udaljenijim područjima, samim tim i transport od HMP do bolnice tih bolesnika je bio znatno brži. Vrijeme mjereno od dolaska HMP/obiteljskog liječnika do dolaska u bolnicu pokazalo je značajnu statističku razliku između dvije Hercegovačke regije. Pretpostavka je da ljudi višeg stupnja obrazovanja mogu prije prepoznati simptome te da prije pozovu liječnika što se i u ovom istraživanju statistički značajno pokazalo.
Zaključak:Vrijeme proteklo od početka boli do hospitalizacije bolesnika s akutnim infarktom miokarda u sve tri ispitivane regije je unutar očekivanog predloženog vremena što zovemo zlatni sat.

Ključne riječi: Vrijeme, bol, akutni infarkt miokarda

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UVOD

Ishemijska Bolest srca (IBS) je vodeći uzrok smrti u svijetu. Može se manifestirati kao stabilna i nestabilna angina pektoris, akutni infarkt miokarda (AIM), funkcionalno zatajenje srca, iznenadna srčana smrt. Svake godine u svijetu od posljedica IBS-a umre oko 17 milijuna ljudi, uključujući 5milijuna ljudi godišnje u Europi (1).

Akutni infarkt miokarda (AIM) najčešće je posljedica akutne okluzije koronarne arterije, ali može nastati van svake mehaničke okluzije koronarne arterije, kao posljedica brutalnog pada koronarnog protoka ili znatnog smanjenja količine kisika u krvi koji protječe kroz koronarne arterije što nastaje iz različitih razloga (2). Infarktom miokarda predstavlja nekrozu miokarda, uzrokovanu naglim smanjenjem ili potpunim prekidom koronarnog protoka. To je najčešća komplikacija ishemijske bolesti srca (3). Za procjenu učinkovitosti zdravstvenog sustava važno je ustanoviti koliko vrijeme od početka boli do dolaska u jedinicu intenzivnog liječenja (JIL) ovisi o udaljenosti bolesnikova mjesta boravka od Mostara, osobito u udaljenim područjima HNŽ/K-a i ZHŽ/K-a. Cilj ovog istraživanja je bio utvrditi značaj vremena od početka boli do dolaska u bolnicu nakon srčanog udara na području Hercegovine.

ISPITANICI I METODE

U istraživanju su uključeni svi bolesnici s akutnim infarktom miokarda (AIM-a), koji su liječeni u Sveučilišne kliničke bolnice (SKB) Mostar u periodu od 1.lipnja do 31. prosinca 2011.godine. Provedba istraživanja je bila u Klinici za unutarnje bolesti sa centrom za dijalizu SKB Mostar, Hercegovačko-neretvanske županije/kantona, Bosna i Hercegovina.

U ovom kliničkom ispitivanju obuhvaćeni su bolesnici iznad 18 godina, oba spola koji su imali jasne kliničke, elektrokardiografske i biokemijske znakove AIM-a po kriterijima Europskog kardiološkog društva (4, 5) a bili su hospitalizirani u Jedinici intenzivnogliječenja Sveučilišne Kliničke bolnice Mostar. U radu je primijenjena metoda anketiranja bolesnika, koji su za potrebe provedbe postupka istraživanja popunjavali pripremljeni upitnik, sačinjen od dva dijela. Upitnik je osobno pripremljen i sačinjen iz dva dijela. Istraživanje je bilo dragovoljno i anonimno.

S obzirom na mjesto stanovanja bolesnici su podijeljeni u tri skupine:

1. Bolesnici iz Mostara i okolice do 15 km udaljenosti od grada Mostara (gradsko područje). Ukupno 46 bolesnika.
2. Bolesnici iz okoline Mostara udaljeni više od 15 km od grada Mostara (područje HNŽ/K-a).Ukupno 25 bolesnika.
3. Bolesnici udaljeni više od 25 km od grada Mostara (područje ZHŽ/K-a). Ukupno 24 bolesnika.

U radu je primijenjena metoda anketiranja bolesnika, koji su za potrebe provedbe postupka istraživanja popunjavali pripremljeni upitnik, sačinjen od dva dijela. Prvi dio upitnika tražio je odgovore od bolesnika o osobnim karakteristikama (spolu, dobi i mjestu prebivališta, vremenu dolaska u bolnicu), dok je drugi dio, a pretpostavljajući da je kod svakog ili većine anketiranih bolesnika oboljelih od infarkta miokarda, već prisutan jedan čimbenik za nastanak ovoga oboljenja, tražio odgovore o njihovoj prisutnosti kod svakog bolesnika pojedinačno. Odnosno, drugi dio upitnika je strukturiran tako da od anketiranih bolesnika s dijagnozom infarkta miokarda, dobijemo odgovore o broju i vrsti zastupljenih rizičnih čimbenika za nastanak i razvoj srčanih bolesti i infarkta miokarda.

Statistički postupci

Statistička obrada podataka je urađena uz pomoć programa Microsoft excel 2007 i SPSS for Windows 17.0. Za iskazivanje rezultata su korišteni: apsolutne (f) i relativne (%) frekvencije, minimum, maksimum te medijan i interkvartilni raspon. Za utvrđivanje statistički značajnih razlika između skupina podataka su

korišteni χ^2 test, Mann-Whitneyev U test i Kruskal-Wallisov test. Razina statističke značajnosti je p=0,05, a p vrijednosti koje se nisu mogla iskazati do tri decimalna mjesta su iskazane kao p<0,001.

REZULTATI ISTRAŽIVANJA

Istraživanje je obuhvatilo ukupno 95 bolesnika s AIM-a(STEMI i NSTEMI) koji su transportirani u vozilima HMP i primljeni u Jedinicu intenzivnog liječenja Sveučilišne Kliničke bolnice Mostar u razdoblju od 1.lipnja do 31.prosinca 2011. godine.Statistički značajno su bile zastupljeniji muškarci (p=0,006), ispitanici s višom ili visokom stručnom spremom (p=0,001) te ispitanici koji žive u Hercegovačko-neretvanskoj županiji/kantonu i to unutar 15 km od Sveučilišne kliničke bolnice Mostar (p=0,008) (tablica 1).

Tablica 1. Sociodemografske karakteristike ispitanika

		f	%	p*
Spol	M	61	64,2	0,006
	Ž	34	35,8	
Stručna sprema	bez škole	17	17,9	0,001
	SSS	18	18,9	
	VŠS	41	43,2	
	VSS	19	20,0	
Mjesto življenja	HNŽ/K (<15km)	46	48,4	0,008
	HNŽ/K (>15km)	25	26,3	
	ZHŽ/K	24	25,3	

* χ^2 test

Rezultati prikazani na Tablici 1. pokazuju da postoji statistički značajna razlika po spolu (64,2 % muškarci), po stručnoj spremi (43,2 % VŠS) te po mjestu življenja (48,4 % HNŽ/K (<15km).

Tablica 2.Analiza ispitivanih vremena prema mjestu stanovanja

Vremena*	HNŽ/K (<15km)	HNŽ/K (>15km)	ZHŽ/K	p**
v1	30 (105)	60 (330)	120 (795)	0,036
v2	15 (20)	40 (30)	40 (18)	0,009
v3	5 (10)	10 (5)	5 (5)	0,751
v4	20 (55)	5 (5)	5 (33)	0,078
v5	160 (525)	225 (1110)	415 (1412)	0,265
v6	33 (70)	15 (20)	18(50)	0,204

v1 - Vrijeme od početka boli do dolaska HMP/obiteljskog liječnika
v2 - Vrijeme od dolaska HMP/obiteljskog liječnika do dolaska u bolnicu
v3 - Vrijeme od dolaska u bolnicu do prijema na odjel
v4 - Vrijeme od prijema na odjel do eventualne invazivne kardiološke obrade
v5 - Vrijeme od početka boli do eventualne invazivne kardiološke obrade (V1+v2+v3+v4)
v6 - Vrijeme od dolaska u bolnicu do eventualne invazivne kardiološke obrade (v3+v4)
* vremena izražena u minutama kao medijan (interkvartilni raspon);
**Kruskal Wallis Test

Bolesnici s akutnim infarktom miokarda (AIM-a) iz Mostara i bliže okolice (HNŽ/K<15km) ranije su pozivali HMP od bolesnika koji žive na udaljenijim područjima, samim tim i transport od HMP do bolnice tih bolesnika je bio znatno brži.Vrijeme mjereno od dolaska HMP/obiteljskog liječnika do dolaska u bolnicu pokazalo je značajnu statističku razliku između dvije Hercegovačke regije (p = 0.009), dok se ostali parametri nisu pokazali značajnim.

Tablica 3.Analiza vremena od početka boli do dolaska HMP/obiteljskog liječnika s obzirom na stručnu spremu

Stručna sprema	M	IQR
Bez škole	60	2860
SSS	240	6785
VŠS	30	105
VSS	30	45

P=0,014 (Kruskal Wallis Test), IQR = interkvartilni raspon, M = medijan, SSS = srednja stručna sprema, VSŠ = viša školska sprema, VSS = viša stručna sprema.

Ispitanici višeg stupnja obrazovanja mogu prije prepoznati simptome te da prije pozovu liječnika što se i u ovom istraživanju statistički značajno pokazalo.

RASPRAVA

Glavni cilj liječenja bolesnika s akutnim infarktom miokarda je primarno ostvariti miokardaijalnu reperfuziju u roku od nekoliko sati od početka bolova, kako bi se sačuvali ishemijski miokard i povećala stopa preživljavanja. (6, 7, 8). U Sveučilišnoj Kliničkoj bolnici Mostar PCI je uvedena 04. rujna 2008.godine, a sljedeće dvije godine mogla se koristiti samo tijekom regularnog radnog dana; 24- satna primjena PCI započela je 02.veljače 2010.godine. Najveće kašnjenje odnosi se na vrijeme od početka bolova do poziva pomoći. Ovaj period ne ovisi o učinkovitosti zdravstvene službe ili osoblja bolnice, već o bolesnicima i ljudima koji se nađu oko njih za vrijeme početka bolova. U uzorku prevladavaju ispitanici prekomjerne tjelesne težine i ispitanici koji s obzirom na svoju težinu pripadaju skupini pretilih ispitanika (69,5 %), a rezultat je smanjene ili nikakve fizičke aktivnosti te ne odgovarajuće prehrane, što na posljetku dovodi do raznih bolesti te samog IM-a. U ovom istraživanju bolesnici s AIM-a iz Mostara i bliže okolice (HNŽ/K<15km) ranije su pozivali HMP od bolesnika koji žive na udaljenijim područjima, samim tim i transport od HMP do bolnice tih bolesnika je bio znatno brži. Prosječno vrijeme od početka boli do prijema u JIKS za područje grada Mostara i bliže okolice (HNŽ/K<15km) iznosilo je 1 h u periodu koji smo bilježili. Za područje HNŽ/K (>15km) zabilježeno nešto duže vrijeme 1 h i 50 min, a za ZHŽ/K mjereno vrijeme je iznosilo 2 h i 45 minuta. Od važnosti je za istaknuti da je u europskim promatranjima ovaj period veći od 2 h (9,11). Istraživanje koje se obavljalo u Zagrebu 1996. pokazalo je da su bolesnici sa simptomima AIM-a prilično kasno pozvali pomoć, što je pokazatelj slabog poznavanja simptoma AIM-a među pučanstvom (11) . Najduže vrijeme koje smo pronašli u našem istraživanju bilo je 112,8h, dok je srednja vrijednost bila od 2 do 3 h, ovisno o godini ili zemljopisnom položaju. Najduže vrijeme koje smo pronašli u našem istraživanju bilo je 240 h, a na osnovu razgovora s bolesnicima doznali smo kako su važnost pridavali stomačnim tegobama te se zbog toga nisu javljali liječniku. Bolesnici koji su upoznati sa simptomima infarkta miokarda pozovu pomoć prije onih koji nisu upoznati s njima, i navode da su im liječnici, mediji, knjige, ostali bolesnici, prijatelji, a sve više i internet, izvori informacija o AIM-u (12). Međutim, u ovom istraživanju je uzeto u obzir i obrazovanje ispitanika, njih 43,2% je imalo VŠS, 20 % je imalo VSS, 18,9 % njih je imalo SSS i 17,9% je bilo onih sa osnovnom školom ili bez nje, a značajno je to da se pokazalo kako su ispitanici koji su završili

SSS statistički značajno kasnije zvali HMP/obiteljskog liječnika u odnosu na one koji nisu obrazovani ili oni sa VŠS i VSS (p = 0.014). U mnogim zemljama liječnici opće prakse još uvijek imaju glavnu ulogu u ranom liječenju bolesnika s AIM-om, a bolesnici često prvo kontaktiraju upravo njih (8). Ako liječnici opće prakse brzo reagiraju, mogu imati veliki učinak budući da obično poznaju bolesnike. Oni mogu napraviti i očitati EKG, zvati hitnu pomoć i obaviti defibrilaciju ako je potrebno (13, 14). Međutim, također je zabilježeno u brojnim studijama da konzultacije s liječnikom opće prakse mogu biti razlog većeg kašnjenja prije dolaska u bolnicu (15, 16). Budući da nije poznato koje intervencije mogu biti od koristi kako bi se ovo promijenilo, preporučuje se istraživati ponašanja zdravstvenih djelatnika vezana uz odgodu u traženju pomoći bolesnika s AIM-om (15). Kako bi skratili vrijeme dolaska pomoći, mnoge zemlje pokušavaju poboljšati hitnu medicinsku pomoć. Unatoč unaprijeđenoj organizaciji vrijeme od početka boli u prsima do poziva pomoći i dalje ostaje glavni problem povećanog kašnjenja u bolnicu (12). Vrijeme između početka boli i poziva pomoći zovemo "vrijeme odluke", a povezano je s noćnim početkom boli, boli slabijeg inteziteta, ruralnim porijeklom i dijabetesom (17-18) . No, u ovom istraživanju i ovoj skupini je značajno veći broj onih koji nisu dijabetičari, njih 73,7 %. Također se pokazalo da žene i starije osobe zovu kasnije (12, 19, 20) , a nedovoljno poznavanje simptoma infarkta miokarda može uzrokovati produžetak vremena pozivanja pomoći. U ovom istraživanju statistički značajan podatak je veći broj muške populacije koji su primljeni na odjel JIKS, njih 64, 2 %.

Jedna je studija pokazala da nedostatak zdravstvenog osiguranja i samački život ne utječu na kasno pozivanje pomoći (12). Većina intervencijskih studija ima cilj smanjiti vremenski period od pojave boli do dolaska u bolnicu, a ograničene su na javne edukacijske kampanje. Ova istraživanja dala su suprotstavljene rezultate, a učinkovitost javnih edukacijskih kampanja koje se bave smanjenjem vremena potrebnog do dolaska bolesnika s AIM-om u bolnicu ostaje do daljnjeg nejasna (21). Upute Europskog vijeća za oživljavanje preporučuju obuku za defibrilaciju. U Bosni i Hercegovini je samo liječnicima dozvoljeno napraviti defibrilaciju. Ovakva strategija je štetna za javno zdravlje. Naime, istraživanjem je pokazano da je korištenje defibrilacije od strane policijskih službenika rezultiralo stopom preživjelih od 49-74 % (22). Bilo bi dobro kada bi svo medicinsko osoblje te policajci, vatrogasci i pripadnici gorski službe spašavanja (GSS-a) bili obučeni za korištenje automatskih vanjskih defibrilatora te tako izvršili defibrilaciju odmah nakon nastanka fibrilacije klijetke i smanjili broj iznenadnih srčanih smrti. Predugo vrijeme od početka boli do poziva pomoći zahtijeva provođenje organiziranih kampanja edukacije počevši rano već kroz osnovnoškolsko obrazovanje. Pomoćno medicinsko osoblje u Bosni i Hercegovini ne obavlja trombolizu jer je Bosna i Hercegovina jedna od rijetkih zemalja koja u vozilima hitne pomoći ima i liječnika. Međutim, u BiH se tromboliza ne obavlja izvan bolnice, čak ni u slučaju kada je prisutan liječnik, što je suprotno uputama Europskog kardiološkog društva (8). Za naglasiti je kako je statistički bilo više STEMI od NSTEMI infarkta mikoarda u ovom istraživanju. Također za istaknuti je i podatak da je suprotno očekivanjima nešto više ispitanika koji od prije nisu imali hipertenziju (56,8 %) niti dijabetes mellitus (73,7 %), te da je bilo više osoba ne pušača, (58,9 %). Vrijeme koje prođe od boli do prijema u Jedinicu intenzivne koronarne skrbi u bolesnika s AIM-om u Hercegovini , Mostar i bliža okolica (HNŽ/K<15km), zatim HNŽ/K (>15km) te ZHŽ/K nije predugo kao što je to slučaj u europskim područjima. Prognoza i preživljavanje bolesnika s AIM-om moglo bi biti poboljšano kada bi se uvele promjene u zdravstvenom sustavu u udaljenim prostorima. Takve promjene uključivale bi žurnu PCI u

optimalno vrijeme, a ukoliko to nije moguće uključivale bi trombolizu izvan bolnice, češću uporabu telemedicine, obuku pomoćnog medicinskog i nemedicinskog osoblja za defibrilaciju te uvođenje mehanizama za osiguranje kvalitete i poboljšanje prijevoza bolesnika.

