# Diagnostics of psychological flexibility and the ability to cope with the inevitable changes among psychology students

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### Abstract

The study concerns the question of how much the emotional competence and the ability to cope with problems in one's own personality increase in the process of professional psychological education, for which students of different years of study were tested. The aim of this study is to deeply diagnose various components of psychological flexibility and the ability to cope with unexpected events among psychology students. The study involved 30 students from 1 to 4 years of university grade level participated into study, divided into 4 equal groups from. Based on testing various aspects of psychological flexibility, emotional intelligence test (EQ test), Emotion Regulation Questionnaire (ERQ) and D.V. Lyusin emotional intelligence instrument (Emin) were used; it was tested using Student's t-test and Kruskal-Wallis H-test to evaluate differences between three or more samples simultaneously. As a result of the study, the significant differences between all groups of participants and between the assessment of individual factors of psychological flexibility in different groups was accepted. Each of the groups demonstrated its specific characteristics of the relationship between emotional competence and coping with stress. Comparison of the results of students from different years of study showed that psychological education does not have a significant effect on emotional intelligence as an indicator of emotional flexibility, but positively affects the development of coping with stress, although in predominantly passive forms. The practical application of the research lies in improving psychology students' learning; the research results can be used as methods for determining psychological flexibility factors that require development in study groups.

Keywords Coping · Emotional flexibility · Emotional intelligence · Psychological education

# Introduction

Modern civilization is largely united by telecommunications networks, the Internet, social networks, and the media. The features of emotional reactions, patterns of behavior, the

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ability to cope with unexpected or difficult circumstances, etc. are becoming common for most people (Shcherbakova, 2020). Behavioral patterns are spread through media content worldwide. The images inculcated by the media and advertising have been repeatedly researched and criticized for being far from the real needs and peculiarities of the human psyche (Valanarasu, 2021). These include, for example, the image of a strong-willed person, capable of complete self-control; the refusal to openly display or discuss emotions, which is characteristic of many traditional cultures (Doorley et al., 2020; Keltner et al., 2019; Volynets et al., 2020); open emotionality, preached by some social subcultures, devoid of control has limited benefit in case of dyadic coping, within the framework of openness and support from the partner (Rusu et al., 2020). Each of the above examples represents one or another side of emotional rigidity and is rather an example of the actions of a traumatized psyche. The relevance of psychological resilience issues has



been acutely exacerbated in the context of a pandemic in 2019. The pandemic, the increased number of deaths, the quarantine, and the strict measures taken against the virus could lead to increased mental health problems for people, especially emotionally unstable adolescents (Kumar & Nayar, 2021). Research highlights the existence of similar problems in psychology students, which is even more important as they as professionals will be called upon to deal with similar problems (Drigas & Papoutsi, 2020; Vigo et al., 2020).

In the practice of training psychologists, the emphasis is often placed on positive or humanistic psychology as a theoretical background for the personal growth of a future psychologist (Chu, 2022). Without the student acquiring extensive practical experience and experience of self-exploration, such an approach can lead to a narrow interpretation of positivity as limiting one's own reactions and behavior to conditionally "positive" ones. Emotional flexibility is basically seen as the freedom to feel the full range of possible emotions triggered by a combination of relevant stimuli, as well as the ability to balance between states of negativity and positivity and the ability to maintain that balance across the life span (Costa et al. Jr, 2019; Gardner et al., 2020).

A growing body of research shows that emotional inflexibility is a "wedge" for thoughts, feelings, and behaviors that are not good for a person and lead to a number of psychological problems, including depression and anxiety. On the contrary, emotional balance, flexibility, and adaptability of thoughts and feelings, which allow optimal response to any circumstances, lead to prosperity and success (Serrano-Ibáñez et al., 2022; Smetana & Rote, 2019).

The goal of developing emotional flexibility is to manage emotions and use them to move forward in work and relationships. The need to learn to limit emotions that hinder personal development makes it possible to cope with disorders and move towards the achievement of desired goals (Bullis et al., 2019). Emotional flexibility is often in one way or another identified with emotional intelligence as a sign of high development. Emotional flexibility is active self-control not in the sense of limiting and stopping behavioral or emotional manifestations, but in the sense of managing the latter (Cloitre et al., 2019).

Based on the foregoing, the researchers conclude that emotional flexibility presupposes dynamic and active behavior (Roth et al., 2019; Sheppes, 2020; Zimmer-Gembeck, 2021). Emotionally flexible person is able to adapt to a complex and rapidly changing world. He/she endures great stress and hardships without losing enthusiasm, openness, and sensitivity. They remember that life is not always easy, but they remain true to their values and continue to strive for ambitious and long-term goals. Sometimes they get angry, upset, etc., but they treat such emotions with interest and understanding and eventually accept them.

#### Literature review

In psychology, the problem of studying emotional flexibility is a young phenomenon in both foreign and Russian research. A distinctive feature of most studies on this topic is the use of two terms to define flexibility: flexibility itself and variability, which means versatility. Several works of researchers of different countries distinguish two substructures of emotional flexibility: emotional stability and positive emotional expressiveness, which are interdependent (Iannucci et al., 2021; Mitina, 2020; Pruessner et al., 2020).

Emotional stability is characterized as the ability to control one's emotions, mood and the ability to find an adequate explanation of the situation, realistic verbal and nonverbal expression. Some academics explain emotional expression as expressiveness, rigidly embedded in movements, gestures, gait, facial expressions, and speech (Seyda & Tabancali, 2020). The author sees empathy as a systemic constitution that includes reflection and awareness of the emotional state of another person, sympathy for someone, and active supportive behavior. Emotional sensitivity as a component of emotional flexibility refers to the ability to reflect a feeling, to accept it without absorbing another person's feelings (Kim et al., 2019; MacIntyre et al., 2019).

Emotional flexibility allows an individual to exercise internal control over his or her behavior, take responsibility for his or her actions, manage emotions, overcome psychological barriers, maintain a positive emotional background; while cognitive flexibility provides ease, proactivity, and originality in decision-making, independence in judgments (Li et al., 2020).

