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STRESS COPING STRATEGIES IN EMERGENCY SITUATIONS AMONG STUDENTS

Abstract: The study examines the coping strategies structure, the relationship between explanatory style as a personality dimension and coping strategies, as well as gender differences and differences between students of social sciences and engineering students in Belgrade. The sample consisted of 303 respondents. The explanatory style was operationalized as the dimensions of Dispositional Optimism and Hope. The measures used were the Life Orientation Test - Revised (LOTR) and Adult Hope Scale (AHS). Coping strategies were measured using the Ways of Coping Questionnaire (WOCQ) and the Coping Strategies Indicators (CSI). Factor analysis isolated a total of twelve factors on all questionnaires, which is consistent with the findings of previous studies. The results show that engagement coping strategies are more frequently employed. The correlations between Dispositional optimism and coping strategies, as well as Hope and coping strategies, was confirmed. Among women and students of social sciences the values observed are statistically significant. The obtained results indicate the need for a more active role of educational institutions enabling individuals to acquire competencies for active coping with emergency situations, especially men and applied sciences students.

Key words: emergencies, coping strategies, dispositional optimism, hope, students.

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1. Introduction

Emergency situations involve various risks and circumstances that result in human and material losses (Živković, 2009, as cited in Živković, Čabarkapa & Mlađan, 2011). Psychological reactions to emergency situations include the fear for one's life and a psychological imbalance that arises when individuals perceive a discrepancy between the physical or psychological demands of an emergency situation and their own resources. Emergency situations are as a rule unexpected and catch people unawares, so the individual experience of stress can be very intense, and a person's ability to cope with the emergency at the moment may be limited. Individual reactions during emergency situations depend on a number of factors, or resources. Stress coping strategies / crisis coping mechanisms have a major role as processes that help restore psychological balance; personality dimensions such as explanatory style, on the other hand, can also be a significant resource.

One of the most widespread definitions of stress coping was proposed by Lazarus and Folkman (2004, p. 145). According to them, coping is "a dynamic and lasting cognitive and behavioral effort to cope with specific external and/or internal demands, which are appraised as burdensome or difficult to the extent that they exceed the resources available to the person". The researchers distinguish between problem-focused coping and emotion-focused coping. Problem-focused coping strategies involve identifying the problem, looking for alternative solutions, weighing certain possibilities in terms of loss or gain, choosing a solution, and taking action (Wang & Saudino, 2011). In contrast, emotion-focused coping strategies involve avoiding, minimizing and distancing negative events, regulating affect, maintaining hope and optimism, and refusing to accept the worst (Zotović, 2004).

Carver and coworkers (Carver, Scheier, & Weintraub, 1989) proposed thirteen coping techniques: active coping, planning, suppression of competing activities, restraint, use of instrumental support, focus on and venting of emotions, mental disengagement, positive reinterpretation and growth, denial, religious coping, humour, behavioural disengagement, use of social support. Some researchers put emphasis on avoidance-style measures (Elliot, Thrash, & Murayama, 2011); others

point to multiple strategies, such as problem-solving, use of social support and avoidance (Amirkhan, 1990).

In order to discover the resources that contribute to the positive outcome of stress coping techniques, researchers have analyzed different personality dimensions (Genc, Pekić & Matanović, 2013). One of the important constructs related to stressful situations is the attributional or explanatory style. Explanatory style is the tendency to offer similar explanations for different events (Buchanan & Seligman, 1995). The parameters of explanatory style are internality/externality, stability/instability, and globality/specificity (Abramson, Seligman, & Teasdale, 1978). According to these parameters, we can distinguish between pessimistic and optimistic explanatory styles (Seligman, 1991). The pessimistic style of interpreting events is characterized by internality, stability and globality, and the optimistic style is characterized by externality, instability and specificity.

Explanatory style refers to the tendency to interpret everyday events from a pessimistic or optimistic angle. This tendency should not be equated with a personality trait such as dispositional optimism (Carver & Scheier, 2014). Explanatory style is operationalized through the dimension of optimism/pessimism, as in the Life Orientation Test (Scheier, Carver, & Bridges, 1994), or through the dimension of Hope, as in the Hope Scale for Adults (Snyder et al., 1991). Hope has been shown to be close to the construct of optimism (Carver & Scheier, 2014). In stressful situations, when the intended goal cannot be achieved, hope helps people find alternative paths towards achieving their goals (Snyder, Rand, & Sigmon, 2005).