ZAKLJUČAK

Vrijeme proteklo od početka boli do hospitalizacije bolesnika s akutnim infarktom miokarda u sve tri ispitivane regije je unutar očekivanog predloženog vremena što zovemo zlatni sat. U ispitivanom uzorku najviše bolesnika je bilo muškog spola, VŠS te najviše iz HNŽ/K-a, U istraživanju smo našli da postoji pozitivna povezanost između vremena od početka boli i preživljavanja. Drugim riječima rečeno što bolesnik brže zatraži pomoć smrtnost je manja. Značajnim se pokazalo da su bolesnici s akutnim infarktom miokarda (AIM-a) iz Mostara i bliže okolice (HNŽ/K<15km) ranije su pozivali HMP od bolesnika koji žive na udaljenijim područjima, samim tim i transport od HMP do bolnice tih bolesnika je bio znatno brži.

Za naglasiti je kako je statistički bilo više STEMI od NSTEMI infarkta mikoarda u ovom istraživanju. Također za istaknuti je i podatak da je suprotno očekivanjima nešto više ispitanika koji od prije nisu imali hipertenziju (56,8 %) niti dijabetes mellitus (73,7 %), te da je bilo više osoba ne pušača. I pored dobrog vremena potrebna je reorganizacija hitne službe kako izvanbolničke tako i bolničke u žurnom zbrinjavanju bolesnika s akutnim infarktom miokarda. Potrebna je edukacija stanovništva, nemedicinskog osoblja (policajci, vatrogasci, stjuardese, gorski spašavatelji) te promjena zakona (u Hrvatskoj i Bosni i Hercegovini samo liječnici smiju defibrilirati) za korištenje automatskih defibrilatora. Mrežom telemedicine "pokriti" sve regije te osigurati optimalan broj liječnika i sestara potreban za 24-satni rad sustava telemedicine. U žurnom zbrinjavanju bolesnika s akutnim infarktom miokarda uključiti liječnike obiteljske medicine.

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SIGNIFICANCE OF TIME FROM THE ONSET OF PAIN TO ARRIVAL AT THE HOSPITAL AFTER A HEART ATTACK IN THE HERZEGOVINA AREA

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ABSTRACT

Introduction: Ischemic heart disease (IHD) is the leading cause of death in the world. It can manifest as stable and unstable angina pectoris, acute myocardial infarction (AMI), functional heart failure, and sudden cardiac death. Every year, around 17 million people worldwide die from IHD, including 5 million people a year in Europe. To assess the effectiveness of the health system, it is important to determine how much time, from the onset of pain to arrival at the intensive care unit (ICU), depends on the distance of the patient's residence from Mostar, especially in the remote areas of the Herzegovina Neretva Canton (HNŽ/K) and West Herzegovina Canton (ZHŽ/K).

Objective: Determine the significance of time from the onset of pain to arrival at the hospital after a heart attack in the territory of Herzegovina.

Results: The research included a total of 95 patients with AMI, ST-elevation myocardial infarction (STEMI) and non-ST elevation myocardial infarction (NSTEMI), who were transported in ambulance vehicles and admitted to the Intensive Care Unit of the University Clinical Hospital Mostar. Patients with AMI from Mostar and the surrounding area (HNŽ/K<15km) called emergency medical services (EMS) earlier than patients who live in more distant areas, therefore the transport of these patients to the hospital was much faster. The time measured from the arrival of the ambulance/family doctor to the arrival at the hospital showed a significant statistical difference between the two regions of Herzegovina. The assumption is that people with a higher level of education can recognize symptoms earlier and call a doctor, which was also statistically significant in this study.

Conclusion: The time from the onset of pain to the hospitalization of patients with acute myocardial infarction in all three investigated regions is within the expected suggested time, also known as the golden hour.

Key words: time, pain, acute myocardial infraction

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INFLAMMATORY BOWEL DISEASES AND RESILIENCE

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ABSTRACT

INTRODUCTION: Inflammatory bowel disease (IBD) comprising ulcerative colitis (UC) and Crohn disease (CD), affects >1 million individuals in the United States and 2.5 million inEurope. IBD is an immune-mediated chronic condition for which currently no definitive cure is available. The current study utilizes apositive psychology framework to understand the role of stress in IBD, seeks a proof ofconcept that stress resilience could be a protective factor in patients with IBD. Resilienceis defined as the inherent and modifiable capacity of an individual to cope or recover from adversity.
OBJECTIVE: On the basis of previous knowledge, we want explain and bring closer the understanding of the resilience of patients with inflammatory bowel diseases.
METHODS: The PubMed database, and the Google scholar database were searched. The search was performed using keywords. This paper includes research dealing with resilience in patients with inflammatory bowel diseases within the last ten years.
RESULTS: Although IBD imposes a mental and physical toll on individuals, someindividuals do report feeling stronger due to having IBD. Most studies included in this review investigated psychological resilience and trait resilience that promoted the ability to bounce back from IBD-related adversity. Conversely, higher levels of resilience were found to predict better quality of life among IBD patients. Higher levels of resilience predicted higher levels of adaptation to the ostomy; notably, perseverance—defined as a trait of resilience was the most reliable predictor. Resilience was not significantly affected by clinical characteristics in UC patients.
CONCLUSION: Many unmet needs still exist in the IBD research agenda, including a better understanding of its physiopathology, reduction of diagnostic delays, discovery of more effective and safer drugs, optimisation of existing therapies, improving patients' adherence to the treatment plan, improving patient's quality of life, management of extraintestinal manifestations, and prevention of complications. A multidimensional approach is necessary for delivering high-quality healthcare for IBD patients.

Key words: Inflammantory, bowel diseasee, resilience

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INTRODUCTION

The inflammatory bowel diseases (IBDs) are chronic intestinal disorders that are typically categorized as one of two subtypes: Crohn's disease and ulcerative colitis. Ulcerative colitis is limited to the colon, with superficial mucosal inflammation that extends proximally in a contiguous manner, and can lead to ulcerations, severe bleeding, toxic megacolon, and fulminant colitis. In contrast, Crohn's disease can affect any part of the digestive tract, often in a noncontiguous manner, and is characterized by transmural inflammation, which can lead to complications such as fibrotic strictures, fistulas, and abscesses (1).

Although potentially important differences between ulcerative colitis and Crohn's disease have been observed, such as immune-cell subpopulations differentially enriched(2) and genetic variants (e.g., *NOD* and *PTPN22*) that increase the risk of Crohn's disease but may be protective against ulcerative colitis (3), a comprehensive understanding of the underlying pathophysiological mechanisms resulting in these divergent clinical manifestations is still lacking. Moreover, additional heterogeneity beyond these two IBD subtypes is likely; for example, ileal and colonic Crohn's disease may represent distinct entities, and colonic Crohn's disease can be further classified into subtypes on the basis of gene expression profiles (4). The IBD armamentariumincludes untargeted therapies, such as aminosalicylates, glucocorticoids, and immunomodulators, as well as targeted biologic therapies that act through one of the following mechanisms: neutralization of cytokines that promote inflammation (e.g., anti–tumor necrosis factor [TNF] antibodies) or drive the differentiation and function of specialized immune subsets (e.g., anti–interleukin-12 and anti–interleukin-23 antibodies), blockage of signal transduction cascades downstream of these pathways (e.g., Janus kinase [JAK] inhibitors), or modulation of lymphocyte trafficking (e.g., anti–α4β7 integrin antibodies). Biologic therapies are effective in many patients, but up to 30% of patients do not have a response to initial treatment, and in up to 50% of patients, the response is lost over time. Although inadequate drug levels and development of immunogenicity to drug treatments underlie some of these failures, additional heterogeneity of IBD beyond the classic Crohn's disease and ulcerative colitis subtypes is likely to be another important factor. The pathophysiology of IBD involves complex genetic, environmental, epithelial, microbial, and immune factors. This review does not cover all the breakthroughs in these diverse areas but instead highlights some recent advances.

INTESTINAL EPITHELIUM

The intestinal epithelium comprises a single layer of epithelial cells linked by tight junctions and intercalated with immune cells (5). The small intestinal epithelium is a highly dynamic tissue organized as a series of protrusions (villi) and invaginations (crypts of Lieberkühn). Major functions include facilitating nutrient absorption, acting as a physical barrier against gut luminal contents, and responding to signals from the intestinal microbiota and immune system. Secretory cells include goblet cells, which produce mucus and such antimicrobial peptides as trefoil factor and resistin-like molecule beta that limit luminal microbes. Early studies suggested that the mucus layer was denuded in Crohn's disease owing to a reduction in goblet cells (6), and a recent single-cell RNA sequencing (scRNA-seq) study showed that down-regulation of a colonic goblet-cell–secreted protein, whey acidic protein four-disulfide core domain 2 (WFDC2), in active ulcerative colitis may lead to abnormalities in mucus layer formation, increased colonization and invasion of microbiota, and breakdown of the epithelial barrier (7). These findings suggest that WFDC2 and other molecules produced by goblet cells might be protective in ulcerative colitis.

Tromal cells, which are nonhematopoietic mesenchymal cells that include fibroblasts, myofibroblasts, and perivascular pericytes, reside below the epithelium in the lamina propria and play important roles in fibrosis and wound healing. A recent report suggested a role for a previously unknown subpopulation of fibroblasts in exacerbating ulcerative colitis, owing to increased expression of immune-cell–attractant chemokines CCL19 and CCL21, as well as interleukin-33, which induces certain immune-cell subsets to produce type 2 cytokines (8). Thus, approaches aimed at enhancing epithelial barrier function could lead to potential therapeutic strategies for IBD.

GENETICS, GENOMICS, AND EPIGENOMICS

Early studies suggested a heritable risk that is greater for Crohn's disease than for ulcerative colitis and a higher incidence of IBD in first-degree relatives of patients with IBD than in the general population (9).To date, genomewide association studies have identified more than 240 risk variants that affect intracellular pathways recognizing microbial products (e.g., *NOD2*); the autophagy pathway, which facilitates recycling of intracellular organelles and removal of intracellular microorganisms (e.g., *ATG16L1*); genes regulating epithelial barrier function (e.g., *ECM1*); and pathways regulating innate and adaptive immunity (e.g., *IL23R* and *IL10*). Only 8 to 13% of disease variance in Crohn's disease and 4 to 7% in ulcerative colitis can be explained by known IBD risk loci, but genetic factors, such as variants in the antiinflammatory interleukin-10 signaling pathway, may play a more important role in children with very-early-onset IBD (10). Moreover, genetic studies, recently reviewed in detail,have greatly accelerated the identification of genes and pathways that may be critical for mucosal homeostasis and the development of IBD.

Genomewide profiling studies have focused on identifying molecular features, such as gene expression and epigenetic modifications, that distinguish additional subtypes within the canonical Crohn's disease or ulcerative colitis classifications, differentiate Crohn's disease from ulcerative colitis, or discriminate between IBD and a healthy state. Analyses of gene expression and chromatin accessibility in samples of colonic tissue have been used to identify two molecular subtypes of Crohn's disease that have differences in cellular metabolism (e.g., glucose and lipid metabolism pathways) and immune signaling pathways (e.g., interleukin receptors, G protein–coupled receptors, and toll-like receptors) (5).Other studies have identified genes that are more highly expressed in tissue from patients with IBD; for example, increased expression of the cytokine oncostatin M was observed in inflamed intestinal tissue from patients with IBD and was predictive of the subsequent failure of anti-TNF therapy.[12] A potential limitation of analyses using whole intestinal tissue, however, is the substantial heterogeneity of cell types contained within; thus, gene expression measurements may preferentially detect the most highly expressed messenger RNA (mRNA) transcripts in the most abundant cells and cannot be unequivocally linked to a specific cell type.

Technological advances enabling transcriptional profiling (e.g., scRNA-seq) and high-dimensional protein analyses (e.g., mass cytometry) at the single-cell level have resulted in the identification of IBD-associated signatures and the discovery of new subpopulations of fibroblasts,[9] epithelial cells,[8] and immune cells that are enriched or depleted in IBD (11,12). For example, a cellular module termed GIMATS (IgG-producing plasma cells, inflammatory mononuclear phagocytes, activated T cells, and stromal cells) was shown to be enriched in a subgroup of patients with ileal Crohn's disease and was associated with the lack of a durable remission in response to anti-

TNF therapy. Thus, genetic, genomic, and epigenomic studies have the potential to identify genes and pathways in specific cell subtypes that could represent future therapeutic targets or serve as biomarkers to aid in clinical decision making.

RESILIENCE AND HOW TO MEASURE IT

Studies on resilience vary in their methodology and samples (13,14). Historically, most studies focused on difficult environmental circumstances and children's ability to thrive and withstand the risk factors in their surroundings (15,16).

Resilience, from the Latin verb "resilire", means rebound or recoil (17). The most commonly used description for medical purposes involves the ability to adapt well in the face of adversity (18). Recently, Ungar recommended to standardisation of research on resilience by defining three distinct parts: (1) risk exposure, (2) desired outcome, and (3) protective factors (19). However, resilience is a dynamic process that grows over time (20).

Resilience among patients with a chronic illness is often defined as an individual's ability to cope well in the face of disease (21). Literature reviews on chronic illnesses and resilience revealed a paucity of articles including adults compared to children (22,23). However, resilience was either defined as a set of personal traits or as an outcome. In cancer patients undergoing treatment (24), higher levels of resilience were positively related to higher levels of activity and lower levels of psychological distress. In a study of the relation between self-silencing and resilience in women with HIV, higher rates of silencing were associated with lower levels of resilience (25). Furthermore, higher levels of income, education, and employment were significantly associated with resilience. A review of 12 cross-sectional studies on resilience and chronic illness showed that resilience was both a significant predictor and outcome of recovery and quality of life in individuals living with a chronic condition (21). Hence, resilience can be considered as a part of a patient's clinical complexity (26).

There is a multitude of scales measuring resilience mostly unique to the sample or specific situation researched. A comprehensive review by Windle et al. concluded that of 15 original scales examined many lacked sufficient information regarding the psychometric ratings and theoretical underpinning of the scales (27). Three scales were regarded as having more robust psychometric properties, Connor–Davidson resilience scale (CD-RISC) (28), resilience scale for adults (RSA), and the brief resilience scale (BRS) (29,30).

The BRS contains six items of resilience with higher scores indicating higher levels of resilience (30). The BRS assesses individuals' traits of resilience and their ability to cope with stress. It was initially tested on samples of cardiac rehabilitated and fibromyalgia patients. Similarly, the RSA measured 5 domains of resilience with 37 items, namely personal competence, personal structure, social competence, social support, and family coherence (29). It was originally tested on a sample of psychiatric outpatients. The scale was later reduced to 33 items and used a semantic differential scale format for higher accuracy (31). Lastly, the CD-RISC comprises 25 items, also measuring trait resilience on a five-point Likert scale (28). Like the RSA, CD-RISC was first assessed among a sample of psychiatric patients. To this day, the CD-RISC has been translated into over 70 different languages and is by far the most widely used scale of resilience (32).