Research indicates that it is during this period that teenagers are able to feel uncertainty, fears and significant changes in their routine, physical and social isolation, which is a factor in the formation of a number of psychological problems (apathy, depression, etc.). Indeed, research shows that during the COVID-19 pandemic, adolescents show symptoms of high levels of depression, anxiety, and posttraumatic stress disorder (Liu et al., 2020). These difficulties can interfere with adolescent development. Deng et al. (2021) in their study with adolescents stated that emotion regulation skills serve as a shield to protect mental health. Emotion regulation skills have a positive impact on psychological health, especially during unexpected and sudden health crises such as the COVID-19 pandemic. The impact of emotion regulation skills on adult well-being during a pandemic is widely recognized (Gubler et al., 2021) but very little research has addressed the impact on adolescent well-being (Yue et al., 2022). On the other hand, given their developmental characteristics, adolescents are especially vulnerable during the COVID-19 pandemic (Gotlib et al., 2021). Therefore, adolescents are in great need of effective methods to regulate their emotions.

Emotional flexibility originates from the nonverbal emotional mother-child communication. Using innovative methodological and statistical procedures, the structure (emotional flexibility) and content (expression) of positive, neutral, and negative processes that underlie nonverbal emotional communication between mothers and their school-age children were determined. The outcomes emphasize the need to examine in detail the emotional flexibility and expressions of mother-child interaction in order to better assess the mechanisms underlying how functional relationships survive development (De Raevmaecker & Dhar, 2022). The emotional rigidity is associated with difficulties in adapting and expressing emotions in conflicts, which can lead to a decrease in the level of development of relations and autonomy. The valency of emotions was not a deterrent; this excluded the assumption that exclusively negative emotions have predictive value for emotional flexibility (Smetana & Rote, 2019).

The author referred to a study in which it was proven that emotional flexibility in conflict situations contributes to healthy functioning at the socio-emotional level of parents and adolescents (Walter et al., 2020). One of the important discoveries is that emotional flexibility can affect post-traumatic stress disorder (PTSD) and severe depression. PTSD symptoms include negative changes in cognitive abilities and mood, hyper-excitation, avoidance behavior, and reexperiencing trauma. In addition, some of the injured people may also develop concomitant mental health problems, such as major depressive disorder. Although most people experience a traumatic event in their life, include war veterans, not everyone develops PTSD or depressive disorder, which raises the question of why some people are more susceptible to the effects of traumatic stress than others (Davis et al., 2021).

Some researchers consider emotional flexibility the equivalent of self-control and have found that neither intelligence, creativity, nor personality type predetermines success. What matters is how we control our thoughts and feelings and how we conduct our inner dialogue. Group of researchers Kashdan et al. came to the conclusion that overcoming distress on the way to achieving goals and stable well-being and prosperity is associated with the experiencing and coping of all emotions, without exception, both positive and negative. Acceptance also enables us to become more resilient in terms of mental health (Kashdan et al., 2020).

Teenagers' emotional flexibility among earthquake survivors was measured by authors from China. Furthermore, the authors declare that a scale of emotional flexibility has been developed and tested. The study also examined the relationship between emotional flexibility and the psychological well-being of adolescents who survived the earthquake in Sichuan, China in 2008 (Fu et al., 2018). A group of researchers from different countries associate strategies for regulating emotions with people's age characteristics and note their impact on emotional flexibility (Benson et al., 2019).

The correlation of emotional flexibility and the degree of recovery after pain were investigated when studying the relationship between two aspects of emotional flexibility (flexible emotional responsiveness and affective flexibility) and tolerance to experimentally induced pain. In addition, difficulties were found in switching between emotions. The authors found that flexibility in emotional responsiveness helps recover from pain faster and more effectively overcome misunderstandings. The regulation of emotional manifestations in parents does not counteract sincerity, but allows children, reflecting the behavior of adults, to improve the quality of their own emotional intelligence (De Raeymaecker & Dhar, 2022; Meesters et al., 2019).

The COVID-19 pandemic has led to difficulties for people around the world, and current research has shown a significant impact of this pandemic on mental health. People with high health anxiety are at risk of adverse mental health consequences, including peritraumatic distress and mood disorders. To increase psychological resilience at this time, it is important to understand what goals may be modified for the clinical intervention. Some of the researches argue that psychological flexibility is the cornerstone of psychological health and resilience (Kroska et al., 2020; Landi et al., 2020; Pakenham et al., 2020).

Some researchers offer practitioners evidence-based tools that will support psychological flexibility, self-care, and positive parenting behavior. In this article, emotional flexibility is considered as part of psychological flexibility (Coyne et al., 2021; Walter et al., 2020).

Analyzing the works of most researchers, there is a general trend - emotional flexibility is necessary in early childhood, it helps to cope with psychotraumatic situations, to pass through depression and stress, to successfully avoid emotional burnout. Due to the COVID-19 pandemic, the population of different countries has a significant increase in the level of anxiety, depression, confusion, hopelessness, etc., which further increases the relevance of the research and consideration of emotional flexibility not only as a professional quality of individual specialists, but also as a vital function of the psyche of any person.

The problem under study is the degree of influence of psychology education, which deepens with each university course, on the personal emotional competence of students:

 Table 1
 Results of the Kruskal-Wallis H-Criterion Statistical Analysis of Hall's Emotional Intelligence Test (EQ Test)

Parameters	EO	USE	SM	Е	UEDL
H - criterion (chi-squared)	3.641	6.932	4.695	5.095	5.916
p/asymptote meaning	0.303	0.074	0.196	0.165	0.116
Note. Scales: EO - Emotion	nal Awa	reness,	USE -	Managi	ng One's
Emotions, SM - Self-motiv	ation. E	- Empa	athy. UI	EDL - N	Janaging

Emotions, SM - Self-motivation, E - Empathy, UEDL - Other People's Emotions

their emotional intelligence and ability to cope with stress (Drigas & Papoutsi, 2020; Lea et al., 2019). These are the challenges that are most common and that almost every person has to face, and therefore a psychologist who can be professionally involved in counseling different personalities (Vigo et al., 2020; Zimmer-Gembeck, 2021).

The study relies mainly on the coverage of this problem within the framework of the constructivist and cognitivist approaches, which in a number of studies indicate that university education does not necessarily form the personal experience of the student and does not always allow him to form his own model of professional knowledge, which he could effectively apply in practice (Benson et al., 2019; Kashdan et al., 2020; Stapleton & Stefaniak, 2019). A number of researchers point out that the availability of knowledge and often even good professional skills applicable to patients very rarely manifest themselves in the ability of a professional psychologist to be effective within his personality and personal psychological needs. A professional may be able to relieve stress in patients and be unable to recognize the accumulation of stress in himself in time, he may teach emotional competence and at the same time not possess it enough (Bullis et al., 2019; Drigas & Papoutsi, 2020; Halian et al., 2020). An important question is whether this gap is formed directly in the course of university education and whether it can be observed in differences, for example, between homogeneous samples of students of different courses.