Multiple studies have shown that optimists make use of problem-focused coping in situations when they feel they can control the source of stress. However, in the face of loss, they tend to use emotion-focused coping and maintain a positive outlook (Genc, 2014). Pessimists, on the contrary, tend to use avoidance behaviours (Thompson & Gaudreau, 2008, as cited in Genc, Pekić & Matanović, 2013). Research has confirmed the existance of a high negative correlation between optimism, on the one hand, and depression, alienation and hopelessness, on the other (Oláh, 2005, as cited in Genc, Pekić & Matanović, 2013).

Some of the studies address the issue of stress coping in natural or technological disasters. Baum and coworkers (Baum, Fleming, & Singer, 1983) came to the conclusion that people who survived a technological disaster use problem-focused coping strategies to a greater extent, rather than emotion-focused coping strategies. Stewart's study (1986) showed that in the case of tornadoes, the use of problem-focused coping strategies positively correlates with a lower degree of anxiety among men and with fewer referrals to health care units among women; emotion-focused coping, however, correlates with a higher degree of anxiety among men. Murphy's study (1986) demonstrates that in a community affected by a volcanic eruption, the psychological effects are long-lasting despite the use of positive coping strategies and social support. McCammon and coworkers (McCammon, Durham, Allison, & Williamson, 1988) compared the coping strategies of emergency responders after a building explosion and after a tornado. After a tornado, coping patterns change, so that individuals gradually shift from problem-focused coping to emotion-focused coping.

Considering the relatively low number of studies on stress coping strategies in emergency situations, as well as the lack of relevant research in Serbia, this study was conducted with the aim of identifiying stress coping strategies in emergency situations and their relationship with explanatory style as a personality dimension.

2. Method

An exploratory study was conducted on an adequate sample of university students. The relationship between coping strategies and explanatory style was examined, by placing students in an imaginary stressful situation due to an emergency. The following aspects were analyzed: the structure of coping strategies, the relationship between explanatory style and coping strategies, gender differences and differences between the students of applied sciences (engineering) and the students of social sciences.

2.1. Sample

There were 303 respondents, of which 53.1% were female, and 46.9% were male. The respondents' age range was 18 – 40 (AS = 22.56). The respondents were divided into two categories: engineering students (41.3%) and students of social sciences (58.7%). Engineering students category included students of the Faculty of Mechanical Engineering (23.1%) and Faculty of Forestry (18.2%). Social sciences students category included students of the Faculty of Security (42.6%) and the Faculty of Philosophy, majoring in Psychology (16.2% of the total sample).

2.2. Instruments

The basic variables in the research, stress coping strategies and explanatory style, were examined using a questionnaire with a five-point Likert scale. The following instruments were used to investigate the explanatory style personality dimension: Life Orientation Test-Revised (LOTR; Scheier, Carver, & Bridges, 1994) - Dispositional Optimism dimension, and Adult Hope Scale (AHS; Snyder et al., 1991) - dimension of Hope. The following instruments were used to investigate coping strategies: Ways of Coping Questionnaire (WOCQ; Folkman & Lazarus, 1988), and Coping Strategy Indicator (CSI; Amirkhan, 1990). All questionnaires were checked on the sample and revised. The instructions for each questionnaire were adapted so as to require respondents to imagine themselves in an emergency situation. For instance, the instructions for Ways of Coping with Stress Questionnaire (WOCQ) read: "This questionnaire examines how you feel and act in disturbing or harmful circumstances, i.e., in situations that you perceive as stressful. Imagine how you would react in an emergency situation (flood, fire, earthquake, etc.) and indicate the extent to which you would use the behaviors described in the statements below..." The instructions for the Coping Strategy Indicators (CSI) questionnaire read: "Try to recall a recent stressful situation, which had you troubled and worried. It can be any stressful situation or emergency (such as a flood, fire, etc.) from your personal experience, or a stressful situation that you would not like to experience in reality." The obtained data were processed with multivariate statistics and then interpreted.

3. Results

3.1. Factor Analysis

The first step was to determine the suitability of the correlation matrix for factorization using the Kaiser Meyer Olkin Index and the Bartlett Test. Based on the obtained results, the KMO value is .746, and Bartlett Test is statistically significant ($p < .01$), which justifies the application of factor analysis.