RESILIENCE DEFINITON

Resilience is not easy to define and there is no simple definition since the term covers a very wide range of features, is comprehensive and significant. The name comes from the english word „resilience“ which was adopted in Croatian

language (33). The word is translated in many ways, but most often means „the ability to recover“. It consists of personal qualities which enable the individual to thrive in the encounter of a problem (34). Resilience is a complicated interaction of risk factors and protective factors which leads to positive development results (35). It is a positive adaptation after stressful situations and represents confrontation and heaving above hard experiences, that is, represents the capacity of a person to successfully adapt to changes, to resist the negative influence of stressors and avoid the appearance of significant dysfunctions (war trauma, family issues, workplace issues and similar). This does not mean that there is no awareness of the problem, absence of pain, not putting any effort to avoid the aforementioned. Resilience actually represents the strength to handle and deal with a problem, and to continue normally through life (36). Resilience is a constant process of adjustment to newly created conditions which consists of acquiring a growing and broader competence for stress reaction. It is in significant connection with the general developmental processes, relationships with significant others and the specific life circumstances of a person. Resilience development is closely linked to personality development as a whole, and is deeply individual as personality development (37). In the context of comorbidity, it is important to bear in mind that there are different forms of resilience and that, in accordance with the cascade model, certain factors of resilience may contribute to development of others. It is useful to have in mind personal and group resilience (38,39), physiological, psychological, social and spiritual resilience (40), and primary, secondary and tertiary resilience (41). Psychological and spiritual resilience actually represent psychological and spiritual defense mechanisms in crisis states, stress states and trauma. Psychological and spiritual resilience include hope, activity, purpose and meaning, community, gratitude and joy, which overcome vulnerability that includes despair, helplessness, absurdity, isolation, anger and sadness. In other words, resilience on a psychosocial level represents and includes different kinds of psychological, mental, social and spiritual capital. Primary resilience is linked to maintenance of balance, equilibrium and health, which ensure welfare and prevent stress-related diseases. Secondary resilience denotes the factors and processes which enable us to successfully cope with crises and illnesses and to re-restablish health and psychosomatic harmony.

RESILIENCE IN INFLAMMATORY BOWEL DISEASE

Although IBD imposes a mental and physical toll on individuals (42), some individuals do report feeling stronger due to having IBD (43).

Most studies included in this review investigated psychological resilience and trait resilience that promoted the ability to bounce back from IBD-related adversity (44,45). Some demographic characteristics found to be relevant to individuals with IBD included being optimistic, older, male, employed, not religious, and nulliparous (46). Women with IBD more commonly reported resilience to be an essential determinant of health and both genders mentioned self-efficacy, social support, occupational balance, and job satisfaction as the main determinants of health (47). Women with IBD and high resilience showed changes in brain-behavioural patterns, whereas the results were not conclusive for male participants (48). Individuals whose onset of CD occurred later in life (after 30 years of age) and who performed complimentary activities appeared to be more resilient (46). These findings were corroborated by Taylor et al.'s study, which compared level of physical activity, resilience, and health-related quality of life (HRQOL) among IBD participants (49). A higher intensity of physical activity independently and significantly predicted a higher level of physical HRQOL, but not mental

HRQOL. Resilience, on the other hand, was a significant and positive impact on mental HRQOL. Sehgal et al. found that lower levels of resilience were associated with significantly higher levels of anxiety and clinical depression (50). Conversely, higher levels of resilience were found to predict better quality of life among IBD patients.Higher levels of resilience predicted higher levels of adaptation to the ostomy; notably, perseverance—defined as a trait of resilience was the most reliable predictor (51). Moreover, lower income, sleep disturbances and being unmarried negatively impacted the level of resilience and depression among CD patients with an ostomy. Resilience was not significantly affected by clinical characteristics in UC patients. Overall, there was a slightly higher resilience level among UC patients compared to CD patients (52).

Contrarily to the previous studies, Sirois and Hirsch drew a distinction and defined resilience as a set of traits that only promote the ability to recover from an illness (53). The authors contrasted the concept of resilience with one's ability to thrive, the latter entailed growth above and beyond the recovery. The study examined illness acceptance, coping efficacy, depressive symptoms, and perceived social support differences among IBD patients who experienced loss, resilience, and thriving. At baseline, results indicated that across the four outcomes coping efficacy significantly distinguished those who thrived versus those who were resilient. 6 months later, this difference was no longer statistically significant. However, both resilient and thriving IBD groups were consistently reporting better psychological outcomes compared to the individuals experiencing loss from their illness.Stress resilience was investigated in two studies (54,55).

Melinder et al. examined prospectively a large cohort of young men from the general Swedish population speculating that low-stress resilience would predict the onset of IBD. Three quarters of subsequently diagnosed individuals had low to moderate levels of stress resilience. Skrautvol and Naden examined qualitatively stress resilience through integrative care (55). The highly select interviewees dealt with IBD using complementary and alternative medicine (CAM) and dietary supplements stressing the perceived importance of individualising treatment plans and making changes in their lifestyle. These findings go in line with Sirois' findings that 46% of individuals with IBD used CAM as a complementary treatment to conventional medicine (56). Although the magnitude of the relation was small, individuals with IBD who reported high perception of health and high levels of resilience had greater odds of using CAM.

During transition from juvenile to adult-centred care, both self-efficacy (SE) and resiliency were found to independently and significantly predict better transition (57). In response, Carlsen et al. developed an e-health transfer concept to assess patient-reported outcomes, including self-efficacy, resilience, stress response among adolescents with IBD transitioning to healthcare (58).Resiliency and IBD only began to be investigated during the last 5 years. In most studies, resiliency was perceived as a series of traits or psychological resilience, only one study defined resiliency as a dynamic process, and two others looked at stress resilience (54, 55). There also seemed to be some disagreement on whether the definition entails to thrive or restore former health (53). Moreover, the dominance of cross-sectional data, small size, and purposive samples, as well as the near absence of longitudinal studies, are some of the shared limitations across the reviewed articles (59).

Stigmatisation and resilience share many common features (Fig. 2), some of which are IBD specific, and it is reasonable to assume that they mutually influence each other, as shown for psychiatric illnesses (60) and patients living with HIV (61). Disappointingly, only one study involving 40 community-based adult patients

with self-reported IBD has investigated this issue in the IBD population so far. In that study, the authors showed that individuals who seemed more resilient were also more positive, used humour as a coping mechanism, and placed their IBD in a wider life perspective (62). Also, stigma was more evident in patients with weak resilience, especially in those suffering from mental health disorders and in those lacking support networks (63). Several studies have been conducted in the territory of Bosnia and Herzegovina that show the connection between resilience and various mental and somatic diseases. Babić et al state that resilience is important for maintaining an individual's mental health in the fight against any disease (64). Boškailo et al state that a higher level of resilience affects a higher level of quality of life for breast cancer patients (65). Franjić et al state that people with a higher level of resilience are more likely to cope better with the disease and that such individuals have a faster recovery and healing process from colon cancer (66). Certain studies indicate the existence of a positive correlation between resilience and quality of life in colon cancer patients.

CONCLUSION

Many unmet needs still exist in the IBD research agenda, including a better understanding of its physiopathology, reduction of diagnostic delays, discovery of more effective and safer drugs, optimisation of existing therapies, improving patients' adherence to the treatment plan, improving patient's quality of life, management of extraintestinal manifestations, and prevention of complications. A multidimensional approach is necessary for delivering high-quality healthcare for IBD patients, but we are still far from optimal management in real life. Psychosocial aspects of IBD still receive less attention than the more physical aspects of the illness. According to current evidence, stigmatisation and resilience in IBD patients are not adequately addressed in day-by-day clinical practice, even if they have a great impact in terms of quality of life and coping with the stress of a chronic illness. More holistic approaches to IBD care are required that incorporate physical, psychological, and social aspects of living with IBD.Further research is required to better understand how stigma and resilience influence patient engagement with medical services, adherence to treatment, attitude towards healthy living, and longer-term disease outcomes. Future work to establish if and how stigmatisation can be reduced and resilience improved is urgently needed. In the authors' opinion, the combination of better medical treatments and comprehensive approaches addressing psychosocial aspects, including stigma and resilience, will lead to a better quality of life for patients with IBD.

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SAŽETAK

UVOD: Upalna bolest crijeva (IBD) koja uključuje ulcerozni kolitis (UC) i Crohnovu bolest (CD), pogađa >1 milijun pojedinaca u Sjedinjenim Državama i 2,5 milijuna u Europi. IBD je imunološki posredovano kronično stanje za koje trenutno nije dostupan definitivan lijek. Trenutna studija koristi okvir pozitivne psihologije za razumijevanje uloge stresa u IBD-u, traži dokaz koncepta da bi otpornost na stres mogla biti zaštitni čimbenik kod bolesnika s IBD-om. Rezilijencija se definira kao sposobnost pojedinca da zadrži ili obnovi relativno stabilno psihološko i fizičko funkcioniranje kada se suoči sa stresnim životnim događajima i nedaćama.
CILJ: objasniti i približiti razumijevanje rezilijencije oboljelih od upalnih bolesti crijeva.
METODE: Provedena je elektronska pretraga baze podataka PubMed, te pretraga u bazi podataka Google znalac. Pretraga je obavljena korištenjem ključnih riječi. U ovaj rad uključena su istraživanja koja su se unutar pet godina bavila ispitivanjem rezilijencije kod oboljelih od upalnih bolesti crijeva.
REZULTATI: Niže razine otpornosti bile su povezane sa značajno višim razinama anksioznosti i kliničke depresije. Suprotno tome, utvrđeno je da više razine otpornosti predviđaju bolju kvalitetu života pacijenata s IBD-om. Više razine otpornosti predviđale su
više razine prilagodbe na stomu. Na otpornost nisu značajno utjecale kliničke karakteristike bolesnika s UC. Općenito, postojala je nešto viša razina otpornosti među pacijentima s UC-om u usporedbi s pacijentima s CD-om.
ZAKLJUČAK: Sve nezadovoljene potrebe i dalje postoje u istraživačkom programu IBD-a, uključujući bolje razumijevanje njegove fiziopatologije, smanjenje kašnjenja u dijagnostici, otkrivanje učinkovitijih i sigurnijih lijekova, optimizaciju postojećih terapija, poboljšanje pridržavanja pacijenata planu liječenja, poboljšanje pacijentove kvalitete život, upravljanje izvanintestinalnim manifestacijama i prevencija komplikacija. Potreban je višedimenzionalni pristup za pružanje visokokvalitetne zdravstvene skrbi za pacijente s IBD-om, ali još smo daleko od optimalnog upravljanja u stvarnom životu. Potreban je holistički pristupi njezi IBD-a koji uključuju fizičke, psihološke i socijalne aspekte života s IBD-om.

Ključne riječi: upalne bolesti crijeva, rezilijencija

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STIGMATIZACIJA PSIHIČKI OBOLJELIH OSOBA

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SAŽETAK

U ovom radu je predstavljen povijesni razvoj stigmatizirajućih stavova prema osobama sa psihičkim smetnjama, negativni učinci koje taj problem nosi sa sobom te mogući načini prevazilaženja ovog problema. Razvoj psihijatrije seže u daleku prošlost. Smatra se da su primitivna plemena na psihičku bolest gledala kao na višu silu, koju nije bilo moguće promijeniti, a izolacija psihički oboljelih osoba bila je popularna i u to daleko doba. Na psihijatrijske se pacijente oduvijek gledalo kao na opasne i kriminalce. U prilog tome govori i činjenica da su ovakve osobe bivale mučene po raznim logorima, omalovažavane i etiketirane. Psihijatrijske su ustanove uvijek smještane izvan gradova, na planine, daleko od ostalih ljudi. To se može vidjeti još i danas. Svi ovi faktori pridonijeli su stvaranju stigmatizacije ne samo među općom populacijom već i među zdravstvenih djelatnicima. Tek se u 18. stoljeću nazire svijetla točka u psihijatriji, skidanjem okova i lanaca s oboljelih. Bez obzira na napore koji su uloženi u smanjenje stigmatizacije, među općom populacijom još je i danas prisutan strah i oprez prilikom kontakta sa psihijatrijskim pacijentima. Ono što nas veseli je činjenica da se zbog sve većeg broja psihičkih oboljenja žele izraditi programi za borbu protiv stigmatizacije. Ovakvi programi imaju za cilj vraćanje dostojanstva oboljelim osobama, ali i ustanova u kojima one borave. Stigmatizaciji značajno doprinosi nedostatak znanja i razumijevanja psihičke bolesti. Stoga je iznimno važna edukacija bolesnika, njihovih obitelji, ali i šire javnosti. Sve ovo ima isti cilj, a on je bolje razumijevnje psihički oboljelih osoba i smanjenje stigmatizacije.
Cilj ovog rada je prikazati što sve utječe na stvaranje stigmatizirajućih stavova prema psihički oboljelim osobama, do kojih negativnih posljedica dovode takvi stavovi te koji su mogući načini njihovog prevazilaženja.

Ključne riječi: stigmatizacija,psihička bolest, psihijatrijski pacijent

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UVOD

Riječ „stigma“ je mijenjala svoje značenje kroz povijest. Danas tu riječ određuje uglavnom negativno značenje te ona predstavlja znak srama i diskreditacije osobe. Povezana je s predrasudama, tj. negativnim stavovima koji su utemeljeni na pogrešnim činjenicama (1). Stigmatizacija se odnosi na pripisivanje atributa koji diskreditiraju osobu, odnosno, svode pojedinca sa svim njegovim osobinama na bezvrijednu i lošu osobu (2). Ta riječ predstavlja udar na pojedinčevu psihološku i socijalnu dobrobit. Gubitak statusa u društvu i diskriminacija te odbacivanje i izbjegavanje od strane drugih predstavlja težak teret za pojedinca, a uzrok je stigmatizacije (3).Stigmatizirati nekoga je svrsishodan, smislen odgovor na registrirane prijetnje, stvarne opasnosti i strah od nepoznatog. To je ono što stigmu čini tako opasnom, trajnom i otpornom na promjenu (4). Nadalje, stigma predstavlja negativan pogled društva prema pojedincu zbog krivog shvaćanja bolesti. Krivo shvaćanje bolesti nastaje iz neznanja i stvara predrasude. Društvena stigma je osjećaj manje vrijednosti koji se manifestira u kontaktu s drugima. Ona može dovesti do poremećaja ponašanja, razviti osjećaj manje vrijednosti te sklonost tjeskobi i depresiji (5). U ovom radu će biti riječ o stigmatizaciji iznimno osjetljivog dijela populacije, a riječ je o stigmatizaciji psihički oboljelih osoba. Stigmatizacija osoba koje boluju od psihičkih bolesti je negativno obilježavanje, marginaliziranje te klasificiranje kao manje vrijednih i izbjegavanje zbog te bolesti. Ona je sveprisutna i uobičajeno je uvjerenje da su psihički oboljele osobe nasilne, nepredvidljive i agresivne (6). Takva stigmatizacija ima negativne posljedice kako za oboljelog, tako i za članove njegove obitelji te psihijatriju kao struku i cijelu zajednicu (1).

TEORIJSKO ODREĐENJE STIGME

Postoje brojna određenja stigme. Riječ stigma je grčka imenica koja dolazi od korijena čije je značenje „označiti, naglasiti, istaknuti (1). Kroz povijest su postojala razna shvaćanja i tumačenja ovog pojma. Stari Grci su se u velikoj mjeri služili vizualnim sredstvima te su prvi uveli termin “stigmatos” koji se odnosio na tjelesne oznake, osmišljene da istaknu ono što je neobično ili loše kad je u pitanju moralni status obilježenoga. Biljezi su usječeni u tijelo ili su dobiveni spaljivanjem određenih mjesta na tijelu, a onaj koji biljeg nosi je rob, kriminalac ili izdajnik - okaljana osoba, koju treba izbjegavati, a naročito na javnim mjestima (7). Pojedinac je stigmatiziran kad se njegovo određeno obilježje (određeno odstupanje od prototipa ili norme) dovede u vezu s njegovim ostalim karakteristikama. Točnije, kad se njegove ostale karakteristike vide kroz prizmu njegovog osnovnog diskriminirajućeg svojstva, čime i one same postaju diskriminirajuće (8). Pojam stigme, tijekom povijesti je mijenjao predznak i značenja, i to od negativnoga prema pozitivnom, da bi se u današnjem pojmu negativni i pozitivni predznak objedinili, ali uz premoć negativnoga. Naime, stigma je u antičkoj Grčkoj označavala užarenim metalom utisnuti znak, rezerviran za niževrijedne pojedince (robove, izdajice polisa). U kršćanskoj ekumeni dobila je pozitivnu konotaciju Isusovih rana koja se zadržala do danas, da bi se danas više odnosila na društvenu sramotu, nego na neki fizički znak (9). Današnji pojam stigme formalni je koncept koji se odnosi više na diskriminirajući odnos prema stigmatiziranoj osobi nego na neki njegov konkretni atribut (10). Karakteristično za stigmu je da reducira stigmatiziranu osobu na “dijagnozu”, odnosno ta osoba u očima “normalnih” prestaje biti potpuno ljudsko biće i doživljava ju se kao nenormalnu, nemoralnu ili čak nečovječnu osobu (11). Što se tiče psihijatrijske terminologije, izraz stigma uveo je kanadski sociolog Erving Goffman koji istražuje reakcije osoba koje ponašanjem ili izgledom

odstupaju od društveno prihvaćenih standarda. Stigma se odnosi na sramotu koju takve osobe mogu osjetiti pa zbog straha od diskreditiranja okoline, a u obranu svog identiteta, prikrivaju svoje nedostatke (12).