The main issue of the research is to search for strategies and features of the impact of psychological professional education on the ability to cope with one's own stress in reality and in practice, to establish whether psychological education increases emotional flexibility and whether there can be a connection between the degree of education, emotional intelligence and the ability to cope with stress on personal experience.

The following hypothesis have been put forward: between four groups, there are only random differences in terms of emotional flexibility. In the course of testing hypotheses, the results were obtained, which are reflected in Tables 1, 2 and 3.

Table 2 Statistical Analysis of ERQ and Questionnaire of Emotional Intelligence by D.V. Lusina According to the Kruskal-Wallis H-Criterion	f Emotional	Intelligence	by D.V. L	usina Accoi	rding to the	Kruskal-Wa	allis H-Crite	rion				
Parameters	KP	PE	MP	MU VU		VE	ΛP	MEI	VEI	EP	UE	OEI
H – criterion (chi-squared)	2.386	1.609	3.375	5.128	8.067	0.632	3.839	5.436 2.293	2.293	3.083	3.934	3.222
p/asymptote meaning	0.496	0.657	0.337	0.163 0.045	0.045	0.889	0.279	0.143	0.514 0.379	0.379	0.269	0.359
Note: ERQ Questionnaire Scales: KP - cognitive reassessment, PE - silencing; Scales of the Emin emotional intelligence questionnaire by D.V. Lusina: MP - Understanding other people's	essment, PE	- silencing	; Scales of	the Emin (	emotional i	ntelligence	questionna	re by D.V.	Lusina: MP	- Understa	anding other	· people's
emotions, MU - Managing other people's emotions, VU - Managing one's own emotions, VE - Expression control, VP - Understanding one's own emotions, MEI - interpersonal emotional	U - Managin	g one's ow	n emotions	i, VE - Exp	ression con	trol, VP - U	Jnderstandi	ng one's ow	n emotions	, MEI - int	erpersonal e	emotional
intelligence (Understanding and Managing other people's emotions), VEI - intrapersonal emotional intelligence (Managing one's own emotions + Expression control + Understanding one's	le's emotion	s), VEI - in	trapersona	l emotional	intelligenc	e (Managir	ng one's ow	n emotions	+ Expressio	n control +	Understand	ing one's
own emotions) FD- ability to inderstand one's own and others' emotions (Understanding other neonle's emotions+Understanding one's own emotions) UE- managing one's own and others'	l others' emo	tions (Und	erstandino	other neon	le's emotion	s+Unders	tanding one	's own emo	tions). UE-	manaoino	one's own ai	d others'

emotions (Managing other people's emotions + Managing one's own emotions + Expression control), OEI - overall emotional intelligence

Table 3 Results of Statistical Analysis According to the Kruskal-Wallis H-Criterion for the Coping Stress (COPE) Questionnaire (C.S. Carver, M.F. Scheier, J.K. Weintraub)	cal-Wallis	H-Criter	ion for th	ne Coping	g Stress (	COPE) (	Question	naire (C.S	S. Carver	, M.F. So	cheier, J.F	<ol> <li>Weintr</li> </ol>	aub)		
Parameters	F1	F2	F3	I F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 F13 F14 F15	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15
H - criterion (chi-squared)	10.94	10.05	2.25	0.94 10.05 2.25 4.46 1.54 0.97 8.96 2.09 5.14 7.79 2.91 0.92 2.99 6.19 7.45	1.54	0.97	8.96	2.09	5.14	7.79	2.91	0.92	2.99	6.19	7.45
p/asymptote meaning	0.012	0.018	0.522	0.012  0.018  0.522  0.216  0.673  0.808  0.030  0.554  0.162  0.051  0.406  0.820  0.393  0.103  0.059  0.05	0.673	0.808	0.030	0.554	0.162	0.051	0.406	0.820	0.393	0.103	0.059
Note. COPE scales: F1: Positive reformulation and personal growth, F2: A mental escape from the problem, F3: Focus on emotions and their active expression, F4: Use of instrumental social	growth, F	2: A men	ntal escaj	pe from t	he proble	em, F3: F	ocus on	emotion	s and the	ir active	expressi	on, F4: L	Jse of ins	trument	al social
support, F5: Active coping, F6: Denial, F7: Turn to religion, F8: Humor, F9: Behavioral avoidance of the problem, F10: Repression, F11: Use of emotional social support, F12: Use of sedatives,	F8: Humo	r, F9: Bel	havioral	avoidanc	se of the J	problem,	F10: Rej	pression,	F11: Use	of emot	ional soc	ial suppo	ort, F12: 1	Use of se	datives,
F13: Acceptance, F14: Suppression of competing activities, F15: Planning	F15: Plann	ing													

# Methods

# **Research design and sample**

For the study purpose, a survey was conducted among psychology students (from 1 to 4 study years). Psychology students were divided into 4 groups according to the curriculum at the university, namely the following groups were formed:

Group 1-1st year students (30 people);

Group 2-2nd year students (30 people);

Group 3–3rd year students (30 people);

Group 4–4th year students (30 people).

It is also necessary to notice that the structure of a sample by a criterion "quantity of adverse events in the childhood" is rather evenly differentiated. Thus, according to a preliminary survey, about 56% of respondents in every group indicate the presence of essential psychological problems in childhood. Groups of equal size were selected to preserve the possibility of further use of parametric methods for testing statistical hypotheses (Student's t-test and others). The participants in the groups were randomly selected, and therefore the inclusion of those who had significant psychological problems in childhood is probably a reflection of the presence of such problems in the general sample.

In each group, there was an equal distribution of men and women (15 people each). The selection of participants within these criteria was carried out on a random basis. The probable sampling error, taking into account the number of psychology students in an educational institution as a general sample, does not exceed p=1.31 and the sample is representative.

A series of tests was carried out for each of the groups. Each group completed the test in person while in the classroom, but did not come into contact with each other according to the conditions of testing. The groups conducted tests separately from each other. The tests were run sequentially, one day apart after each test. Statistical processing and analysis of the results were carried out after completion of all tests in all groups.