Using factor analysis and principal components method (with Promax rotation and Kaiser normalization), a total of twelve factors were isolated on all questionnaires, and reliabilities were measured by Cronbach's alpha coefficient. Five factors were taken from the Ways of Coping Questionnaire (WOCQ): *Denial* (α = .755), *Magical Thinking* (α = .761), *Active Problem Solving* (α = .756), *Problem Solving with personality development* (α = .639), *Problem Solving with the help of others* (α = .690). The Coping Strategy Indicators (CSI) measure consists of three factors: *Seeking Social Support* (α = .739), *Problem-Focused* (α = .669), *Withdrawal* (α = .646), all of which were included. Two factors were taken from the Life Orientation Test (LOT): *Optimism* (α = .721) and *Pessimism* (α = .539), and two more from the Adult Hope Scale (AHS): *Faith in One's Problem-Solving Ability* (α = .632) and *Internal Support* (α = .597).

The *Denial* subscale consists of statements that deny the existence of the stressor and accept the situation as it is without trying to change anything. This subscale also includes various activities (sleeping, traveling, etc.) that aim to distract the individual from thinking about the stressor. The items with the highest factor saturation are: "I would accept whatever happened, because there wouldn't be anything I could do" (.624), "I would go on as if nothing had happened" (.599), "I would attach little importance to the event; I wouldn't take the matter too seriously" (.586).

The second subscale, *Magical Thinking*, consists of statements related to one's belief that it is possible to establish control over events by irrational means. The items that showed the highest factor saturation are: "I would upbraid or blame myself" (.691), "I would like the situation to disappear or come to an end somehow" (.579), "I would promise myself that next time it would be different" (.574).

The *Active Problem Solving* subscale involves focusing on the problem and taking steps to solve it, relying on previous experiences. The items showing the highest factor saturation are: "I would make a plan of action and follow it" (.643), "I would rely on past experiences: I was already in a similar situation" (.643), "I would find several different solutions to the problem" (.589).

The *Problem Solving with personality development* subscale involves one's tendency to cope with stress by seeing the positive aspects of a situation, as something that will contribute to their development, in terms of change and maturity. The items showing the highest factor saturation are: "I would mature and/or change as a person" (.739), "I would say things to myself that would help me feel better" (.612), "I would re-examine what is truly important in life" (.540).

The *Problem Solving with the help of others* subscale involves seeking emotional and instrumental support, i.e., the ability to observe the situation from the perspective of others and seek understanding and empathy from the environment, as well as help and advice related to the problem. The items that show the highest factor saturation are: "I would try to see things from someone else's point of view" (.659), "I would imagine how a person I admire would act in such a situation and I would follow that" (.580), "I would seek professional help" (.577).

The *Social Support* subscale includes statements related to seeking emotional support and help from friends, experts and others: "I sought support from those who know me best" (.774), "I went to a friend to help me feel better about the problem" (.715), "I went to someone (friend or expert) to help me feel better" (.653).

The *Problem-Focused* subscale includes statements related to careful consideration and finding different ways to solve a problem: "I tried to think of as many solutions as possible before deciding what to do" (.743), "I made a stand and fought for what I most wanted in that situation" (.674), "I came up with a plan of action to deal with the problem" (.642).

The *Withdrawal* subscale includes statements related to distancing oneself from the problem and avoiding facing the problem: "I just wanted people to leave me alone" (.725), "I spent more time alone than usual" (.716), "I dreamed of better times" (.595).

The *Optimism* subscale includes statements related to one's tendency to expect the best possible outcome in a situation, as well as the existence of hope and "confidence" in the future: "In uncertain situations, I usually expect the best outcome" (.810), "I generally expect that more good than bad things will happen to me" (.792), "I am always optimistic about my future" (.792).

The *Pessimism* subscale includes statements related to one's tendency to see things as bad, expecting the worst outcome: "If things can go wrong for me, they certainly will" (.823), "I almost never expect events to unfold the way I want" (.724), "I rarely count on good things to happen to me" (.536).

The *Faith in One's Problem-Solving Ability* subscale consists of statements related to one's ability to find different ways to solve problems in order to achieve the best possible outcome and get what one wants: "I can think of many ways to get out of a problem" (.712), "There are many ways to solve any problem" (.660), "Even when others get discouraged, I know I can find a way to solve the problem" (.619).