Zaključujemo da nositi stigmu danas može imati pozitivno značenje za pojedinca (Isusove rane), ali najčešće znači da, koristeći kršćansku metaforu, taj pojedinac nosi "nevidljivi križ" socijalnog grijeha koji mu svojom težinom otežava funkcioniranje u društvu, a drugima pokazuje da ga treba izbjegavati (kako im ne bi natovario/la svoj križ), žaliti ili izložiti diskriminacijskom djelovanju (11).

TEORIJSKO ODREĐENJE PSIHIČKE BOLESTI

Psihička bolest se definira kao poremećaj na planu doživljavanja i/ili ponašanja, funkcionalnog ili organskog porijekla, koji zahtijeva psihijatrijsku intervenciju, a najčešće i hospitalizaciju (13). Predstavlja poremećaj funkcije mozga koji utječe na različite psihičke funkcije ili sposobnost osobe da adekvatno komunicira sa svojom okolinom. Psihička bolest osobu onemogućava da uz osjećaj vlastitog zadovoljstva uđe u interakciju s okolinom te da radi, voli i bude voljena. Najjednostavnija podjela psihičkih bolesti je podjela na: 1. endogene psihoze kod kojih se za pojavu psihičke bolesti razlog nalazi u nekoj psihičkoj sastavnici zdravlja bez jasnog i vidljivog organskog razloga. Primjeri endogene psihoze su: shizofrenija, bipolarni poremećaj itd., 2. siptomatske psihoze kod kojih se za pojavu psihičke bolesti razlog nalazi u nekoj organskoj bolesti, a psihička bolest je simptom te bolesti. To su primjerice tumor mozga, teški metabolički poremećaji itd., 3. reaktivne psihoze kod kojih se za pojavu psihičke bolesti razlog nalazi u nekom težem obliku stresnog doživljaja, a psihička bolest je simptom, odnosno posljedica te iznimno jake ili prolongirane neprijatnosti. Primjeri reaktivne psihoze su: teška psihotraumatska zlostavljanja u ratu, iznenadna smrt člana obitelji itd (1).

Psihičke poremećaje i psihičke bolesti iznimno je teško razlikovati. Temeljna razlika između psihičkog poremećaja i psihičke bolesti je u njihovu trajanju i intenzitetu. Što se tiče psihičke bolesti, one u pravilu podrazumijevanju medicinsku skrb i uzimanje lijekova. U današnje vrijeme, uzrok psihičkih poremećaja i bolesti se gleda kroz biopsihosocijalni model. To znači da su biološki, psihološki i socijalni faktori podjednako važni u nastanku poremećaja odnosno bolesti te u očuvanju zdravlja (14).

STIGMATIZACIJA PSIHIČKI OBOLJELIH OSOBA

Pojam stigma predstavlja društveni, medicinski i etički problem te negativno utječe na traženje pomoći, prihvaćanje liječenja, uspješni ishod liječenja, kvalitetu života te integraciju oboljelih u zajednici. Stigmatizacija psihički oboljelih osoba je iznimno raširena. Nosi sa sobom psihološke, socijalne i ekonomske posljedice za stigmatizirane osobe te narušava njihova prava na poštovanje, ravnopravnost i liječenje (1). Od svih poremećaja, psihički poremećaji su najjače stigmatizirani (15), aod svih tipova psihičkih poremećaja najjače su pak stigmatizirane shizofrenija i ovisnost o drogama (16). Nažalost, svjesni smo svakodnevne diskriminacije psihički oboljelih osoba kroz prizmu neznanja društvene zajednice o bolestima ljudske duše, smatrajući ih nasilnima, nesposobnima, neodgovornima, nepredvidivima, lijenima, krivima za bolest. Stigmatizacija je povezana s predrasudama, negativnim konotacijama da se psihička bolest ne može liječiti. Kombinacija teške psihičke bolesti, diskriminacije i stigmatiziranosti je pogubna za psihičke bolesnike i kroz povijest je igrala veliku ulogu u njihovoj emocionalnoj i socijalnoj izoliranosti, što vodi produbljivanju njihovih patnji, a kao posljedica stigme može se javiti i diskriminacija koja spada u tešku povredu osnovnih ljudskih prava (17).

Stigmatizirajući stavovi prema psihički oboljelima prevladavaju, ne samo u općoj populaciji, već i među zdravstvenim djelatnicima. Ova činjenica posebno zabrinjava. Znanstveno je dokazano kako stigmatizirajući stavovi kod zdravstvenih djelatnika mogu dovesti do stavljanja psihijatrijske dijagnoze u prvi plan, posljedica čega može biti slabija somatska zdravstvena skrb za osobe sa psihičkim smetnjama (18). Stjecanje znanja o psihičkim poremećajima i bolestima ne znači i smanjenje stigme. Ukoliko se javnost informira samo o medicinskim i biološkim značajkama bolesti, stigma i socijalna distanca mogu se dodatno produbiti. Iznimno je važno na vrijeme uključiti osobe sa psihičkim poremećajima u odgovarajuće tretmane, držati simptome pod kontrolom te prevenirati mogućnost agresije i nasilja jer već i jedno nasilno djelo može narušiti sav trud oko stvaranja pozitivne slike i borbe protiv diskriminacije ove vrste (19).

UZROCI NASTANKA STIGMATIZACIJE PSIHIČKI OBOLJELIH OSOBA

Prema slici koja o osobama sa psihičkim poremećajem vlada u javnosti, osobe sa psihičkim poremećajem percipiraju se i prikazuju kao bića koja su nepredvidiva, nerazumljiva, nerazumna i opasna. Takve karakteristike psihički poremećenih ljudi gotovo se bez izuzetka ističu kao bitna svojstva onih koji pate od nekog psihičkog poremećaja, prije svega psihotičnog (20). Život u zajednici temelji se na većoj ili manjoj predvidljivosti ponašanja ljudi. Zbog toga se ono ponašanje koje je nepredvidivo jer je nerazumno i nerazumljivo, doživljava kao opasno ponašanje, kao prijetnja onome što je sada i ovdje. Kao posljedica toga nastaje i stigmatizacija. Stigmatizira se ona osobina ljudi koja je suprotna normi društvene zajednice (21).

Uzroci stigmatizacije su složeni i potječu velikim dijelom iz duboko ukorijenjenih kulturnih stavova prema ludilu i pretpostavci o prirodi psihičkog poremećaja (22). Stigmatizacija je odgovor na one činitelje koji ugrožavaju našu sposobnost da izvlačimo korist od života u socijalnim grupama (23). Nadalje, značajnu ulogu u nastanku stigmatizacije psihički oboljelih osoba ima i učenje stigmatizirajućeg ponašanja. Ako djeca još od malih nogu vide i čuju kako se psihički oboljeli u pričama odraslih i u medijima prikazuju u izrazito negativnom svjetlu, oni to upijaju i uče kako stigmatizacijom reagirati na čovjeka sa psihičkim poremećajem. Na taj način, djeca prihvaćaju da takve osobe stigmatizacijom drže što dalje od sebe (20).

Metode borbe protiv stigme

U svim društvima, metode borbe protiv stigme su: kontakt sa psihički oboljelom osobom, edukacija šire javnosti, obitelji, mladih, novinara i drugih važnih grupa, usavršavanje farmakoterapije, veliko znanje i odgovornost profesionalaca. Bitno je i korištenje sredstava javnog informiranja u zdravstvenoj djelatnosti, kao i edukacija i uspostavljanje odgovornosti novinara u izvještavanju o ovim posebnim pitanjima društvenog života. Problemi mentalnog zdravlja trebaju biti učvršćeni u nacionalno zakonodavstvo s ciljem zaštite prava mentalno oboljelih osoba. I druge aktivnosti mogu biti od velikog značaja, poput uspostavljanja nagodbe za antistigma aktivnosti, kazališne predstave te drugi kulturni, edukacijski i umjetnički sadržaji, pravljenje web stranica, uspostavlčjanje telefonskih linija, koji su vezani s mentalnim poremećajima i stigmom (24). Provođenje antistigma programa kroz edukaciju šire društvene zajednice o psihičkim bolestima, otvoreni razgovori i rasprave o razbijanju strahova prema oboljelima, kao i značajna uloga medija u razbijanju mitova, može i treba umanjiti patnje koje pacijenti proživljavaju (17). Nadalje, značajnu ulogu u prevladavanju ovog problema ima svatko od nas. Mijenjanjem svojih stavova pomažemo ljudima sa psihičkom

bolešću pri liječenju, postajemo humaniji i oslobađamo se negativnih stavova koji su nas sprječavali da budemo bolji i pravedniji (1).

ODNOS STIGME I SOCIJALNOG OKRUŽENJA

Osim samih stavova kao socijalno posredovane svijesti svakog pojedinca u društvu, nikako se ne smije zanemariti niti uloga društva u stigmatizaciji psihičkih bolesnika. Nažalost, mediji koji snažno utječu na stavove često podržavaju i učvršćuju stereotipnu i stigmatizirajuću predodžbu o oboljelima od psihičkog poremećaja. Najčešće je riječ o senzacionalističkom pristupu kada se jedna incidentna situacija generalizira na sve oboljele (25). Stigma ne predstavlja samo negativan doživljaj koji je nastao temeljem stereotipiziranih stavova nego i isključivanje osoba iz raznih segmenata društva u cjelini. Njezin utjecaj se osjeća u direktnoj međusobnoj komunikaciji s oboljelom osobom, ali i u drugim socijalnim okruženjima: u obitelji, susjedstvu i lokalnoj zajednici, na radnom mjestu, u edukativnim institucijama, u sustavu zdravstvene zaštite, u pravnom sustavu i na razini vladajućih institucija (26).

U zdravstvenom sustavu se također može pronaći negativan utjecaj stigme. To se može uočiti na primjeru gdje osobama koje su označene kao mentalno bolesne, zdravstvena zaštita je manje dostupna u usporedbi s ostalim ljudima koji nisu mentalno bolesni. Stigmom su zahvaćene i institucije liječenja. Smatra se da se ondje nalaze ‘’svezani’’ i ‘’opasni’’ bolesnici te da su svi koji su se tamo liječili, također takvi. Liječnici psihijatri smatrani su neučinkovitima zbog toga što se smatra da je psihička bolest neizlječiva. Također, smatra se da su lijekovi neučinkoviti te da služe samo za drogiranje, a ne za liječenje (27). Stigmatizirajući stavovi medicinskog osoblja prema takvim pacijentima mogu grubo povrijediti njihova osnovna životna prava te dovesti do izostanka suradnje pacijenata, odbijanja liječenja te na poslijetku do loših ishoda liječenja (28).

Istraživanja pokazuju da su spol, mjesto stanovanja i nivo obrazovanja povezani pri formiranju stavova prema mentalno oboljelim osobama. Pozitivniji stav prema mentalno oboljelima imaju žene, osobe s višom/visokom školom i oni koji žive u gradskim naseljima. Oni su otvoreniji prema njihovoj resocijalizaciji u zajednici te manje ističu da je potrebno ograničiti njihova prava (29). Većina istraživanja pokazuje da starije osobe, osobe relativno nižeg stupnja obrazovanja i one osobe koje nikad nisu poznavale nekoga s mentalnim poremećajem, više žele socijalnu distancu (30). Općenito se uzima da osobe s višim stupnjem obrazovanja imaju pozitivnije stavove prema osobama s mentalnim poremećajima (31). Također, može se reći da je prosječan stav prema osobama sa psihičkim poremećajima povezan sa strahom i prezirom, odnosno, socijalna ih okolina u mnogim slučajevima stigmatizira (32). Sve veći broj istraživanja upućuje na to da osobno iskustvo s ljudima koji imaju psihičku bolest može umanjiti stigmatizirajuće stavove (33). Međutim, velik broj ljudi nema izravnog iskustva sa psihičkim bolestima te svoje stavove kreiraju prema porukama koje dobivaju iz svoje zajednice i medija (34). Ponekad te poruke znaju biti netočne, poput onih da su svi psihički bolesnici opasni, nasilni, nepredvidivi i nesposobni te doprinose kreiranju stigmatizirajućih stavova u općoj populaciji (18). Da bi se umanjili ovi negativni stavovi, psihijatrija treba biti prisutna ne samo u bolnicama, nego i u zajednici gdje nastaju i gdje se očituju psihički problemi te treba djelovati kako bi se isti prevenirali (35).Stavovi okoline prema psihičkim bolesnicima i psihijatrijskom liječenju uglavnom su i danas nepovoljni (36). Psihički bolesnici su zbog negativnog stava okoline, skloni sebe smatrati manje vrijednima. Ove odlike samostigmatizacije uvelike pogoršavaju psihosocijalne i mentalno higijenske uvjete oboljelih, otežavaju ishod liječenja i

njihovu socijalnu i medicinsku rehabilitaciju (37).

Stigmatizacija psihički oboljelih osoba i mediji

Nerijetko, mediji imaju značajan utjecaj na širenje stigmatizirajućih stavova o osobama sa psihičkim smetnjama. Mediji prikazivanjem, pisanjem na televiziji i u novinama svjesno ili nesvjesno potiču i podržavaju stigmu opasnosti jer objavljuju uglavnom loše vijesti te koriste nepotrebne metafore u novinskim člancima (38). Prikazivanje osoba s mentalnim poremećajem na televiziji i u drugim sredstvima javnog informiranja od velike je važnosti jer za neke ljude to je jedini i glavni izvor informacija o osobama sa psihičkom bolesti. Ukoliko javnost kreira stav o psihičkim smetnjama iz medija, tada ta ista javnost može pretpostaviti da su osobe sa psihičkim poremećajem opterećenje za društvo te ne mogu pridonijeti zajednici i društvu na pozitivan način (39). Mediji i društvo općenito su skloni osobe sa psihičkim smetnjama promatrati kao nasilne, ponajprije opasne osobe. Osobe sa psihičkim smetnjama društvo najčešće etiketira pa ih u vezi s tim i okolina doživljava kao opasne, u potpunosti nesposobne za samostalan život, donošenje odluka relevantnih za njih same, neizlječive, a dosta često i kao one koji sami nose krivicu za svoju bolest (40).

NEGATIVNI UČINCI STIGME

Negativni učinci stigme psihičkog poremećaja, prvenstveno se odražavaju na: psihički oboljele osobe, njihove obitelji te na psihijatrijsku djelatnost. Na veliku žalost, stigma psihičkog poremećaja je nešto što je u stalnom porastu, nešto što je globalno i što ne pokazuje trend slabljenja (20).

Negativni učinci stigme na psihički oboljele osobe

Negativni učinci stigme se ponajviše odražavaju na same psihički oboljele osobe. U prilog tome govori činjenica da su psihički poremećeni ljudi među najviše stigmatiziranim, diskriminiranim, marginaliziranim, hendikepiranim i ranjivim članovima nažeg društva (41). Na psihički oboljele se gleda kroz prizmu njihovog identiteta definiranog stigmom i pritom se zanemaruju njihove individualne osobine. Kao posljedica svega ovoga, dolazi do toga da psihički oboljele osobe imaju manje izglede da dobiju zaposlenje, da zadrže posao ili da budu unaprijeđeni na odgovornija i bolje plaćena mjesta (42). Negativan učinak stigme se ogleda i u tome što ona otežava psihički oboljelom da pronađe partnera, da održi vezu ili da osnuje bračnu zajednicu. Također, ovim osobama se teže daje stan ili kuća u najam (43). Velikim dijelom, stigma je razlog zašto osoba sa psihičkim poremećajem vidi sebe kao nekog tko je bitno drugačiji od ostalih, a to u praksi znači manje vrijedan od drugih (44). Kao zaključno, može se reći da stigma izaziva ili pojačava osjećanje nemoći i produbljuje njenu socijalnu otuđenost. Velikim dijelom zbog stigme, psihički oboljele osobe potcjenjuju vlastite sposobnosti, povlače se i pate (45).

Negativni učinci stigme psihičkog poremećaja na obitelj oboljelog

Negativni učinci stigme se odražavaju i na obitelj psihički oboljele osobe. Obitelj trpi ne samo zbog toga što njeni članovi moraju posvetiti posebnu pažnju psihički oboljelom, već i zbog raširenog mišljenja da su psihički poremećaji nasljedni pa i oni osjećaju teret stigme. Sa psihički oboljele osobe stigma se prenosi na njegovu obitelj. U društvenoj komunikaciji s njima, ljudi im daju do znanja da ih sažaljevaju i da su uz to zabrinuti za njihovo psihičko zdravlje (20).