# Data analysis and statistical processing

Analysis of emotional flexibility indicators of future psychologists in 1–4 study years was carried out using the following methods: emotional intelligence test (EQ test) (Palmer et al., 2005), Emotion Regulation Questionnaire (ERQ) (Preece et al., 2019), D.V. Lyusin emotional intelligence instrument (Emin) (Lyusin, 2006), coping stress inventory - COPE (Carver et al., 1989); the obtained results were compared by Kruskal-Wallis criterion. The measurement tools used directly contain scales and a description of flexibility as a significant parameter of emotional intelligence and the ability to cope with problems. In these scales, an increase in coping ability, for example, is directly related to an increase in flexibility (Carver et al., 1989). The dependence of coping and emotional intelligence on psychological flexibility in particular for medical workers has been studied in other studies (Kruczek et al., 2020).

The statistical data obtained through the questionnaire survey were analyzed using Kruskal-Wallis H-test. Kruskal-Wallis H-test is designed to evaluate differences between three or more samples at the same time according to the level of a particular attribute. It allows one to establish the similarity-difference of three or more empirical distributions (when identifying differences in the level of the studied trait) for independent samples (MacFarland & Yates, 2016).

#### **Ethical issues**

Participation in the study was voluntary. All study participants were aware of the essence and purpose of the study and gave their personal consent to participate. No personal data of the participants were collected, stored or used during or after study. The survey was conducted on an anonymous basis using the identification numbers of the participants, which ensured their anonymity.

#### **Research limitations**

The study covers a small group of students of the same specialty, and applying its results to a large population may not be relevant. The survey was also conducted only once, using suitable statistical tools; different groups were not compared; pre-test and post-test were not conducted.

# Results

The first and basic test that the study participants passed was the test of emotional intelligence, which can be used as a more general assessment of emotional intelligence compared to a more detailed analysis of a separate component of psychological flexibility in subsequent tests. The results of this test are presented in Table 1.

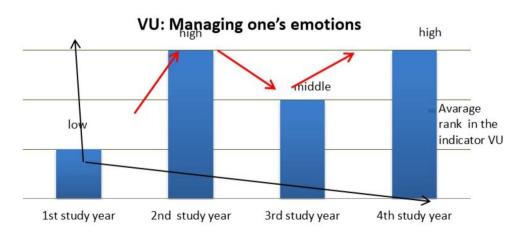
The analysis of data by the Kruskal-Wallis H-criterion did not reveal significant differences in any of Hall's EQ test indicators. Therefore, the hypothesis H0 about the similarity of these indicators is accepted, and the hypothesis H1 about the presence of differences is rejected, that is, four groups of psychology students of 1–4 study years do not differ in terms of the emotional intelligence (Table 2).

As a result of data analysis by the Kruskal-Wallis H-criterion, a significant difference was revealed in one of the indicators of D.V. Lusina, namely, VU - management of one's own emotions.

Consequently, the hypothesis H0 is accepted about the similarity of all other indicators of the questionnaires by J. Gross and D.V. Lusina, and hypothesis H1 about the presence of differences is accepted only for "managing one's own emotions", that is, four groups of psychology students of 1–4 study years differ from each other in terms of managing their emotions in the questionnaire of emotional intelligence by D.V. Lusina.

An analysis of the Kruskal-Wallis H-criterion indicates that psychology students of the 2nd year are most successful in managing their emotions; this indicator significantly decreases for the third-year students and rises for the 4th -year students (Fig. 1; Table 3).

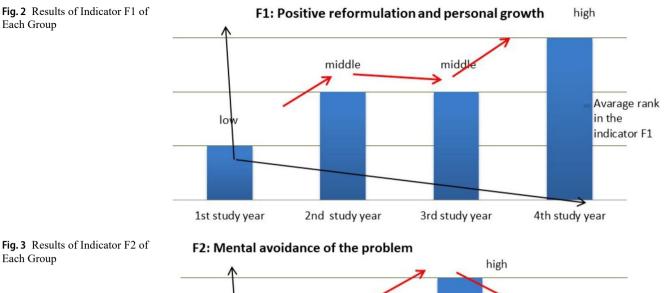
The analysis of data on the Kruskal-Wallis H-criterion revealed significant differences in four indicators of the coping stress questionnaire, namely, in terms of indicators: F1: Positive reformulation and personal growth, F2: Mental departure from the problem, F7: Religion, F10: Containment, which made it possible to refute the null hypothesis H0 for these indicators, that is, four groups of psychology



**Fig. 1** Results of VU Indicator of Each Group

Each Group

Each Group



middle

2nd study year

students differ in these indicators of coping with stress among themselves.

low

1st study year

Analyzing Table 3, one can say that the highest average rank in the indicator "Positive reformulation and personal growth" was obtained in group 4, in group 1 it is significantly lower, in groups 2 and 3 - higher than the indicator of 1 group, but significantly lower than the rate of 4 group (Fig. 2).

This demonstrates that for psychology students of the 4th year, a strategy of positive reformulation and personal growth of coping with stress is more characteristic than for psychology students of 1-3 years.

This indicates that the training positively affected the choice of coping strategies for stress, psychology students of 4 year are able to attempt to rethink the stressful situation in a positive way, which junior psychology students are less able to do.

According to the indicator "Mental avoidance of the problem", the highest average rank was obtained in group 3, the lowest in group 1; groups 2 and 4 show approximately the same results. This means that 3rd -year psychology students are more inclined than other students to use different types of activity as a coping strategy for stress to distract from unpleasant thoughts associated with the problem, such as fantasy formation and sleep (Fig. 3).

3rd study year

middle

4th study year

Avarage

rank in the indicator F2

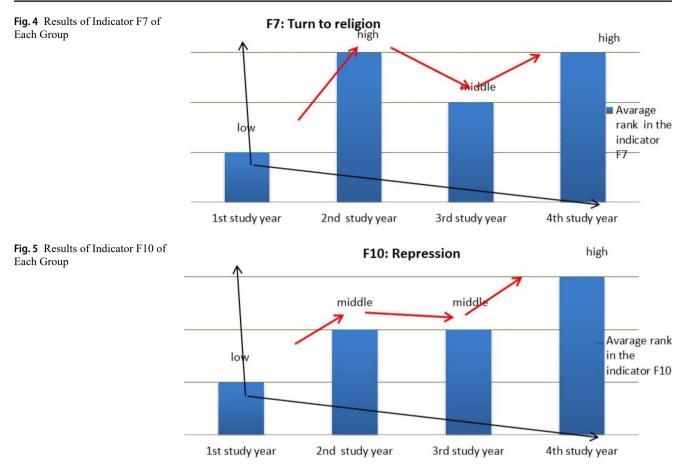
Analyzing the table, one can say that the highest average rank in the "Conversion to Religion" indicator was obtained in groups 2 and 4, in group 1 it is significantly lower, and in group 3 it is higher than the indicator for 1 group, but significantly below indicators of 2 and 4 years.