The *Internal support* subscale consists of statements related to concerns about one's responsibility, and goal-achieving abilities: "I often worry about something" (.685), "I worry about my health" (.639), "I pursue my goals energetically" (.545).

3.2. Descriptive Factor Analysis

Table 1 shows the values of the obtained factors. The dimension that achieved the highest average value, regarding the WOCQ scale, is *Active problem solving* (AS = 3.57), while *Denial* has the lowest average value (AS = 2.49). *Problem Solving* has the highest value on the CSI scale (AS = 3.50), with *Withdrawal* having the lowest value (AS = 2.89). On the LOT scale, *Optimism* has a higher average value (AS = 3.42) than *Pessimism* (AS = 2.72). On the AHS scale, both dimensions show significantly high values, the highest than in any other scale: *Internal support* (3.63) and *Belief in one's ability to solve problems* (3.61).

Table 1. Descriptive statistics of isolated factors

	N	*Min*	*Max*	*AS*	*SD*
Denial (WOC)	303	1,2	4,3	2,49	0,64
Magical thinking (WOC)	303	1,5	4,7	3,09	0,69
Active problem solving (WOC)	303	1,9	5,0	3,57	0,66
Problem solving with personal development (WOC)	303	1,0	5,0	3,35	0,78
Problem solving with others' help (WOC)	303	1,2	4,7	3,34	0,66
Seeking social support (CSI)	303	1,0	5,0	3,45	0,93
Problem-focused (CSI)	303	1,2	5,0	3,50	0,79
Withdrawal (CSI)	303	1,0	5,0	2,89	0,87
Optimism (LOT)	303	1,0	5,0	3,42	0,98
Pessimism (LOT)	303	1,0	5,0	2,72	0,91
Faith in one's problem-solving ability (AHS)	303	1,3	5,0	3,61	0,76
Internal support (AHS)	303	1,3	4,8	3,63	0,68

3.3. Personality Dimensions and Coping Strategies

Table 2 shows the correlations between dispositional optimism and coping strategies. All coping strategies positively correlate to Optimism except Denial, which shows negative correlation. Magical Thinking and Withdrawal how no statistically significant correlations. Coping strategies that positively correlate to Optimism also negatively correlate to Pessimism, while the opposite holds true of Denial. Magical Thinking negatively correlates to Pessimism, and Withdrawal shows no statistically significant correlations.

Table 2. Dispositional optimism and coping strategies correlations

	Optimism	Pessimism
WOC Denial	-,147*	,135*
WOC Magical thinking	0,058	-,201**
WOC Active problem solving	,327**	-,159**
WOC Problem solving with personal development	,300**	-,262**
WOC Problem solving with others' help	,204**	-,206**
CSI Seeking social support	,187**	-,146*
CSI Problem-focused	,344**	-,117*
CSI Withdrawal	-0,060	0,029

Note: *p < .05, **p < .01

Table 3 shows the correlations between the dimenstion of Hope and coping strategies. All coping strategies positively correlate with both Hope factors, except for Denial, which shows negative correlation. Magical Thinking and Withdrawal show no statistically significant correlations.

Table 3. Correlations between hope and coping strategies

	Faith in one's problem-solving ability	Internal support
WOC Denial	-,214**	-,228**
WOC Magical thinking	0,037	0,044
WOC Active problem solving	,351**	,191**
WOC Problem solving with personal development	,153**	,267**
WOC Problem solving with others' help	,140*	,192**
CSI Seeking social support	,131*	,153**
CSI Problem-focused	,302**	,244**
CSI Withdrawal	-0,057	0,024

Note: *p < .05, **p < .01

3.4. Differences Between Groups

Using the t-test, we examined whether there are gender-based differences on each subscale, and whether there are differences based on academic orientation. Table 4 shows that there are statistically significant gender-based differences on all subscales (factors), except for Withdrawal. In general, values are higher among women on all subscales, except Withdrawal and Pessimism, which are more pronounced among men.