Negativni učinci stigme psihičkog poremećaja na psihijatrijsku djelatnost

Stigma psihičkog poremećaja je najznačajniji izazov na koji mora odgovoriti suvremena psihijatrijska djelatnost u mjeri u kojoj stigma obezvrijeđuje uspjeh koji se postiže u tretmanu

pojedinih psihičkih bolesnika (22). Ona je najvažnija prepreka pružanju mentalno zdravstvene zaštite psihički poremećenim ljudima i povećanju kvalitete njihovog života (38).Psihički oboljele osobe na sebe gledaju sa sramom i stidom te često nastoje prikriti da imaju psihičkih poteškoća, a to dovodi do izbjegavanja da se zatraži stručna pomoć (46). Provedena istraživanja ukazuju na to da manje od jedne trećine psihički oboljelih osoba traži psihijatrijsku pomoć. Kod nekih psihičkih poremećaja prognoza je povoljnija, ukoliko se prije krene s liječenjem (47). Glavna zadaća psihijatrijske djelatnosti je da se psihijatrijska pomoć pruži što većem broju psihički oboljelih, da im se poboljša kvaliteta života te da se osposobe za što veći broj društvenih uloga koje su igrali prije nego što su se razboljeli (20).

Nadalje, negativan utjecaj stigmatizacije se ogleda i u tome što ona narušava pravo osobe sa psihičkim smetnjama te znatno utječe na sustav zdravstvene zaštite i dovodi do kasnog prepoznavanja i dijagnosticiranja bolesti, slabijeg terapijskog učinka i potiče stres koji još više ugrožava zdravlje pojedinca te izolira bolesnika iz društva. Ona predstavlja brojne prepreke u životu stigmatizirane osobe među kojima se ističe kao jedna od najtežih prepreka, a to je prepreka prevencije samoubojstva (27).

PROVOĐENJE ANTISTIGMA PROGRAMA

Zbog sve veće učestalosti psihijatrijskih oboljenja u velikom se broju zemalja pokreću razne akcije za borbu protiv stigmatizacije psihijatrijskih pacijenata. Cilj ovakvih programa je vraćanje dostojanstva oboljelima i ustanovama u kojima borave (48). U moderno doba sve se više promiču takvi programi borbe protiv stigmatizacije. Stigmatizaciji izrazito pridonose neznanje i strah te neprijateljstvo prema oboljelima. Stoga je glavni cilj ovih programa utjecaj na navedene čimbenike. Neznanje je moguće ispraviti edukacijom o psihijatrijskim poremećajima (36). Edukacijom je potrebno pružiti informacije koje će se suprotstaviti pogrešnim vjerovanjima ili mitovima iz kojih proizlaze razne predrasude i ponašanja (49). Uz to, važno je utjecati na strah smanjujući ga kao i stvaranje pozitivne slike o oboljelima čime se smanjuje neprijateljstvo. Nerijetko se mediji povezuju sa stigmatizacijom pa je javnost podložna prihvaćanju stavova koje nameću razni mediji. Također, često se mogu čuti pogrdni nazivi za oboljele iz medija. Djelovanje različitih udruga može pridonijeti većoj zainteresiranosti javnosti za ovaj problem. U središtu aktivnosti koje se provode protiv stigmatizacije su edukacijski programi. Cilj ovakvih programa je smanjenje stereotipa i predrasuda o psihički oboljelim osobama. Uz edukaciju potrebno je naglasiti važnost kontakta sa psihijatrijskim pacijentima. Kontakt se posebice odnosi na edukaciju medicinskih djelatnika tijekom njihova obrazovanja. Svrha kontakta s oboljelima je smanjenje straha i otpora (36).

Velike promjene u negativnim razmišljanjima društva te u izravnoj borbi protiv stigme može napraviti medicinsko osoblje svojim stalnim usavršavanjem u struci i educiranjem javnosti. Primjenjujući antistigma programe zdravstveni radnici ruše temelje stigmatizacije i omogućuju oboljelima kvalitetnije liječenje (50,51). Uz sve navedeno, nerijetko se javlja i samostigmatizacija. Veliki broj psihički oboljelih osoba prihvaća stavove koji su stigmatizirajući. Kako bi se izbjegla samostigmatizacija važno je uključiti psihosocijalne metode koje pridonose osnaživanju pojedinca (49). Programima protiv samostigmatizacije moguće je na nju utjecati. Tim programima se želi potaknuti oboljele da se nauče nositi s ovim problemom, a to se može postići na sljedeće načine:

1) Pacijentovim prihvaćanjem bolesti i zauzimanjem stava kako ona nije sramotna, već da je sramotno optuživati osobu oboljelu od psihičke bolesti,

2) Prepoznavanjem i reagiranjem na diskriminaciju,

3) Provođenjem edukacije okoline o psihičkim bolestima te tako smanjiti predrasude,

4) Procjenom šteta i koristi od otkrivanja bolesti,

5) Uviđanjem vlastitih stavova prije samog oboljenja u svrhu sagledavanja kako je lako zauzeti negativne stavove (52).

ULOGA SOCIJALNOG RADNIKA U ZDRAVSTVU

Socijalni rad je stručna i znanstveno zasnovana djelatnost usmjerena na prevenciju, otklanjanje i nadilaženje stanja i situacija koje se mogu pojaviti kao kočnica razvoja i napretka kako svakog pojedinca, tako i društva u cjelini. Socijalni radnik ima značajnu ulogu u zdravstvenom sustavu (1). Kao član tima u procesu liječenja i rehabilitacije oboljelih osoba, socijalni radnik je zadužen za tzv. socijalne intervencije u radu s pacijentom uz konzultacije s liječnikom kojeg obavještava o toku socijalne terapije, a liječnik informira socijalnog radnika o činjenicama o oboljeloj osobi koje mogu utjecati na socijalno-terapijski plan i socijalne intervencije (53). U zdravstvenom sustavu, socijalni radnik predstavlja važan segment formalnog sustava podrške, kako za same korisnike usluga zdravstvenog sustava tako i za članove obitelji pacijenata. Postoji širok dijapazon uloga i poslovnih aktivnosti koje socijalni radnici obavljaju u svakodnevnom radu, a neki od njih su: informiranje, obavljanje administrativnih poslova, savjetovanje, sudjelovanje u kriznim intervencijama te poduzimanje hitnih nezdravstvenih intervencija, individualni i grupni rad s pacijentima, suradnja s lokalnom zajednicom i slično (54). Socijalni radnici predstavljaju sastavni dio multidisciplinarnog tima te radeći u timu s liječnicima, medicinskim sestrama i drugim medicinskim osobljem senzibiliziraju pružatelje medicinskih usluga za socijalne i emocionalne aspekte pacijentove bolesti. Sudjeluju u poslovima kao što su: inicijalni razgovor s pacijentom i obitelji, psihosocijalna procjena pacijenta, podrška pacijentu u razumijevanju bolesti i različitih opcija medicinskog tretmana bolesti, kao i razumijevanje posljedica medicinskog tretmana, ali i odbijanja tretmana (55). Kao ravnopravni član stručnog tima, socijalni radnik je uključen u cjelokupan tijek liječenja i rehabilitacije pacijenta. On predstavlja sponu između bolnice i socijalne sredine iz koje pacijent dolazi i u koju se vraća. Cilj takvog liječenja je što brži oporavak i povratak pacijenta u socijalnu sredinu uz odgovarajuće socijalno funkcioniranje i poboljšanje kvalitete života (56). Prema tome, uloga socijalnog radnika je dvojaka. S jedne strane on je veza, odnosno posrednik između ustanove i socijalne sredine iz koje pacijent dolazi i u koju se vraća. S druge strane, socijalni radnik ima i andragošku ulogu, što znači da pacijenta upućuje na koji način sam, ukoliko je to u mogućnosti, može ostvariti određena prava (1).

Uloga socijalnih radnika često zahtijeva visoko specijalizirane intervencije u najintimnija i najsloženija područja života pojedinaca i obitelji, što se može negativno odraziti u osobnom i profesionalnom funkcioniranju socijalnih radnika (57). Socijalni radnici koji rade u području zaštite mentalnog zdravlja u zdravstvu uz svoju ulogu vežu stručne zadatke, profesionalne vrijednosti, interakciju s drugim strukama i rad u timu te kao poteškoće u radu navode marginalizirani položaj socijalnih radnika u zdravstvu, nejasno određen djelokrug rada, količinu posla i doživljaj reforme zdravstva. Kao preporuke za unaprjeđenje položaja socijalnih radnika u zdravstvu navode: unaprjeđenje statusa struke, priznavanje mogućnosti samostalnog rada, osiguravanje razmjene iskustva s kolegama i osobnog razvoja te edukaciju (58).

Komora socijalnih radnika ukazuje na važnost socijalnog rada u području zdravstva, navodeći da njihov rad smanjuje troškove liječenja, posebno kod kompleksnih socijalnih situacija s kojima pacijenti dolaze u bolnicu te smanjenja broja rehospitalizacije pacijenata. Također

navode i da socijalni radnici u zdravstvu teže čine vidljivim identitet struke socijalnog rada nego što je to u području socijalne skrbi te ukazuju na važnost njihova djelovanja kroz Sekciju socijalnih radnika u zdravstvu pri Komori socijalnih radnika (59).

ZAKLJUČAK

Na temelju dosadašnjih spoznaja, može se zaključiti da za psihički oboljelu osobu osim samog oboljenja, stigmatizacija predstavljaj još jedan dodatan problem s kojim se treba nositi. Stigmatizacija osoba koje boluju od psihičkih bolesti nosi sa sobom brojne negativne posljedice jer oslabljuje svoje žrtve, pojačava osjećaj otuđenja te tako nepovoljno utječe na tijek bolesti.

Kako bi se suzbila stigmatizacija psihički oboljelih osoba, iznimno je važna obrazovanost čitavog društva, a posebno obrazovanost putem medija. Mediji imaju značajnu ulogu u poboljšanju društvene slike o psihički oboljelim osobama. Oni mogu ispravnim informacijama o liječenju psihičkih bolesnika pridobiti pažnju javnosti, koja onda može izvršiti pozitivan pritisak u pravcu poboljšanja kvalitete liječenja. Stavovi cijelog društva trebaju poprimiti pozitivan smisao kako bi oboljeli dobili našu podršku, a ne odbijanje, ranije se javljali na liječenje te ga ne prekidali sve dok liječnik ne odredi da je vrijeme za to. Borbu protiv stigme trebaju provoditi građani svih dobnih skupina. Na taj način se oslobađamo negativnih stavova koji nas priječe da budemo pravedniji i humaniji, ne samo prema psihičkim bolesnicima, već prema svima, a upravo takav cilj ima i ovaj rad.

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STIGMATIZATION OF PEOPLE WITH MENTAL ILLNESS

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ABSTRACT

This article presents the historical development of stigmatizing attitudes toward people with mental disorders, the negative effects this problem carries and possible ways of overcoming this problem.The development of psychiatry dates far back in history. It is believed that primitive tribes viewed mental illness as a higher force that could not be altered, and the isolation of mentally ill was popular even in those distant times.Psychiatric patients have always been considered as dangerous and criminals.This is supported by the fact that such people were tortured in various camps, degraded and labeled.Psychiatric institutions are always located outside cities, on mountains, far from other people. This is seen even today.All these factors contribute to the creation of stigmatization not only among the general population but also among health professionals.It was only in the 18th century that some light was shed on psychiatry with the removal of shackles and chains from patients.Regardless of the efforts made to reduce stigma, fear and caution are still present among the general population while contacting psychiatric patients.What pleases us is the fact that due to the increasing number of mental illnesses, programs are being created to combat stigmatization.Such programs aim to restore the dignity of sick people, as well as the institutions where they stay.Lack of knowledge and understanding of mental illness contributes significantly to stigmatization.Therefore, the education of patients, their families and the wider public is of extreme importance.All this has the same goal, which is better understanding of mentally ill and decrease of stigmatization.

The objective of this article is to show what affects the creation of stigmatizing attitudes towardthe mentally ill, what negative consequences such attitudes lead to, and what are the possible ways to overcome them.

Key words: stigmatization, mental illness, psychiatric patient

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THE IMPORTANCE OF CORRECTIVE EXERCISES IN THE TREATMENT OF SCOLIOSIS IN SCHOOL-AGE CHILDREN

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SUMMARY

Scoliosis is the most common orthopedic deformity in children, characterized by a three-dimensional curvature of the spine; lateral inclination in the frontal plane, rotation in the transvesical plane and alteration in the sagittal plane (anterior or posterior). The problem of improper posture in children is one of the significant problems of the modern way of life, and it appears at an increasingly early age. It is estimated that there are around 10.5 million scoliosis sufferers on the planet. About 60% to 80% of all cases are detected in women, and they are five to eight times more likely to progress and require treatment. Progression occurs during the years of growth, from the age of 7 the growth is 36%, and from the age of 10 even 52%.

Specific exercises are the main instrument of conservative treatment of scoliosis. They have been used since 500 BC, when Hippocrates, followed by Galen, introduced their use as a means of maintaining the flexibility of the chest wall.

Over the years, various methods have been developed, the most famous of which is Schroth (Germany), then Bspts (Spain), Seas (Italy), Dopomed (Poland). The exercise program consists of strengthening certain muscle groups and of performing respiratory exercises and it contains: breathing exercises, stretching exercises for shortened muscles, exercises for strengthening the paravertebral musculature, and posture exercises. A good and effective kinesiotherapy program should be based on a kinesiological analysis of selected kinesiological operators.

Key words: treatment, scoliosis, kinesiotherapy, exercise, child

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INTRODUCTION

Scoliosis is one of the oldest known human deformities (1). It is also probably the most common orthopedic deformity in children. According to the definition of the Scoliosis Research Society (SRS), scoliosis is a lateral curvature of the spine that is 10 or more Cobb degrees as measured on an x-ray taken in a standing position. (2). According to research results, it is now considered to be caused by several biomechanical and genetic factors, and it occurs in women more often than men (3). We distinguish the following types of scoliosis: Idiopathic scoliosis - the cause is unknown and it is considered a diagnosis of exclusion, which means it is diagnosed after all other potential causes have been excluded (4). Congenital scoliosis - means being born with this condition. This type of scoliosis begins with the formation of the spine before birth (pathologically formed vertebrae present at birth). It can be associated with other health problems, such as heart and kidney problems (2). Neuromuscular scoliosis - Any medical condition that affects the nerves and muscles can lead to scoliosis. It can occur as part of cerebral paralysis, muscular dystrophies and myopathies, as a result of spinal cord injury, spinal tumors or spinal cord cleft. Syndromic scoliosis - They occur as part of various syndromes, for example Marfan syndrome, neurofibromatosis, Ehlers-Danlos syndrome, Prader-Willi syndrome, brittle bone disease (lat. osteogenesis imperfecta) and various bone dysplasias (5). Thoracogenic scoliosis - They occur as a result of surgical opening of the chest cavity (thoracotomy) at an early age. Children undergoing this procedure have a 20% higher risk of developing scoliosis during their lifetime, which is a significant increase compared to the relative risk of scoliosis in healthy children. (4). The degree of severity of scoliosis is determined according to Cobb degrees measured on an X-ray taken in a standing position, taking into account the remaining growth time (3). Depending on the degree of spinal curvature according to Cobb, scoliosis can be divided into four groups, namely:

1. from 0 to 20° – conservative treatment - kinesiotherapy, sports with antiparamorphic effect and lifestyle adjustment
2. from 25 to 35° – conservative treatment - brace and kinesiotherapy
3. from 35 to 50° – application of braces, exercises and plaster correction
4. from 50 to 90° – operative treatment (6).

In this paper, we looked at the definition and division of scoliosis, and we will present the pathogenesis, progression and treatment of the mentioned disease. The aim of this paper is to see the importance of conservative treatment with kinesiotherapy.