This indicates that psychology students of the 2nd and 4th years turn to religion in comparison with students of the 1st and 3rd years (Fig. 4).

Perhaps this means that both the psychological knowledge gained, and government policy, an appeal to national traditions and religions had a significant impact on the result.

Analyzing the table, one can say that the highest average rank in terms of "Repression" was obtained in group 4, in group 1 it was the lowest.

This suggests that senior psychology students are increasingly inclined to use the "Repression" strategy of coping with stress, that is, waiting for the right moment for action and refraining from too hasty, impulsive actions. Perhaps it was the content of psychological training that contributed to the formation and preference of this model of coping with stress among senior psychology students (Fig. 5).



Therefore, according to emotional intelligence indicators, only one significant difference was revealed between future psychologists of 1–4 years, namely, in managing their emotions. Psychology students of the 2nd year are most successful in managing their emotions; this indicator significantly decreases in the third year and rises by the 4th year.

Supposedly, this indicates that psychological education does not, despite its pronounced theoretical orientation, have a significant effect on emotional intelligence as an indicator of emotional flexibility.

According to the indicators of strategies for coping with stress between future psychologists of 1–4 years, four significant differences out of 15 possible are revealed, namely for such strategies as: positive reformulation and personal growth, mental avoidance of the problem, conversion to religion, and repression.

Psychological training had a positive effect on the choice of coping strategies with stress, 4th -year psychology students are able to attempt to rethink the stressful situation in a positive way, wait for the right moment for actions and refrain from too hasty, impulsive actions, and they are also more likely to turn to religion in comparison with 1st -year students (Fig. 6). At the same time, 3rd-year psychology students are more inclined than other students to use various types of activity as a strategy for coping with stress to distract from unpleasant thoughts associated with the problem, for example, fantasy formation and sleep, which indicates that they chose a more passive than active strategy of coping with stress (see Table 4).

# Discussion

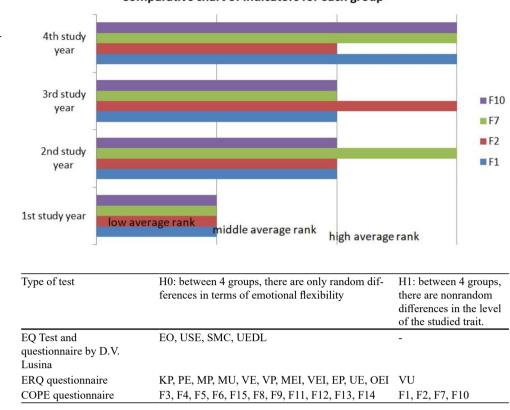
The results of the study demonstrate that in order to cope with a difficult life situation, psychology students can use the conscious development of behavioral strategies, positive reformulation and personal growth tools. The results also confirm the findings of studies by other researchers that students engage in various activities to distract from unpleasant thoughts and experiences associated with an actual problem. They may use sleep or fantasy formation and gaming (Babicka-Wirkus et al., 2021; Iacovides & Mekler, 2019). As the study presented here has shown, such strategies are less common among economics and medical students.

Therefore, in terms of future psychologists' coping with stress, one can talk about significant similarity of the studied **Fig. 6** Comparative Chart of Indicators for Each Group (F1: Positive Reformulation and Personal Growth, F2: Mental Avoidance of the Problem, F7: Turn to Religion, F10: Repression)

Table 4 Results of Hypothesis

Confirmation by Indicators of

Each Test



Comparative chart of indicators for each group

features with the requirements that are set in relation to the psychological readiness of teachers at school (Gustems-Carnicer et al., 2019). Probably, it was the content of psychological education during all four years of study that had a positive impact on the diversity of strategies for coping with stress of future psychologists and positively influenced the development of emotional flexibility of future psychologists overall (Hughes et al., 2020).

Many studies indicate that emotional flexibility is either a predictor or a significant component for the effectiveness, self-awareness, self-confidence and psychological wellbeing of teachers and professions related to psychological competencies (Bullis et al., 2019; MacIntyre et al., 2019). This may be related both to the ability to transform the distress and disorders of patients, students and work partners, as well as to cope with one's own stress (Zimmer-Gembeck, 2021). Teaching coping strategies should be closely related to the development of the psychological flexibility of professional psychologists.

The formation of situational emotional flexibility in stressful situations reflects the ability of the individual to coping with the consequences of psychological trauma, with its coping strategies and the ability to maintain good health. A study by Cherry et al. (2021) demonstrates that in the scope of modern practical psychology there are a small number of measurement methods aimed at identifying

problems of emotional flexibility. The ability to regulate emotions was more often associated with self-compassion; self-compassion reflected lower levels of reflection and lower anxiety. A person with a low level of self-compassion and a high level of self-criticism has been found to obviously have a low ability to modulate emotions (Coyne et al., 2021; Pyszkowska & Rönnlund, 2021). Some researchers point out that these behaviors may manifest in biased threat signals (attention) and negative interpretations (cognitive changes) of situations, where they tell themselves that it is their fault, that they feel bad or that they always make mistakes (Pyszkowska & Rönnlund, 2021). These stress reactions due to negative self-talk serve to activate the body's stress response and deactivate the body's self-soothing system (Gardner et al., 2020).

The study findings are in many ways consistent with other previous studies of emotional flexibility and coping ability. Emotional flexibility studies indicate that, in most cases, empirical research identified relatively strong tendencies and large groups of participants for whom some common characteristics were true (Meesters et al., 2019; Serrano-Ibáñez et al., 2022; Smetana & Rote, 2019). In the present study, the behavior and characteristics of the studied groups turned out to be much more fragmented and diverse. This may be a manifestation of differences in life experience accumulated by students in different courses of study. Also, during training, under the influence of communications, new experience and cognitive development, the ability to cope with situations develops (Doorley et al., 2020; Quattropani et al., 2022).