Table 4. Gender-based differences and subscales

		N	*AS*	*SD*	*F*	*t*	*df*	*p*
Denial	men	142	**2,68**	0.648	1.927	5.144	301	0.000
	women	161	2,32	0.575				
Magical thinking	men	142	3,00	0.626	1.864	-2.098	301	0.037
	women	161	**3,17**	0,726				
Active problem solving	men	142	3,47	0,644	0,270	-2,414	301	0,016
	women	161	**3,65**	0,658				
Problem solving with personal development	men	142	3,06	0,767	3,590	-6,535	301	0,000
	women	161	**3,61**	0,696				
Problem solving with others' help	men	142	3,16	0,582	0,004	-2,925	301	0,004
	women	161	**3,34**	0,605				
Seeking social support	men	142	3,24	0,904	1,321	-3,783	301	0,000
	women	161	**3,64**	0,915				
Problem-focused	men	142	3,38	0,815	1,220	-2,476	301	0,014
	women	161	**3,61**	0,759				
Withdrawal	men	142	2,92	0,821	1,742	0,600	301	0,549
	women	161	2,86	0,910				
Optimism	men	142	3,25	1,006	1,675	-2,872	301	0,004
	women	161	**3,56**	0,925				

Pessimism	men	142	**2,90**	0,868	0,649	3,358	301	0,001
	women	161	2,56	0,911				
Faith in one's problem-solving ability	men	142	3,47	0,843	15,175	-3,010	301	0,003
	women	161	**3,73**	0,653				
Internal support	men	142	3,43	0,720	4,225	-4,899	301	0,000
	women	161	**3,80**	0,594				

Table 5 shows the differences between students of engineering and social sciences. The results show that there are statistically significant differences across subscales, except for Withdrawal, where there are no statistically significant differences. The social sciences students exhibit higher values for all coping strategies except Denial, which is more pronounced among engineering students. Hope and Optimism are also more pronounced among the social sciences students, while Pessimism is more pronounced among the engineering students.

Table 5. Differences between students of engineering and social sciences

		N	*AS*	*SD*	*F*	*t*	*df*	*p*
Denial	social s.	178	2,31	0,587	0,031	-6,443	301	0,000
	engineering	125	**2,76**	0,612				
Magical thinking	social s.	178	**3,23**	0,715	2,722	4,226	301	0,000
	engineering	125	2,90	0,592				
Active problem solving	social s.	178	**3,74**	0,626	0,004	5,664	301	0,000
	engineering	125	3,32	0,626				
Problem solving with personal development	social s.	178	**3,63**	0,656	5,68	8,475	301	0,000
	engineering	125	2,94	0,762				

Problem solving with others' help	social s.	178	**3,34**	0,541	0,003	3,336	301	0,001
	engineering	125	3,13	0,529				
Social support	social s.	178	**3,65**	0,907	1,521	4,564	301	0,000
	engineering	125	3,17	0,892				
Problem-focused	social s.	178	**3,65**	0,724	4,299	4,003	301	0,000
	engineering	125	3,29	0,840				
Withdrawal	social s.	178	2,83	0,873	0,077	-1,348	301	0,179
	engineering	125	2,97	0,860				
Optimism	social s.	178	**3,66**	0,890	2,773	5,328	301	0,000
	engineering	125	3,07	0,994				
Pessimism	social s.	178	2,47	0,888	2,278	-6,121	301	0,000
	engineering	125	**3,08**	0,809				
Faith in one's problem-solving ability	social s.	178	**3,78**	0,628	21,66	4,810	301	0,000
	engineering	125	3,37	0,859				
Internal support	social s.	178	**3,85**	0,538	11,538	7,241	301	0,000
	engineering	125	3,32	0,741				

Considering the similar findings of differences between groups by gender and academic orientation, we checked the distribution of the sample according to the variables (see Table 6) and noticed an uneven gender representation in the sub-samples of engineering students and social sciences students.

Table 6. Cross-tabulation of academic orientation and gender variables

		Studies		Total
		Social sciences	Engineering	
Gender	M	35	107	142
	F	143	18	161
Total		178	125	303