PATHOGENESIS AND PROGRESSION

In early childhood, scoliosis occurs equally in both sexes. However, as children enter adolescence, scoliosis is diagnosed in about 4% of all children between the ages of 10 and 14. It is more common in girls than in boys (7). About 60% to 80% of all cases are detected in women, and they are five to eight times more likely to grow and require treatment. Progression is most common during the years of growth, from 7 years of age it is 36%, and from 10 years of age even 52%. Severe curves may, however, progress during adulthood. Scoliosis appears in about 4% of the world's population, 75-90% of which is actually idiopathic scoliosis (7, 8). The prevalence of scoliosis depends on the size of the deformation in degrees (9). Namely, the prevalence of scoliosis with more than 10 degrees of Cobb curve is 2-3%, from 21 to 30 degrees it is much less common and is found in 0.3-0.5% of the population, scoliosis from 31 to up to 40 degrees is even rarer, found in only 0.2% of the population, and scoliosis with more than 40 degrees of curvature occurs in less than 0.1% of the world's population (10). In the general population, idiopathic scoliosis occurs in 2-3%, in most cases it appears during the growth

spurt phase, from the ages of 5-8 or 11-14 (11). The Scoliosis Research Society recommends that girls be screened twice, at ages 10 and 12 (5^{th} and 7^{th} grade), and boys once at age of 12 or 13 (8^{th} or 9^{th} grade). There is much controversy about the benefits of school screening (12). Some of the risk factors that are considered to favor the development of scoliosis are: genetic, biomechanical and a combination of metabolic and growth factors (13). When we talk about congenital defects, the number of cases can rise to 75%, and the rest is caused by poliomyelitis, cerebral paralysis, juvenile osteoporosis and other diseases. (8). The literature provides information that inheritance is multifactorial or autonomously dominant (14). Abnormalities of the building protein collagen and related metalloproteinase enzymes are mentioned as biological factors (15). Although we do not know for sure what causes most cases of scoliosis, it should be noted that the family history is positive in almost 30% of patients. Some studies indicate that the excessive growth of the spine in adolescence is a key factor in the pathogenesis of scoliosis. Progression is more likely in women, subsequently, the younger the chronological and bone age, the more severe the scoliosis. (9). The fact is that approximately 1 in 3 children whose parents have scoliosis will develop it. Doctors do not yet know exactly which gene causes this (12). Of the genetic risk factors, female gender and height stand out the most. Also, the appearance of scoliosis is often associated with Turner syndrome, one of the most common chromosomal abnormalities in women. As many as 10% of patients with Turner syndrome develop scoliosis (16).

TREATMENT OF SCOLIOSIS

Children and youth with mild scoliosis should be monitored regularly to monitor possible worsening of the disease, various sports activities, stretching exercises and specific exercises for the treatment of scoliosis should be recommended. (3). The prognosis depends on where the curvature is located, how severe it is, the age at the time of the first menstruation, the gender, the age of the patient and when the symptoms began. Half of the children with detected scoliosis require treatment and evaluation. Early detection and treatment can stop further distortion (8). The treatment of scoliosis is usually divided into conservative and surgical treatment, whereby physical therapy together with plastering and orthotic treatment belongs to the conservative type of treatment. According to the degree of riveting, about 10% of patients need conservative treatment, and 0.1-0.3% require surgery. (3, 17). The first method we will mention in treatment is observation and evaluation. Regular check-ups are recommended every six months using the Adams bending test with the use of a scoliometer or a similar instrument to measure possible worsening of the rib hump. (18). Follow-up is reserved for patients who have reached skeletal maturity and have non-progressive scoliotic curves (16). In the case of medium-severe scoliosis, more frequent controls, more intensive practice of specific exercises for scoliosis along with physical activity and wearing an orthosis are required. An orthosis is a brace that is custom-made for each patient. By pressing on the appropriate points, it corrects the position of the spine and prevents the worsening of scoliosis (3). When the diagnosis in an adolescent with scoliosis is of 25 to 40 degrees according to Cobb, treatment with an orthosis - brace is indicated. The goal of brace treatment is to prevent the worsening of scoliosis and avoid surgery (18). Children with severe scoliosis often need surgical treatment. These are demanding operations that carry a certain risk of complications, which is why they are performed when all methods of conservative treatment have been exhausted (3). Surgical treatment is reserved for curves that are generally greater than 50 degrees in adolescents and adults. The goals of surgical treatment are to achieve correction of the curve and prevent the

progression of the curve by fusing the spine at an optimal level of safe correction of the deformity. (12). This type of treatment will not reduce morbidity or improve the quality of life of an adolescent patient when he reaches adulthood, which is why the prevailing opinion is that surgical treatment is not justified on the basis of medical indication (19). Scoliosis and its treatment can cause psychological problems. Wearing a collar or trough can cause anxiety about looking different from your peers, and hospitalization and surgical treatment bring their own difficulties. However, there is no alternative because without treatment the deformity can progress. Conversation and encouraging the child can be helpful (8). That physical deformity can also have a psychological effect on the patient was shown by the research of Payne and colleagues, who confirmed on 685 patients that scoliosis among adolescents is a significant risk factor for psychosocial issues and behavior that can compromise health (20).

WHAT ARE THE SPECIFIC EXERCISES FOR THE TREATMENT OF SCOLIOSIS?

Considering that the treatment of idiopathic scoliosis can be conservative or operative, the main forms of conservative treatment are: therapeutic exercises, electrostimulation and spinal orthosis. Conservative treatment of scoliosis includes: a) Lyonaise, Side-Shift, Dobosiewicz, Schroth and other kinesiotherapy methods (21). From a kinesiological viewpoint, the real subject of interest are the so-called small (minor) scoliosis, and the most commonly used method is the Schroth (6). It is maintained by exercises, strengthening certain muscle groups and performing respiratory exercises. The program contains: 1. breathing exercises 2. stretching exercises for shortened muscles 3. exercises for strengthening the paravertebral musculature 4. posture exercises. Exercising is on average 60 minutes long (22). The results of conservative treatment of children with progressive scoliosis treated while the angulation was still below 30 degrees showed that proper conservative treatment stops the progression and changes the natural course of scoliosis (23). Kinesiology research shows that systematic exercise can have a positive impact on the prevention and treatment of scoliotic bad posture and on scoliosis itself. Specific exercises have been proven to reduce back pain and slow down the progression of the disease. Kinesiotherapy is already applied in cases of early detected scoliosis and lateral curvatures as low as 10° according to Cobb. Regardless of how kinesiotherapy is applied, it must be planned and programmed specifically for each child (22). Conservative treatment of idiopathic scoliosis, especially kinesiotherapy, is not widely appreciated due to suspicions of low efficiency compared to surgical treatment. A conservative method of treatment has been developed, asymmetric mobilization of the trunk in strictly symmetrical positions, and it makes it possible to stop the progression of scoliosis, or even reduce the lateral curvature of the spine and the angle of rotation, assuming adequate cooperation of the patient and his family (24). Today, we can talk about the successful application of kinesiotherapy based on the experience of an increasing number of individuals and specialized institutions in the world, but most often when it comes to the treatment of scoliotic bad posture and scoliosis with a curvature angle of up to 20°(25). In Croatia, Katarina Schroth's exercises are mostly applied. These are specific exercises that treat the spine three-dimensionally. They consist of stretching exercises, trunk derotation and controlled breathing exercises. They require cooperation and motivation, which is why they are not suitable for younger children, while exercises according to Vojta's method are practiced for children younger than 7-8. (3). Schroth exercises may be more beneficial for patients with scoliosis who have a Cobb angle of 10 to 30° than for those with a Cobb angle greater than 30°. Patients should exercise for at least a month to have a better effect. Therefore,

therapists should consider the patient's initial curve status and exercise duration before prescribing a Schroth exercise program. Through research, it has been established that it has the greatest effect on the strength of the core muscles, and after the Schroth exercise, the structural deformity also changes (26). In their research, Schreiber et al. compared the group in which observation or the placement of a corset was included to the group in which the Schroth method was also applied. The results showed that there was a statistically significant improvement in the group that applied the Schroth method (27). Non-specific exercises cannot be considered as effective as exercises that use a well-defined corrective routine specific to the scoliosis pattern (28). According to the kinesiotherapy program based on elements of self-correction, stretching of weakened muscles and stimulation of the central nervous system, which was applied 3 times per week for 45 minutes, improvement was recorded in 63% and 13% of patients, respectively (29). When we speak of more severe cases of scoliosis, possible rotation of the vertebra or the entire spine around the longitudinal axis should be determined. In such cases, in the first phase of rehabilitation, de-rotation exercises are applied, followed by stretching and strengthening of the laterally twisted spine. In the case of double or multiple curvature, rehabilitation should be focused on the so-called primary distortion. Tribastone believes that in all uncertain cases it is better to intervene with symmetrical action, than to risk with asymmetrical action of doubtful effectiveness. Milder forms of scoliosis are treated with symmetrical exercises and procedures, while more severe scoliosis requires a combination of symmetrical and asymmetrical exercises in order to stop possible further progression, i.e. to reduce the existing condition (24,22). A retrospective study of children with idiopathic thoracic dextroscoliosis with a magnitude of thoracic curve between 20 and 35 degrees proved that the inclusion of kinesiotherapy in the comprehensive treatment of idiopathic scoliosis varied in the improvement of muscle strength (satisfactory and moderate) in almost 80% of children, while the correction of the curve was small in approximately 42.1% of cases (30). In modern medicine, swimming is often recommended as a useful preventive or corrective tool in children and youth with improper posture and damage to the movement system. Breaststroke and backstroke are the best functional trainings for postural impairment. Breaststroke in scoliosis relieves tight paravertebral tension of the back musculature and strengthens trunk muscles (31). Conservative forms of scoliosis treatment can often lead to the needlessness of surgery (32).

CONCLUSION

Movement therapy is an important part of some therapy as a procedure to treat or alleviate a condition with the goal of restoring normal functioning. Every therapy, including kinesiotherapy for children with disorders and diseases of the movement system, should be adapted to the individual. For this reason, physiotherapists have the task of organizing movement and physical activity as movement therapy in order to have its own purpose, direction and goal. Analogously to the development of technology and a sedentary lifestyle, scoliosis is becoming more and more common in children, therefore early detection and the inclusion of specific exercises are of great importance in order to prevent the progression of the deformity and then correct it. A good and effective kinesiotherapy program for scoliosis should be based on a kinesiological analysis of selected kinesiological operators and a desirable combination of isotonic and isometric contractions, accompanied by breathing techniques. Conservative measures such as specific exercises, casts and braces can delay the (frequent) need for surgery or even make surgery unnecessary, especially in early childhood idiopathic types of scoliosis.

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ZNAČAJ KOREKTIVNIH VJEŽBI U LIJEČENJU SKOLIOZE U DJECE ŠKOLSKE DOBI

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SAŽETAK

Skolioza je najčešća ortopedska deformacija kod djece, karakterizira je trodimenzionalna iskrivljenost kralježnice; lateralna inklinacija u frontalnoj ravnini, rotacija u tranzvezalnoj ravnini i alteracija u sagitalnoj ravnini (anteriorna ili posteriorna). Problem nepravilnog držanja u djece, jedan je od značajnih problema suvremenog načina življenja, javlja se u sve ranijoj životnoj dobi. Procjenjuje se da na planeti imamo oko 10,5 milijuna oboljelih od skolioze. Oko 60% do 80% svih slučajeva otkriva se u ženskog spola te je pet do osam puta veća vjerojatnost da će se povećati i zahtijevati liječenje. Progresija se događa tijekom godina rasta, od 7 godina je 36%, a od 10 godina čak 52%.
Specifične vježbe predstavljaju glavni instrument konzervativnog liječenja skolioze.
Koriste se još od 500. godine prije Krista, kada je Hipokrat, a za njim Galen, uveo njihovu upotrebu kao sredstva za održavanje fleksibilnosti stijenke prsnog koša.
Tijekom godina razvile su se različite metode, od kojih je najpoznatija Schroth (Njemačka), zatim Bspts (Španjolska), Seas (Italija), Dopomed (Poljska). Program vježbi sastoji se od jačanja određenih mišićnih skupina i provođenjem respiratornih vježbi, sadržava: vježbe disanja, vježbe istezanja skraćenih mišića, vježbe za jačanje paravertebralne muskulature, te vježbe stava. Dobar i učinkovit kineziterapijski program treba biti zasnovan na kineziološkoj analizi odabranih kineziloških operatora.

Ključne riječi: liječenje, skolioza, kineziterapija, vježba, dijete

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LINEAR ACCELERATORS IN TELERADIOTHERAPY

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ABSTRACT

Radiotherapy is a therapeutic method of local treatment of tumors and other types of diseases using high-energy ionizing radiation. Teleradiotherapy is a type of radiation in which the radioactive source is located inside the teleradiotherapy device. The devices used in teleradiotherapy are a linear accelerator and an almost abandoned cobalt unit. Accelerators are devices that, using electric and magnetic fields, accelerate charged particles to high speeds, sometimes even to speeds that are slightly less than the speed of light. Diagnosis and treatment of cancer are complex processes that require the knowledge and expertise of oncologists first, and then other members of the oncology team. The accelerated development of technology is proportional to the development of linear accelerators. Experts continuously work on improving them with the aim of using ionizing radiation as precisely and efficiently as possible for therapeutic purposes. Radiotherapy is a treatment method that implies precision in the deepest sense of the word. Precision must be present with the oncology team when creating the radiation plan, the medical radiology engineer when handling the linear accelerator and positioning the patient, as well as with the device itself. Accordingly, it is necessary to constantly carry out quality control of the linear accelerators themselves. Constant education of the oncology team, i.e. experts who perform radiotherapy using a linear accelerator, is extremely important in order to ensure the best possible care.

Key words: Linear accelerator, radiotherapy, teleradiotherapy

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INTRODUCTION

Radiotherapy is a therapeutic method of local treatment of tumors and other types of diseases using high-energy ionizing radiation by delivering the absorbed dose to the target volume with as little radiation as possible to the surrounding healthy tissue (1). Depending on the type of cancer and the stage of the disease, four types of radiotherapy can be distinguished: curative, neoadjuvant, adjuvant and palliative (2). Radiotherapy can be administered as a single treatment modality or can be combined with other treatment modalities such as chemotherapy, immunotherapy, hormonal therapy or surgery (3). The main mechanism of radiotherapy is to produce irreversible damage to the DNA molecule in malignant cells, using ionizing radiation (4). Radiotherapy is not only used in the treatment of malignant diseases, but also in the treatment of benign diseases such as: keloid scars, trigeminal neuralgia, acoustic schwannoma, pterygium, heterotopic ossification and arteriovenous malformation in the brain (5). It can be divided into teleradiotherapy (external radiation) and brachyradiotherapy (radioactive source is located in or on the patient's body) (6). Teleradiotherapy is performed with a radiation source that is far from the human body. As a source of external radiation, linear accelerators (7) are most often used. In teleradiotherapy, planning with computerized tomography - CT (*Computed tomography)* plays an important role, which provides a three-dimensional simulation of the patient's position. This enables determination of the best approach to the target volume, i.e. the tumor and its surrounding, healthy tissue. Before radiation with a linear accelerator, it is important to position the patient correctly every time in order to avoid errors in radiation and thereby increase therapeutic efficiency (8). The aim of this review paper is to analyze and explain the principle of operation and the application of linear accelerators in teleradiotherapy based on current knowledge.

GENERATIONS OF LINEAR ACCELERATORS

The accelerators that were first created were linear accelerators (LINAC), and the creator of the concept was Gustav Ising (1924). Over the past 40 years, medical linear accelerators have gone through five different generations in the following features:

- Low energy photons (4–8 MV): flat beam; fixed smoothing filter; external wedges; symmetrical jaws; single portable ionization chambers; isocentric assembly.
- Photons of medium energy (10–15 MV) and electrons: bent beam; moving target and smoothing filter; scattering foils; double transmission ionization chamber; electronic cones.
- High-energy photons (18–25 MV) and electrons: dual energy photons and multiple electron energies; achromatic bending magnet; dual foil scattering or electronic pen beam scanning; motorized wedge; asymmetric or independent collimator jaws.
- High energy photons and electrons: computer controlled operation; dynamic wedge; electronic portal imaging device; multi-lamellar collimator - MLC (*Multi-Leaf Collimator*).
- High energy photons and electrons: intensity modulation of the photon beam with MLCs; full dynamic conformal dose delivery with intensity modulated beam produced with MLC (9).

Chronologically, the first type of accelerator is the Cockroft-Walton accelerator. It consists of an accelerator tube in which acceleration is performed, a high voltage source that is connected in a special way to the system of accelerator electrodes and the detector system. The essence of this accelerator is a voltage source and a system of electrodes that accelerate ions. The high voltage generator consists of diodes and capacitors connected in a special way that enables a gradual increase in the voltage on the electrodes in the accelerator tube.

Another type of accelerator is the Van de Graaff accelerator, which is considered an electrostatic

accelerator. The operation of this accelerator is based on the definition of the potential of a conductor, according to which the potential is the work that must be done to transfer a unit charge from the conductor to infinity. In this accelerator, the charge is transferred from the source to the moving insulating tape by means of a spike. Through this strip, the charge is transferred to the collecting electrode, which collects it and leads it to the hollow electrode. In this way, a very large potential difference can be achieved, which is later used to accelerate the particles (10).