The result of significant differences and uneven development of individual indicators of emotional flexibility and coping demonstrated in the present study stands out among similar studies (Benson et al., 2019; Cloitre et al., 2019; Gardner et al., 2020; Kroska et al., 2020). This is primarily because in other empirical studies, the authors did not study such a wide variety of groups in the sample and therefore could not notice this effect. Individual features of the formation of psychological flexibility have been little studied, while the individual nature of coping strategies has been confirmed by many studies (Gustems-Carnicer et al., 2019; Fteiha & Awwad, 2020; Rusu et al., 2020).

One would expect that the increase in scores for indicators should gradually increase as the age and experience of the participants increase. However, in reality this is not the case, the formation of individual components of emotional flexibility occurs unevenly, and this effect cannot be explained by the personal characteristics of each participant, because significant differences are observed not within groups by years of study, but between these groups (Iannucci et al., 2021; Kashdan et al., 2020). Similar effects were indicated by a number of researchers who were involved in the processes of psychological adaptation and coping (Coyne et al., 2021; Doorley et al., 2020; Sheppes, 2020). These processes occur unevenly and not systematically throughout the life of an individual.

Higher indicators of psychology students in comparison with students of other specialties confirm a number of phenomena recorded by other researchers earlier (Fteiha & Awwad, 2020; Li & Hasson, 2020). Psychology students gain more knowledge in their field, which helps them to deal more effectively with problem situations, which emphasizes the importance of not only practical life experience, but also academic learning for the development of emotional flexibility and the ability to cope (Fteiha & Awwad, 2020; Roth et al., 2019).

# Conclusion

The ability to be flexible is a necessary skill in order to cope with the inevitable changes in life. This property makes it easier to adapt to new circumstances, challenges, and situations as they arise. Emotional flexibility is manifested in the ability to easily, quickly, adequately emotionally respond to any external influences, expressed in the ability to express emotions, empathize, and reflect. Emotional flexibility can also be called the ability to show sincere emotions and experiences, to respond in a variety of ways, and at the same time to show empathy and concern for others. The ability to recover from initial emotional reactions when the context of the situation changes creates a link between emotional flexibility and psychological health.

The study purpose was to deeply diagnose components of psychological flexibility and the ability to cope with the inevitable changes among psychology students. The novelty of the research lies in the maximum multi-factor and multi-component coverage of the study sample using four different specialized psychometric tools, which made it possible to more accurately determine the dynamics of training psychology students and the most important factors of this training. The study involved 4 equal groups of university students (30 people each from 1 to 4 study years). The null hypothesis of the absence of significant differences between groups' scores based on various psychological flexibility aspects was tested using Student's t-test and Kruskal-Wallis H-test. The null hypothesis was rejected, an alternative hypothesis about the occurrence of significant differences both between groups of participants and between the assessment of individual factors of psychological flexibility in different groups was accepted. The practical application of the research lies in improving the training of psychology students; the research results can be used as methods for determining psychological flexibility factors that require development in the studied groups. Further research should identify differences in the assessment of the ability to cope with stress, assess the emotional flexibility of different groups in response to different types of interventions and in different circumstances, as well as identify the reasons for the significant differences in emotional flexibility indicators of different groups.

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## References

- Babicka-Wirkus, A., Wirkus, L., Stasiak, K., & Kozłowski, P. (2021). University students' strategies of coping with stress during the coronavirus pandemic: Data from Poland. *PLoS One*, 16(7), e0255041. https://doi.org/10.1371/journal.pone.0255041
- Benson, L., English, T., Conroy, D. E., Pincus, A. L., Gerstorf, D., & Ram, N. (2019). Age differences in emotion regulation strategy use, variability, and flexibility: An experience sampling approach. *Developmental Psychology*, 55(9), 1951–1964. https:// doi.org/10.1037/dev0000727
- Bullis, J. R., Boettcher, H., Sauer-Zavala, S., Farchione, T. J., & Barlow, D. H. (2019). What is an emotional disorder? A transdiagnostic mechanistic definition with implications for assessment, treatment, and prevention. *Clinical psychology: Science and Practice*, 26(2), 20. https://doi.org/10.1037/h0101755
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56(2), 267–283. https://doi. org/10.1037/0022-3514.56.2.267
- Cherry, K. M., Hoeven, V., Patterson, E., T. S., & Lumley, M. N. (2021). Defining and measuring "psychological flexibility": A narrative scoping review of diverse flexibility and rigidity constructs and perspectives. *Clinical Psychology Review*, 84, 101973. https:// doi.org/10.1016/j.cpr.2021.101973
- Chu, T. L. A. (2022). Applying positive psychology to foster student engagement and classroom community amid the COVID-19 pandemic and beyond. *Scholarship of Teaching and Learning in Psychology*, 8(2), 154–163. https://doi.org/10.1037/stl0000238
- Cloitre, M., Khan, C., Mackintosh, M. A., Garvert, D. W., Henn-Haase, C. M., Falvey, E. C., & Saito, J. (2019). Emotion regulation mediates the relationship between ACES and physical and mental health. *Psychological Trauma: Theory Research Practice* and Policy, 11(1), 82. https://doi.org/10.1037/tra0000374
- Costa, P. T. Jr., McCrae, R. R., & Löckenhoff, C. E. (2019). Personality across the life span. *Annual Review of Psychology*, 70, 423–448. https://doi.org/10.1146/annurev-psych-010418-103244
- Coyne, L. W., Gould, E. R., Grimaldi, M., Wilson, K. G., Baffuto, G., & Biglan, A. (2021). First things first: Parent psychological flexibility and self-compassion during COVID-19. *Behavior Analysis in Practice*, 14(4), 1092–1098. https://doi.org/10.1007/ s40617-020-00435-w
- Davis, A. K., Xin, Y., Sepeda, N. D., Garcia-Romeu, A., & Williams, M. T. (2021). Increases in psychological flexibility mediate relationship between acute psychedelic effects and decreases in racial trauma symptoms among people of color. *Chronic Stress*, 5, 1–10. https://doi.org/10.1177/24705470211035607
- De Raeymaecker, K., & Dhar, M. (2022). The influence of parents on emotion regulation in middle childhood: A systematic review. *Children*, 9(8), 1200. https://doi.org/10.3390/children9081200
- Deng, W., Gadassi Polack, R., Creighton, M., Kober, H., & Joormann, J. (2021). Predicting negative and positive affect during COVID-19: A daily diary study in youths. *Journal of Research on Adolescence*, 31(3), 500–516. https://doi.org/10.1111/jora.12646
- Doorley, J. D., Goodman, F. R., Kelso, K. C., & Kashdan, T. B. (2020). Psychological flexibility: What we know, what we do not know, and what we think we know. *Social and Personality Psychology Compass*, 14(12), 1–11. https://doi.org/10.1111/spc3.12566
- Drigas, A., & Papoutsi, C. (2020). The need for emotional intelligence training education in critical and stressful situations: The case of