4. Discussion

This study analyzed students' reactions to an imagined emergency situation using instruments which evaluate stress coping, Dispositional Optimism, and Hope, as dimensions that are representative of explanatory style. The convenience sample displayed a factor structure which is similar to the ones found other relevant studies. The original structure of the Ways of Coping Questionnaire (Folkman & Lazarus, 1988) consists of: *Confrontative Coping, Distancing, Self-Controlling, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem-Solving* and *Positive Reappraisal*. The studies which used the Ways of Coping Questionnaire produced different factor structures (Rexrode, Petersen, & O'Toole, 2008). In this sample, the following factors were isolated: *Denial, Magical Thinking, Active Problem Solving, Problem solving with personality development,* and *Problem solving with the help of others*. A similar structure can be found in the study by Sorlie and Sexton (2001): *Wishful Thinking, Goal-Oriented, Seeking Support, Thinking It Over*, and *Avoidance*. Another similar structure can be found in the research conducted on three different samples (Vitaliano, Russo, Carr, Maiuro & Becker, 1985): *Problem-Focused, Wishful Thinking, Seeking Social Support, Blamed Self* and *Avoidance*. The names of subscales (factors) in this study were meant to be more detailed, to reflect the meaning behind them.

The Coping Strategy Indicators measure (Amirkhan, 1990) originally consists of three factors: *Problem Solving, Seeking Social Support* and *Avoidance.* This study also has three factors, named *Social Support, Problem-Focused,* and *Withdrawal*. Previous research have mostly con-

firmed the three-factor structure, with the Avoidance factor proving to be heterogeneous (Žuljević, Jovanović & Gavrilov-Jerković, 2015). The verification of the questionnaire on a community sample in Greece showed a four-factor structure: *Problem Solving, Seeking Social Support, Avoidance-Distraction* and *Avoidance-Withdrawal* (Togas & Alexias, 2018), which confirmed the heterogeneity of the *Avoidance* factor.

Life Orientation Test-Revised (*LOT-R*) is an instrument that assesses one's dispositional level of optimism, designed as a dimension representing a continuum between optimism and pessimism (Scheier & Carver, 1985; Scheier, Carver, & Bridges, 1994). In this sample, Optimism and Pessimism, were identified as two separate factors. Many previous studies have obtained a similar two-factor structure (Ferrando, Chico & Tous, 2002; Gaspar, Ribeiro, Matos, Leal, & Ferreira, 2009; Ottati & Noronha, 2017; Villarroel, Rubio, & Atenas, 2009).

The Adult Hope Scale (*AHS*) ia a measure of one's ability to find alternative ways to achieve one's goals, when the usual ways are unavailable (Snyder et al., 1991; Snyder et al., 2005). The original scale consists of two subscales: *Pathways thinking* and *Agency thinking*. The sample confirmed the two-factor structure. The factors were named *Faith in one's problem-solving ability* and *Internal support*, as these names communicate the meaning more adequately.

In the sample, coping strategies aimed at problem solving were found to be more prominent (in descending order: *Active problem solving, Problem orientation, Social support, Problem solving with personality development, Problem solving with the help of others*). Avoidance-oriented strategies (*Denial, Withdrawal, Magical thinking*) were employed to a lesser degree. Many previous studies bear out the results obtained. The studies by Mavar (2009) and Vuletić-Prtorić (2002) confirmed that problem-focused coping strategies are the most used and most effective in situations where one feels one can control a stressful event and its outcomes. The above results indicate that it would be better if coping strategies were classified into two groups: engagement or approach coping, which involves confronting the stressor and feelings associated with a stressful situation, and disengagement or avoidance coping, which involves avoiding stressors and feelings associated with them (Skinner, Edge, Altman, & Sherwood, 2003).

As to the relationship between coping strategies and dispositional optimism, the results show Optimism positively correlates with problem-focused coping strategies, while pessimism correlates with problem-avoidance coping strategies (Scheier, Carver, & Bridges, 2001; Scheier, Weintraub, & Carver, 1987). Considering the type of stressor, optimism is a better predictor of problem-focused coping for controllable stressors such as academic success, and emotion-focused coping for uncontrollable stressors such as trauma (Solberg Ness & Segerstrom, 2006). Research has shown that optimism and social networks have mutually reinforcing effects (Segerstrom, 2007), which explains the approximately similar values obtained for problem-focused strategies and social support-seeking strategies. In other words, social support-seeking strategies involve solving problems with the support of other people, as the name of this factor suggests. Pessimism, contrary to optimism, causes self-defeating behaviour patterns that lead to avoidant coping strategies and behaviors that are harmful for one's health and well-being (Carver, Scheier, & Segerstrom, 2010).