WORK PRINCIPLES

Linear accelerators use only an electric field to accelerate particles. They consist of a vacuum tube and hollow cylindrical electrodes, through which it passes. The even electrodes are connected to one and the odd electrodes to the other pole of the high-frequency alternating voltage generator. There is a small space between the electrodes. At its beginning is the source of the particles, and at the end is the target. Today's linear accelerators are constructed in a slightly different way (11). In the vacuum tube, which can be several kilometers long, there are cylindrical electrodes that are connected to the poles of an alternating source of high-frequency voltage. At the beginning of the tube there is a source of particles to be accelerated, while the target is placed at the other end of the tube. As they move between the electrodes, an electric field acts on them and accelerates them. Let us assume that a positive ion is accelerated in such an accelerator. At the beginning, the first electrode is negative and attracts the ion, which starts to accelerate. When the ion enters the electrode cavity, the acceleration stops and it continues to move in a straight line, by inertia (12).

At the moment when it leaves the first electrode, the polarization of the electrodes changes and the first electrode becomes positive and the second negative. The process is repeated, the ion accelerates to the second electrode, enters it, moves by inertia and when leaving the electrode, the polarization changes again. The particle continues to accelerate towards the third electrode and the process continues. The frequency of the voltage is adjusted by changing the polarization and matching it with the exit of the particle from the electrodes. The length of the electrodes and the distance between adjacent electrodes increases uniformly. The speed and energy that the particle will have upon exiting the accelerator depends mostly on the length of the accelerator. A longer length of the accelerator implies a higher energy of the particles. In a linear accelerator, particles can be accelerated to relativistic speeds,so the relativistic effects of mass increase, length contraction and time dilation must be taken into account during their construction (13).

The goal of these devices is to achieve high accelerations of charged particles. They work on the principle of emission of charged particles at one end and gradual acceleration of these particles in a straight vacuum tube until they reach kinetic energy (14).

BASIC PARTS

Linear accelerators consist of multiple separate technological components that function as a single unit to accelerate electrons to high energies with high-frequency waves, striking a target and producing a photon beam, which is then aligned, shaped, and measured prior to clinical use (15). The main components of a linear accelerator are: accelerator tube, electron gun, accelerator waveguide, high-frequency wave source (klystron or magnetron), electron beam rotation magnet, accelerator head, therapy table, control panel, monitoring system (16) (Figure 1).

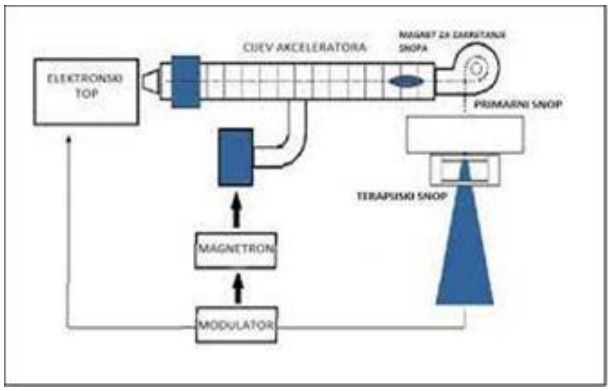

Figure 1. Schematic representation of the main components of the linear accelerator (17)

An accelerator tube can be thought of as a series of resonant cavities. It serves to accelerate the injected electrons from the electron gun to megavoltage kinetic energies using radiofrequency electromagnetic waves (18). The electron gun produces electrons and injects them into the waveguide. Triode guns (anode, cathode and grid) are most commonly used (19). A magnetron is a source of high-energy radio frequency field that accelerates electrons (20). After accelerating through the waveguide, the electrons reach the accelerator head, which houses the electron beam rotation magnet. It serves for energy filtering of accelerated electrons, which it then directs towards the radiation beam modifiers (21).

The accelerator head models the monoenergetic electron beam for therapeutic purposes and directs it towards the isocenter. It consists of primary and adjustable collimators, x-ray production targets, radiation beam straightening filters, ionization chamber, MLCs, light field indicators and wedge filters.

The therapy table consists of a base and a movable flat plate that has movements in three axes: left-right (x-axis), up-down (y-axis) and rotation around a vertical axis (z-axis) that passes through the isocenter of the apparatus. The movement of the therapeutic table enables the execution of several types of radiation techniques, and can also be used to adjust the patient's position in order to irradiate tumors as best as possible while protecting healthy tissue to the maximum extent possible. At the same time, the head of the device must not come into contact with the table or the base of the table, nor with the patient's body. The board of the therapy table is made of a material that minimally attenuates radiation (carbon fibers), which enables the production of good quality images during the verification of the accuracy of the patient's positioning.

The information system located in the accelerator room in front of the therapy bunker monitors all parameters of the accelerator's functioning, parameters of the plan for the application of therapy: angle of the collimator gantry, field size, positioning of the table, position of the lamellae of the multi-lamellar collimator, static or dynamic mode of operation, type and quality of radiation, applied dose, radiation beam intensity, etc. The command room is equipped with audiovisual monitoring of the patient in the therapy room (bunker).

The installation of such a medical linear accelerator requires special design of the premises in accordance with local and international recommendations for protection against ionizing radiation. The aforementioned implies placing the device in a room (bunker) with concrete walls of a certain thickness, in order to attenuate the primary beam of radiation and the secondary scattering of photons as much as possible (22).

METHODS OF APPLICATION OF TELERADIOTHERAPY

If it is planned to irradiate tumors located deep in the body, beams of nominal acceleration potentials above 10 MV are used. Such high-energy photons can interact with atomic nuclei, which will lead to the creation of an unwanted neutron flux in photonuclear reactions (23). The probability of neutron formation depends on the energy of the photon and the atomic number of the material on which the photon hits. With an increase in the atomic number, the probability of

the occurrence of a neutron flux increases (24, 25). Such an isotronic neutron flow is dominated by neutrons with energies between 700 keV and 1 MeV (26). The described effect is extremely important for the radiological safety of staff and patients, especially in cases of application of modern radiotherapy techniques such as intensity-modulated radiotherapy - IMRT (*Intensity-Modulated Radiation Therapy*). Modern radiotherapy techniques use a large number of monitor units that represent the output measure of the linear accelerator. In advanced radiotherapy techniques, a large number of small beams are used for the most precise application of ionizing radiation for therapeutic purposes (27). In modern radiotherapy, such as IMRT in its various forms (step and shoot, sliding windows, volumetric modulated radiotherapy - VMAT (*Volumetric Modulated Arc Therapy*), tomotherapy), it is common to deliver 5 to 5 Gy to the target volume instead of 2 Gy. It is important to point out that each small photon beam is accompanied by neutron contamination approximately equal to the neutron contamination of the large beam. Since IMRT uses a series of small beams instead of one large beam for irradiation, the neutron contamination is increased several times (17, 28).

In radiology and radiotherapy, modern devices, including linear accelerators, apply artificial intelligence methods (machine and deep learning), although numerous studies indicate that there are numerous ethical problems in relation to its application (29). The development of computer software and technology has made it possible to image the human body in multiple dimensions (3D, 4D, 5D, 6D), which are used in various branches of medicine, such as interventional radiology in the display of intracranial aneurysms (30, 31), and radiotherapy in showing the position of anatomical structures in order to achieve the accuracy of the daily placement of the patient on the patient's table before the start of the radiation procedure with a linear accelerator (32). For this purpose, techniques for checking the positioning and geometry of radiotherapy have been developed, such as image-guided radiotherapy - IGRT (*Image Guided Radiotherapy*). The most commonly used IGRT equipment is EPID (*Electronic Portal Imaging Device*) and CBCT (*Cone Beam Computed Tomography*) (16).

Another very important modern teleradiotherapy method is robotic surgery (*Cyberknife*). It is a fully robotic non-invasive radiosurgical system that treats malignant as well as benign tumors anywhere in the body. The system includes a 6 MV x-ray linear accelerator and a collimator system with field sizes of 5 mm to 60 mm radius mounted inside the robotic arm. The system is fully automated and allows irradiation of diseased tissue from any position in 6 degrees of freedom, which enables maximum compliance with the radiotherapy principle of irradiating diseased tissue and protecting healthy tissue (16, 33).

Along with the application of photon therapy, there is a possibility of applying a therapeutic beam of neutrons, protons or some other heavy ions. This form of teleradiotherapy is called particle therapy. The most common clinical application of this method is proton therapy. With this type of therapy, a very high dose can be delivered to tumors at a certain depth, with maximum protection of the tissue located near the tumor on its painful side (34).

ROLES OF THE RADIOTHERAPY TEAM

Cancer diagnosis and treatment are complex processes that require the knowledge and expertise of medical staff. The purpose of the multidisciplinary team is to combine the professional knowledge, skills and experiences of each individual member of the team in order to ensure the best possible care. The radiotherapy team consists of: a clinical oncologist, a radiation physicist and a medical radiology engineer. Three-dimensional planning begins with a CT scan of the part of the body

that is planned for irradiation. The medical radiology engineer contours the organs at risk, and the clinical oncologist outlines the area to be irradiated. The radiation physicist then creates a radiation plan that is usually further evaluated and improved in cooperation with the doctor.What is particularly important in 3D conformal radiotherapy and teleradiotherapy with variable radiation intensity is a strict, continuous, daily check of the quality of radiation, all components of the device and radiation beams (16).

When applying teleradiotherapy with a linear accelerator, it is extremely important for the medical radiology engineer to position the patient in the appropriate position that has been planned, and to ensure that the patient remains calm during the radiotherapy treatment with appropriate fixation devices. In order to achieve the above, communication between the medical radiology engineer and the patient is extremely important at the very first setting for the start of the radiotherapy treatment. This implies clear and comprehensible communication by conveying basic information about the radiotherapy treatment process to the patient. Most patients come to the start of radiation in a state of stress for various reasons. These reasons can be: facing the unknown, fear of a closed space (bunker), fear for one's own health and possible side effects caused by radiotherapy treatment (burns, difficulty swallowing, etc.). Explanation of the radiotherapy treatment procedure (positioning of the patient, gantry positions, usual duration and course of treatment, etc.) by the clinical oncologist and the medical radiology engineer is extremely important in order to obtain cooperation from the patient during the radiotherapy session. After the patient has been placed in the appropriate position for radiation using appropriate equipment for fixing body position and image checks (EPID, CBCT), teleradiotherapy is performed using a linear accelerator. It is extremely important to have a proper psychological approach to the patient, which includes and implies support and understanding by the medical radiology engineer for all the patient's questions before and after the radiotherapy session.Numerous studies indicate that the correct psychological approach of healthcare professionals significantly reduces the anxiety and fear of patients who have been prescribed an examination with magnetic resonance (35) or CT (36, 37), and this approach has also been noted to increase the level of resilience of patients treated with radiotherapy and oncology patients in general (38-40).

CONCLUSION

The use of linear accelerators in teleradiotherapy has progressed throughout history and they play an important role in cancer treatment. The development of technology and computer programs led to the modernization of linear accelerators, which resulted in an improvement in their precision, which reduced the irradiation of adjacent healthy tissues during treatment. The technical characteristics of linear accelerators enabled the generation of more energy of supervoltage radiation for beams of photons (X-rays) and electrons, and thus the effective application of teleradiotherapy for almost all tumor localizations.

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LINEARNI AKCELERATORI U TELERADIOTERAPIJI

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SAŽETAK

Radioterapija je terapijska metoda lokalnog liječenja tumora i drugih vrsta bolesti uporabom visokoenergijskog ionizirajućeg zračenja. Teleradioterapija je vrsta zračenja u kojoj se radioaktivni izvor nalazi unutar teleradioterapijskog uređaja. Uređaji koji se koriste u teleradioterapiji su linearni akcelerator i gotovo napuštena kobaltna jedinica. Akceleratori su uređaji koji, pomoću električnog i magnetskog polja, ubrzavaju nabijene čestice do velikih brzina, nekada čak i do brzina koje su nešto manje od brzine svjetlosti. Dijagnoza i liječenje raka složeni su procesi koji zahtijevaju znanje i stručnost ponajprije specijalista onkologa, a potom i ostalih članova onkološkog tima. Ubrzani razvoj tehnologije proporcionalan je s razvojem linearnih akceleratora. Stručnjaci neprekidno rade na njihovom usavršavanju s ciljem što preciznije i učinkovitije primjene ionizirajućeg zračenja u terapijske svrhe. Radioterapija je metoda liječenja koja podrazumijeva preciznost u najdubljem smislu te riječi. Preciznost mora biti prisutna kod onkološkog tima pri izradi plana zračenja, inženjera medicinske radiologije pri rukovanju s linearnim akceleratorom i namještanju bolesnika, kao i kod samog uređaja. U skladu s time, potrebno je neprestano provođenje kontrole kvalitete samih linearnih akceleratora. Iznimno je važna konstantna edukacija onkološkog tima, odnosno stručnjaka koji provode radioterapiju primjenom linearnog akceleratora kako bi se time osigurala najbolja moguća skrb.

Ključne riječi: Linearni akcelerator, radioterapija, teleradioterapija

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RARE STROKE-RELATED PSYCHIATRIC DISORDERS

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ABSTRACT

Stroke related adult neuropsychiatric syndromes can be classified according to four axes: behavior or personality disorders, disorders of the perception identification of the self, other people, places, and time, cognitive disintegration (acute confusional state) and affective or mood disorders. Although cognitive dysfunctions or mood and affect disorders are very common after stroke and represent a very important factor in the recovery and rehabilitation, we will give short overview of rare behaviour or personality disorders related to stroke because we emphasize the need for a good knowledge of the these syndromes, in order to make valid diagnosis and start targeted etiological treatment.

Keywords: Stroke, Cotard syndrome, Capgras syndrome, Delusional misidentification, Neurobehavioral disorder

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INTRODUCTION

Stroke related adult neuropsychiatric syndromes can be classified according to four axes: behavior or personality disorders, disorders of the perception identification of the self, other people, places, and time, cognitive disintegration (acute confusional state) and affective or mood disorders (1). Although cognitive dysfunctions or mood and affect disorders are very common after stroke and represent a very important factor in the recovery and rehabilitation, we will give short overview of rare behaviour or personality disorders related to stroke such as athymormia, disprosodia (including „Foreign Accent syndroma“), Kluver Bucy Syndroma, Pathological Laughing and Crying with a description of „Fou rire prodromique Syndrome“ (2). Also it will be describe rare delusional misidentifications syndromas like Reduplicative Paramnesia, Cotard syndrme, Capgras syndrome, Fregoly syndrome, the syndrome of subjective doubles and peduncular hallucinations (1-3).

CAPGRAS SYNDROME

Capgras syndrome is a form of delusional misidentification. Patient is convinced that impostors, aliens, or robots have replaced one or several intimate persons and feel in danger. Surprisingly, the patient offten has reduced interest for what has happened to the original person after his substitution (3). The attribution of a false identity may also concern inanimate objects or domestic animals. Many cases of the syndrome with different etiological factors are described in the literature. It usually occurs in psychiatric disorders such as paranoid schizophrenia, schizoaffective and other affective disorders (2). Rarely this syndroma can occure due to right frontal and parieto-occipital stroke, as well as in other neurological diseases such as dementia, frontal meningioma, Parkinson's disease, as part of postictal delirium or multiple sclerosis relapse. Most patients responde well to the treatmentaimed at addressing the underlying cause of the disease (1-3).

Cotard syndrome "Zombie syndrome"

"I am a living corpse" is a favorite expression of people with this nihilistic delusion. Patients are convinced that they are dead, deny the existence of body parts or organs, and can even smell their decomposition. The syndrome was first described by the French neurologist Jules Cotard in 1880. in a patient with delirium. The syndrome usually occurs in patients suffering from dementia, anxious depression, or psychosis, but there are also rare reports of Cotard's syndrome in patients with cerebral ischemia localized in the right temporoparietal region, basal ganglia, and insular region (1-3).

Fregoli syndrome

Fregoli syndrome is a sort of paranoid hyperidentification. The patient believes that a stranger is actually a familiar person who has disguised himself to persecute him. This is usually associated with verbal threats and aggressive behavior of the patient. The similarity between two persons is not necessary for misidentification or hyperidentification to occur. It was first described in 1927 in London in a schizophrenic patient who thought she was being haunted by two theater actors. A similar syndrome is intermetamorphosis, where the patient believes that people reciprocally exchange their identities. Although it usually occurs as part of schizophrenic psychoses, this syndrome has also been described in patients with right frontal or parietal lobe stroke. This disorder is a result of dysfunction of the pathways that connect the areas responsible for emotions and facial recognition (2, 3, 4).