Covid-19. International Journal of Recent Contributions from Engineering Science & IT, 8(3), 20–36. https://doi.org/10.3991/ ijes.v8i3.17235

- Fteiha, M., & Awwad, N. (2020). Emotional intelligence and its relationship with stress coping style. *Health Psychology Open*, 7(2), 1–9. https://doi.org/10.1177/2055102920970416
- Fu, F., Chow, A., Li, J., & Cong, Z. (2018). Emotional flexibility: Development and application of a scale in adolescent earthquake survivors. *Psychological Trauma: Theory Research Practice and Policy*, 10(2), 246–252. https://doi.org/10.1037/tra0000278
- Gardner, A. A., Zimmer-Gembeck, M. J., & Campbell, S. M. (2020). Attachment and emotion regulation: A person-centred examination and relations with coping with rejection, friendship closeness, and emotional adjustment. *British Journal of Developmental Psychology*, 38(1), 125–143. https://doi.org/10.1111/bjdp.12310
- Gotlib, I. H., Borchers, L. R., Chahal, R., Gifuni, A. J., Teresi, G. I., & Ho, T. C. (2021). Early life stress predicts depressive symptoms in adolescents during the COVID-19 pandemic: The mediating role of perceived stress. *Frontiers in Psychology*, *11*, 603748. https://doi.org/10.3389/fpsyg.2020.603748
- Gubler, D. A., Makowski, L. M., Troche, S. J., & Schlegel, K. (2021). Loneliness and well-being during the Covid-19 pandemic: Associations with personality and emotion regulation. *Journal of Happiness Studies*, 22(5), 2323–2342. https://doi.org/10.1007/ s10902-020-00326-5
- Gustems-Carnicer, J., Calderón, C., & Calderón-Garrido, D. (2019). Stress, coping strategies and academic achievement in teacher education students. *European Journal of Teacher Education*, 42(3), 375–390. https://doi.org/10.1080/02619768.2019.1576629
- Halian, A., Halian, I., Burlakova, I., Shevchenko, R., Lappo, V., Zhigarenko, I., & Popovych, I. (2020). Emotional intelligence in the structure of adaptation process of future healthcare professionals. *Revista Inclusiones*, 7, 447–460.
- Hughes, D. J., Kratsiotis, I. K., Niven, K., & Holman, D. (2020). Personality traits and emotion regulation: A targeted review and recommendations. *Emotion*, 20(1), 63–67. https://doi.org/10.1037/ emo0000644
- Iacovides, I., & Mekler, E. D. (2019). The role of gaming during difficult life experiences. In *Proceedings of the 2019 CHI conference* on human factors in computing systems (pp. 1–12). ACM. https:// doi.org/10.1145/3290605.3300453
- Iannucci, C., Richards, K. A. R., & MacPhail, A. (2021). The relationships among personal accomplishment, resilience and teachers' experience of teaching multiple school subjects role conflict. *European Physical Education Review*, 27(3), 613–635. https:// doi.org/10.1177/1356336X20980777
- Kashdan, T. B., Disabato, D. J., Goodman, F. R., Doorley, J. D., & McKnight, P. E. (2020). Understanding psychological flexibility: A multimethod exploration of pursuing valued goals despite the presence of distress. *Psychological Assessment*, 32(9), 829–850. https://doi.org/10.1037/pas0000834
- Keltner, D., Sauter, D., Tracy, J., & Cowen, A. (2019). Emotional expression: Advances in basic emotion theory. *Journal of Nonverbal Behavior*, 43, 133–160. https://doi.org/10.1007/ s10919-019-00293-3
- Kim, L. E., Jörg, V., & Klassen, R. M. (2019). A meta-analysis of the effects of teacher personality on teacher effectiveness and burnout. *Educational Psychology Review*, 31, 163–195. https://doi. org/10.1007/s10648-018-9458-2
- Kroska, E. B., Roche, A. I., Adamowicz, J. L., & Stegall, M. S. (2020). Psychological flexibility in the context of COVID-19 adversity: Associations with distress. *Journal of Contextual Behavioral Science*, 18, 28–33. https://doi.org/10.1016/j.jcbs.2020.07.011
- Kruczek, A., Basińska, M. A., & Janicka, M. (2020). Cognitive flexibility and flexibility in coping in nurses-the moderating role of age, seniority and the sense of stress. *International Journal of*

Occupational Medicine and Environmental Health, 33(4), 507–521. https://doi.org/10.13075/ijomeh.1896.01567