Research shows a dynamic and reciprocal relationship between coping strategies and the dimension of hope (Folkman, 2014). A higher level of hope can improve coping strategies (Yucens at all., 2019). The results of our research show that the most prominent correlations exist between Active Problem Solving and Faith in one's problem-solving ability, and Problem Solving with personality development and Inner Support. This bears out the authors' hypothesis that that the first dimension of Hope is more related to abilities, while the second dimension is more related to the motivational component (Snyder, Rand, & Sigmon, 2005). Finally, the results for the dimension of hope are largely similar to the results for dispositional optimism (Aspinwall, Richter, & Hoffman, 2001).

Gender differences in our sample showed that higher values on problem-focused and social support coping strategies, optimism and hope are observed in women. Among men, Denial and Pessimism are more commonly employed. Similar findings were obtained by Mavar (2009): women employ problem-oriented coping more than men. Male students tend to use avoidance strategies more than female students (Cabras & Mondo, 2018). It has also been shown that women are more

focused on emotions and seeking social support when facing stressful events (Amirkhan, 1990; Bijttebier & Vertommen, 1997; Long, 1990). However, some studies reached the conclusion that male students show higher values on Problem Solving, and female students on Avoidance (Ager & Maclachlan, 1998).

Differences in terms of academic orientation (studies' type) can be interpreted as differences in terms of gender, considering that the sub-sample of social sciences is largely made up of female students, while the engineering sub-sample is made up of male students. However, we may assume that other personality dimensions also play a role in the choice of studies, so the differences can be interpreted independently of gender. The social sciences students have higher values on all coping strategies except Denial, which is more prominent among the engineering students. All the factors of the explanatory style dimension are more prominent among the students of social sciences, except Pessimism, which is again more prominent among the engineering students. A possible explanation is that the students of social sciences study human behavior and their reactions to stressful and similar situations. In the engineering students, we can assume that their lack of knowledge of human behaviour patterns and response to emergency situations causes inhibitions and results in their avoidance of stressful circumstances. We can also assume that the engineering students mostly employ the convergent method of problem solving. This can explain a higher degree of pessimism among them, because focusing on a single way of solving problems can narrow one's perspective. The students of social sciences, on the other hand, have a tendency to seek more than one way to solve problems. It is possible that the engineering students employ the convergent method only for problems related to social situations and that they would approach problems from the field of natural or applied sciences differently.

Finally, it should be noted that the results of this research were obtained on a convenient sample and that, therefore, can be taken as indicators of certain trends that could be examined in subsequent research.

5. Conclusion

The results showed that the coping strategies most often employed by the students are Active Problem Solving, Problem-Focused and Social Support, although the values of these dimensions are moderate. The findings are consistent with the previous research. The values for Optimism are significantly higher than for Pessimism. Another dimension with a high value is hope, which is also consistent with the previous research. This confirms that these personality dimensions correlate with problem-focused and social support coping strategies. Strategies and personality dimensions aimed at engaged coping with emergency situations are more prominent among female students. The same applies to students of social sciences, beacuse this subsample is largely made up of women. Other factors that influence the choice of studies, especially certain personality dimensions, should also be taken into account.

The obtained correlations confirm that dividing the coping strategies into those of engagement and disengagement would be more practical and useful in every respect. It would make a clear distinction between two opposing tendencies: to actively confront the problem and engage all internal resources to overcome it, and to let go and avoid the problem with all the negative consequences it brings. The distinction between problem-focused and emotion-focused strategies is not adequate, because the situations in which the strategies are employed overlap. Being problem-focused does not mean that emotions are not involved. Rather, it can be assumed that individuals characterized by optimism and hope have a considerable tolerance for frustrations and instead of indulging in negative scenarios caused by an emergency situation, they actively confront the problem. Finding adequate solutions then inspires positive emotions. Emotion-focused does not mean that individuals do not confront the problem; however, they have a pessimistic outlook, and no faith in their ability to solve the problem. In other words, since they do not see a way out of the situation, they avoid both the problem and the negative emotions by trying to ignore the emergency situation.

The coping strategies employment exibits differences by gender and type of studies. This data could serve as an indicator to educational institutions of the need to put in more effort to enable individuals to cope

with emergency situations, men and applied sciences students being particularly vulnerable. Emergency situations affect the general population regardless of status, and not everyone is equally prepared to cope with them. Therefore, research on coping strategies and related personality dimensions is important as a part of comprehensive preparations for an efficient community response to emergency situations.

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