Peduncular hallucinations

Peduncular hallucinations, also known as "Lhermitte's hallucinosis", is a clinical syndrome characterized by vivid, „dream-like visual“ hallucinations that intrude on normal wakefulness. These visual illusions usually do not occur during the daytime, but often nightly and during the period of drowsiness. The

content of the hallucinations is rarely extremely bizarre, they are very realistic and often involve people and environments familiar to the affected individual. However, they may also include distorted images of animals and people ("Lilliputian hallucinations"). Peduncular hallucinations typically occur in thalamic or pontine stroke. There is not much evidence about the effectiveness of pharmacological treatment. In addition to secondary stroke prevention, antipsychotics and anticonvulsants can be used to control hallucinations (5).

Reduplicative paramnesia

Reduplicative paramnesia is a disorders of the perception identification of places. The patient is firmly convinced that he is in a different place despite any concrete evidence to the contrary. It has been reported with right frontal, parietal, temporal and thalamic stroke and duration of the symptoms is usually limited to the acute phase. A similar identification disorder is the "subjective double syndrome", in which a person believes that he has a double, that someone else has replaced him (1).

Dysprosody

Dysprosody is a disorder in which the patient has difficulties in conveying or expressing emotions through speech. There is a loss of the capacity of understanding and generate speech features such as intonation, pauses, stress, and cadences, as expressions of the emotional state of the subject. Strokes involving the right posterior-inferior frontal lobe are associated with dysprosody, but it can also occur in people with Parkinson's disease. A rare form of dysprosody is “Foreign accent syndrome” when people suddenly start speaking with a foreign accent. Only about 100 cases of this syndrome have been described so far and they were all associated with a lesion of the right frontal lobe due to stroke or head trauma.

Athymormia

Athymormia is a motivational disorder. Symptoms include apathy, aspontaneity, and indifference. Patients are usually indifferent, lack curiosity, flat affect. These symptoms are not accompanied by characteristic features of depression, anxiety, or abnormalities in cognitive or intellectual functioning. Atymormia is the result of a lesion of the pathways that connect the frontostriatal and limbic systems and usually occurs after a bilateral stroke of the thalamus, globus pallidus, or putamen (1, 2).

Kluver Bucy syndrome

Kluver Bucy syndrome is a rare neurobehavioral disorder characterized by abnormal sexual behavior (increased autoerotic, homosexual or heterosexual activities, inappropriate choice of sexual object), passiveness with loss of fear or anxiety, dietary changes (bulimia and loss of alimentary selectivity), hypermetamorphosis, hyperorality, and “psychic blindness”(failure in recognizing emotional visual stimuli). It was first described in an experimental model produced by the removal of temporal lobes in monkeys. Ischemic stroke is a very rare cause of Kluver Bucy syndrome, partial syndrome has been reported in the temporal lobe, and thalamic and subthalamic lesions. The presumed mechanism is dysregulation of the limbic system (1).

Pathological Laughing and Crying

This syndrome is characterized by the presence of episodic and contextually inappropriate outbursts of laughter and/or crying without commensurate feeling. “Fou rire prodromique” (translated as “prodrome of crazy laughter”) is one of the pathological forms of laughter and it was first described by Féré in 1903. It is defined as pathological laughter, without a feeling of joy, but on the contrary, with an unpleasant feeling of anxiety. Usually lasts a few seconds to a few minutes and precedes a major apoplectic event, most often a stroke of the basilar artery (1-3).

CONCLUSION

The occurrence of a pure psychiatric condition,without other neurological signs, following stroke is an extremely rare event. Nevertheless, we emphasize the need for a good knowledge of the mentioned syndromes, in order

to make valid diagnosis and start targeted etiological treatment.

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RIJETKI NEUROPSIHIJATRIJSKI SINDROMI NAKON MOŽDANOG UDARA

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SAŽETAK

Neuropsihijatrijski sindromi povezani s moždanim udarom mogu se klasificirati u četiri skupine: poremećaji ponašanja ili osobnosti; poremećaji percepcije identifikacije sebe, drugih ljudi, mjesta i vremena; kognitivna dezintegracija te poremećaji afekta i raspoloženja. Iako su kognitivne disfunkcije ili poremećaji raspoloženja i afekta vrlo česti nakon moždanog udara i predstavljaju vrlo važan čimbenik u oporavku i rehabilitaciji, ovdje ćemo se osvrnuti na rijetke neuropsihijatrijske sindrome kojima etiološki čimbenik može biti i moždani udar. Poremećaji ponašanja ili osobnosti koji se mogu javiti kao posljedica moždanog udara su atimohormija, disprosodija (uključujući „Sindrom stranog naglaska“), Kluver Bucyjev sindrom, Sindrom patološkog smijeha i plača („Fou rire prodromique sindroma“). Iznimno rijetko nakon moždanog udara mogu se javiti i psihotični sindromi poput reduplikativne paramnezije, Cotardov sindrom, Capgrasov sindrom, Fregolijev sindrom, Subjektivni sindrom dvojnika i pedunkularne halucinacije.
Zaključak: Pojava izoliranih psihijatrijskih simptoma, bez drugih neuroloških znakova, je iznimno rijetka klinička manifestacija moždanog udara. Unatoč tome, naglašavamo potrebu za dobrim poznavanjem navedenih sindroma, u svrhu postavljanja valjane dijagnoze i pravovremenog započinjanja ciljanog etiološkog liječenja.

Ključne riječi: Moždani udar, Rijetki neuropsihijatrijski sindromi, Fregolijev sindrom, Capgrasov sindrom
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EFFECTS OF DRY PUNCTURE IN TREATMENT OF CHRONIC HIP PAIN AND IMPROVEMENT OF MOTOR SKILLS: CASE REPORT

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SUMMARY

Dry needling is a medical technique adapted to acupuncture. Also referred to as intramuscular stimulation (IMS). It is an invasive procedure in which an acupuncture needle is inserted into the skin and muscles. Dry needling is aimed at trigger points, which are defined as "hyperirritable spots in muscles that are associated with hypersensitive palpable nodules in a tight muscle or muscle fiber." Trigger points are extremely common and trigger a pain symptom in almost every person sooner or later. The aim of this paper is to show the effects of dry puncture on the reduction of chronic pain in the hip by treating myofascial trigger points, and to improve the motor skills of a woman of the third age. Dry puncture has been used by therapists for a long time, but it only became known in the sixties of the last century in the United States of America when it was put into practice by Janet Travel, then JF Kennedy's personal therapist. The effects of applying dry puncture in the presentation of the case of a woman with chronic pain in the hip, show positive effects and the presence of myofascial trigger points as one of the causes of chronic pain in the hip joint.

Key words: dry needling, physiotherapy, evaluation

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INTRODUCTION

Persistent, recurrent chronic pain affects 39-70% of older adults worldwide (1-4) and negatively affects their daily life not only by causing discomfort, but also by limiting their activities contributing to loneliness and social isolation (5). Conditions of the musculoskeletal system, such as pain in the hips, are the leading causes of pain and disability in the local environment and the second largest global factor as a cause of years of immobility (6). Chronic hip pain is distressing for the patient because it not only makes daily life activities difficult, but also affects the quality of life. Chronic hip pain is difficult to diagnose because patients often have associated chronic pain in the lumbar spine and/or knee joint. Moreover, non-orthopedic causes can also manifest as chronic hip pain (7). The differential diagnosis of hip pain is broad and presents a diagnostic challenge. Patients often report that their hip pain is localized to one of three anatomical regions: anterior hip and groin, posterior hip and buttock, or lateral hip (8). Research shows that dry puncture gives very good results in reducing the intensity of pain in the hip joint.

Dry needling is probably the most widespread form of invasive techniques used in physiotherapy. It involves puncturing soft tissue with a thin filiform needle, and acupuncture needles are commonly used to reduce pain and return to an optimal functional level (9).The dry puncture technique is a deep puncture with rapid entry and exit from the treated muscle (10).Previous research indicates that dry puncture is very effective in solving problems with hip pain, mobility, and raising the quality of life to a higher level.Several approaches to Dry needling have been developed based on various individual theories, insights and hypotheses. 3 main models are presented: the myofascial trigger point model, the radiculopathy model, and the spinal segmental sensitization model. An alternative is a medical technique adapted to acupuncture. Also referred to as intramuscular stimulation (IMS). It is an invasive procedure in which an acupuncture needle is inserted into the skin and muscles. As the name suggests, it targets trigger points, which are defined as “hyperirritable spots in muscles that are associated with hypersensitive palpable nodules in a tight muscle or muscle fiber (11). Trigger points are extremely common and trigger a pain symptom in almost every person sooner or later. According to the intensity and manifestation, there are several types of trigger points, and the basic ones are active and latent and satellite and secondary. Active type trigger points mostly cause pain, while latent trigger points cause pain when palpated, often causing motor dysfunction (stiffness and limited range of motion) without pain, they are far more common than active trigger points. Active trigger points in one muscle can induce an active satellite trigger point, i.e. another muscle. Deactivating a key trigger point often deactivates its satellite trigger point as well. A secondary trigger point is pain that occurs in one muscle when another muscle is strained (12).

In this paper, I present the case of a 67-year-old female with chronic pain in the hip joint. In the process of data collection, variables were used: one-dimensional scale Visual analog scale (VAS) (13) and Senior fitness test (14, 15), while the measurement of anthropological characteristics included the dimensions of body height and body weight. The data were interpreted using the method of descriptive statistics.

The VAS scale isthe most frequently used one-dimensional scale. On a scale from 0 to 10, the patient numerically assesses the intensity of the pain. A rating of zero (0) indicates no pain, 1 to 3 indicates mild pain, 4 to 6 moderate, while ratings of 7 to 10 indicate very severe pain. The advantage of this scale lies in its simplicity, frequency of application and validation for numerous pain settings. The disadvantages of this scale are its inapplicability to young children and elderly people with hearing, vision and

cognitive impairments (1). For data collection, a modified Senior Fitness Test was used, a protocol developed by Rikli and Jones (3) and designed to assess the level of functional fitness of people over 60 years of age.

CASE PRESENTATION

In this paper, I present a patient with extremely severe pain in the right hip joint. The pain first appeared 6 years ago and mostly occurred when walking. Recently, it was difficult for her to go up and down the stairs because of the great pain and lack of strength in her legs. Chronological age is 67 years, body height 150 cm and body weight 57 kg. She has been a patient for two years and is retired. Physiotherapy assessment consisted of taking an anamnesis, assessing hip joint pain using a numerical VAS scale. The Seniof fitness test was modified and adjusted for pain in the hip joint, and in this work the following variables were not measured: elbow bend for 30 seconds and shoulder girdle flexibility. Variables measured: leg strength, endurance test and flexibility of the back.

Physiotherapy treatments included the application of 6 dry puncture therapies for three weeks, twice a week. At the initial test, the patient rated the intensity of pain on the VAS scale as 9, which is an extremely high value. And there was also a limp when walking. In the modified Senior fitness test, the following were measured during the initial testing: leg strength 13 repetitions, endurance test 9 repetitions, flexibility of the rear leg of the right leg +0 cm, flexibility of the rear leg of the left leg 0 cm and dexterity test 7.92 seconds.

The primary goal of the therapy was to reduce the intensity of pain, while the secondary goal was to improve the patient's motor skills and quality of life.

Dry puncture treatments were carried out over 3 weeks and a total of 6 treatments were performed. The patient was lying down and the hip flexor muscles were treated: m. rectus femoris and m. tensor fasciae latae, and extensor m. semitendinosus, m. semimembranosus and m. gluteus maximus. Standard dry puncture procedures were performed before, during and after treatment. By palpation, myofascial trigger points within the taut muscle fibers were identified. During each treatment, active trigger points were punctured to cause one local twitch in each muscle and acupuncture needles with a plastic guide, size and thickness 30 mm x 0.3 mm and 40 mm x 0.3 mm.

After three weeks and the completion of 6 therapeutic units, the final testing was done. On the VAS scale, the patient marked the intensity of pain with 1 (no pain), and after the third therapy, no limping was noticed. The senior fitness test at the final testing showed the following results: leg strength 23 repetitions, endurance test 75 repetitions, flexibility of the right hindquarter 0, flexibility of the left hindquarter -6 cm and dexterity test 7.01 seconds.

DISCUSSION

Dry needling is an intervention used to treat myofascial pain syndrome and related impairments. Myofascial pain syndrome is characterized by the presence of one or more symptomatic myofascial trigger points located in skeletal muscles (16).

It is believed that the affected fibers in the muscle shorten, which is why trigger points are palpated within the structure that we feel as a taut string in the muscle, and the shortening of the fibers is theorized to occur in response to an increased concentration of calcium ions or in response to an excessive release of acetylcholine (17). This paper presents a patient with chronic pain in the hip joint caused by myofascial trigger points as one of the causes of chronic pain in the hip joint. After 6 therapies, the results were very positive, and the primary and secondary goals were met. The clinical results were positive, which indicates a reduced intensity of pain and disability according to the outcome measures used in the patient's treatment. Subjective

indicators of the condition show that the patient fulfills basic life needs smoothly and without pain. After the treatment, the quality of life also greatly improved, especially in the part that she went for long walks and used the stairs because she was unable to before the therapy, and several previous studies have shown that the elderly in particular marked the test of climbing the stairs as one of the most difficult. tasks (18, 19, 20). There was also an improvement in walking without the occasional limp that was common before therapy. Research by Pavkovich et al. (2015) on 4 case studies of the effects of dry needling conducted over a period of 3 to 12 months showed clinically significant improvements in pain and disability. Subjects reported improved sleep and functional mobility, which were commensurate with their different age ranges and initial reported mobility limitations. The results of this case series show promising results for the use of dry needling in the treatment of chronic flank and thigh pain (21).

CONCLUSION

In this paper, after 6 treatments lasting 3 weeks, the positive effects of using dry puncture in the treatment of a woman with chronic hip pain are shown. After the treatment of myofascial trigger points, the pain was reduced to a minimum, and it can be concluded that the symptoms of pain in the hip joint can also be addressed to myofascial trigger points.

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UČINCI SUHE PUNKCIJE U LIJEČENJU KRONIČNE BOLNOSTI U KUKOVIMA I POBOLJŠANJU MOTORIČKIH VJEŠTINA: PRIKAZ SLUČAJA

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SAŽETAK

Suha punkcija je medicinska tehnika prilagođena akupunkturi. Također se naziva i kao intramuskularna stimulacija (IMS). Invazivan je postupak u kojem se uvodi akupunkturna igla u kožu i mišiće. Suha punkcija je usmjerena na trigger točke, koje se definiraju kao „hiperiritabilna mjesta u mišićima koji su povezani s preosjetljivim palpabilnim čvorićima u zategnutom mišiću ili mišićnom vlaknu. Trigger točke su izuzetno česte i aktiviraju simptom bola skoro svakog čovjeka prije ili kasnije. Cilj ovog rada je ispitati efekte suhe punkcije na smanjenje kronične boli u kuku i tretmanom miofascijalnih okidačkih točaka i poboljšati motoričke sposobnosti žene treće životne dobi. Suhu punkciju terapeuti primjenjuju već duže vrijeme, ali postala je poznata tek šezdesetih u Sjedinjenim Američkim Državama od strane Janet Travel, tadašnjeg osobnog terapeuta J.F. Kenedija. Efekti primjene suhe punkcije u prikazanoj studiji slučaja žene sa kroničnom boli u kuku, pokazuju pozitivne učinke te prisutnost miofascijalnih okidačkih točaka kao jedan od uzroka kronične boli u zglobu kuka.

Ključne riječi: suha igla, fizioterapija, evaluacija

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Marčinko D, Begić D, Malnar Z, Dordević V, Po- pović-Knapić V, Brataljenović T, et al.

Suicidality among veterans suffering from chronic PTSD tre- ated at center for crisis intervention, zagreb univer- sity hospital center. Acta Med Croat. 2006;60:335-9.

Knjiga ili priručnik: Sadock B, Sadock V. Kaplan & Sadock's Synopsis of Psychiatry 9. ed. Baltimo- re, Philadelphia: Lippincott Williams and Wilkins; 2003.

Poglavlje u knjizi: Meltzer PS, Kallioniemi A, Trent JM. Chromosome alterations in human solid tumors. In: Vogelstein B, Kinzler KW, editors. The genetic basis of human cancer. New York: McGraw-Hill; 2002. p. 93-113.

Internet: Cancer-Pain.org [Internet]. New York: Association of Cancer Online Resources, Inc.; c2000-01 [updated 2002 May 16; cited 2002 Jul 9]. Available from: http://www.cancer-pain.org/. Foley KM, Gelband H, editors. Improving palliative care for cancer [Internet]. Washington: Natio- nal Academy Press; 2001 [cited 2002 Jul 9]. Availa- ble from: http://www.nap.edu/books/0309074029/ html/.

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