- Kumar, A., & Nayar, K. R. (2021). COVID 19 and its mental health consequences. *Journal of Mental Health (Abingdon England)*, 30(1), 1–2. https://doi.org/10.1080/09638237.2020.1757052
- Landi, G., Pakenham, K. I., Boccolini, G., Grandi, S., & Tossani, E. (2020). Health anxiety and mental health outcome during COVID-19 lockdown in Italy: The mediating and moderating roles of psychological flexibility. *Frontiers in Psychology*, 11, 2195. https://doi.org/10.3389/fpsyg.2020.02195
- Lea, R. G., Davis, S. K., Mahoney, B., & Qualter, P. (2019). Does emotional intelligence buffer the effects of acute stress? A systematic review. *Frontiers in Psychology*, 10, 810. https://doi.org/10.3389/ fpsyg.2019.00810
- Li, Z. S., & Hasson, F. (2020). Resilience, stress, and psychological well-being in nursing students: A systematic review. *Nurse Education Today*, 90, 104440. https://doi.org/10.1016/j. nedt.2020.104440
- Li, L., Gow, A. D. I., & Zhou, J. (2020). The role of positive emotions in education: A neuroscience perspective. *Mind Brain and Education*, 14(3), 220–234. https://doi.org/10.1111/mbe.12244
- Liu, C. H., Zhang, E., Wong, G. T. F., & Hyun, S. (2020). Factors associated with depression, anxiety, and PTSD symptomatology during the COVID-19 pandemic: Clinical implications for US young adult mental health. *Psychiatry Research*, 290, 113172. https:// doi.org/10.1016/j.psychres.2020.113172
- Lyusin, D. V. (2006). A new technique for measuring emotional intelligence: The Emin questionnaire. *Psychological Diagnostics*, 4, 3–22.
- MacFarland, T. W., & Yates, J. M. (2016). Kruskal–Wallis H-test for oneway analysis of variance (ANOVA) by ranks. *Intro*duction to nonparametric statistics for the biological sciences using R (pp. 177–211). Cham: Springer. https://doi. org/10.1007/978-3-319-30634-6\_6
- MacIntyre, P. D., Ross, J., Talbot, K., Mercer, S., Gregersen, T., & Banga, C. A. (2019). Stressors, personality and wellbeing among language teachers. *System*, 82, 26–38. https://doi.org/10.1016/j. system.2019.02.013
- Meesters, A., Vancleef, L. M., & Peters, M. L. (2019). Emotional flexibility and recovery from pain. *Motivation and Emotion*, 43(3), 493–504. https://doi.org/10.1007/s11031-018-9748-5
- Mitina, L. M. (2020). Innovative approach to the preparation of future teachers. ARPHA Proceedings, 3, 1673.
- Pakenham, K. I., Landi, G., Boccolini, G., Furlani, A., Grandi, S., & Tossani, E. (2020). The moderating roles of psychological flexibility and inflexibility on the mental health impacts of COVID-19 pandemic and lockdown in Italy. *Journal of Contextual Behavioral Science*, 17, 109–118. https://doi.org/10.1016/j. jcbs.2020.07.003
- Palmer, B. R., Gignac, G., Manocha, R., & Stough, C. (2005). A psychometric evaluation of the Mayer–Salovey–Caruso emotional intelligence test version 2.0. *Intelligence*, 33(3), 285–305. https:// doi.org/10.1016/j.intell.2004.11.003
- Preece, D. A., Becerra, R., Robinson, K., & Gross, J. J. (2019). The emotion regulation questionnaire: Psychometric properties in general community samples. *Journal of Personality Assessment*, *102*(3), 348–356. https://doi.org/10.1080/00223891.2018.15643 19
- Pruessner, L., Barnow, S., Holt, D. V., Joormann, J., & Schulze, K. (2020). A cognitive control framework for understanding emotion regulation flexibility. *Emotion*, 20(1), 21. https://doi.org/10.1037/ emo0000658
- Pyszkowska, A., & Rönnlund, M. (2021). Psychological flexibility and self-compassion as predictors of well-being: Mediating role of a balanced time perspective. *Frontiers in Psychology*, 12, 671746. https://doi.org/10.3389/fpsyg.2021.671746

- Quattropani, M. C., Lenzo, V., Sardella, A., & Bonanno, G. A. (2022). Expressive flexibility and health-related quality of life: The predictive role of enhancement and suppression abilities and relationships with trait emotional intelligence. *Scandinavian Journal of Psychology*, 63(6), 698–704. https://doi.org/10.1111/sjop.12849
- Roth, G., Vansteenkiste, M., & Ryan, R. M. (2019). Integrative emotion regulation: Process and development from a self-determination theory perspective. *Development and Psychopathology*, 31(3), 945–956. https://doi.org/10.1017/S0954579419000403
- Rusu, P. P., Nussbeck, F. W., Leuchtmann, L., & Bodenmann, G. (2020). Stress, dyadic coping, and relationship satisfaction: A longitudinal study disentangling timely stable from yearly fluctuations. *PloS one*, *15*(4), e0231133. https://doi.org/10.1371/journal.pone.0231133
- Serrano-Ibáñez, E. R., Corras, T., Del Prado, M., Diz, J., & Varela, C. (2022). Psychological variables associated with post-traumatic stress disorder in firefighters: A systematic review. *Trauma, Violence, & Abuse, in press. https://doi.org/10.1177/15248380221082944*
- Seyda, B. A. S., & Tabancali, E. (2020). Correlations between teachers' personality, psychological safety perception and teacher voice. *Eurasian Journal of Educational Research*, 20(85), 185–204.
- Shcherbakova, V. (2020). Social media behavior patterns of adolescents: Choosing a communication strategy. Functional aspects of intercultural communication. *Central Russian Bulletin of Social Sciences*, 15(5), 56–65.
- Sheppes, G. (2020). Transcending the "good & bad" and "here & now" in emotion regulation: Costs and benefits of strategies across regulatory stages. In Advances in experimental social psychology (Vol. 61, pp. 185–236). Academic Press. https://doi.org/10.1016/ bs.aesp.2019.09.003
- Smetana, J. G., & Rote, W. M. (2019). Adolescent-parent relationships: Progress, processes, and prospects. *Annual Review of Developmental Psychology*, 1, 41–68. https://doi.org/10.3389/ fpsyg.2019.02350
- Stapleton, L., & Stefaniak, J. (2019). Cognitive constructivism: Revisiting Jerome Bruner's influence on instructional design practices. *TechTrends*, 63, 4–5. https://doi.org/10.1007/s11528-018-0356-8
- Valanarasu, M. R. (2021). Comparative analysis for personality prediction by digital footprints in social media. *Journal of Information Technology*, 3(02), 77–91. https://doi.org/10.36548/ jitdw.2021.2.002
- Vigo, D., Patten, S., Pajer, K., Krausz, M., Taylor, S., Rush, B., Raviola, G., Saxena, S., Thornicroft, G., & Yatham, L. N. (2020). Mental health of communities during the COVID-19 pandemic. *The Canadian Journal of Psychiatry*, 65(10), 681–687. https:// doi.org/10.1177/0706743720926676
- Volynets, S., Glerean, E., Hietanen, J. K., Hari, R., & Nummenmaa, L. (2020). Bodily maps of emotions are culturally universal. *Emotion*, 20(7), 1127. https://doi.org/10.1037/emo0000624
- Walter, H. J., Bukstein, O. G., Abright, A. R., Keable, H., Ramtekkar, U., Ripperger-Suhler, J., & Rockhill, C. (2020). Clinical practice guideline for the assessment and treatment of children and adolescents with anxiety disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*, 59(10), 1107–1124. https://doi.org/10.1016/j.jaac.2020.05.005
- Yue, Z., Zhang, R., & Xiao, J. (2022). Passive social media use and psychological well-being during the COVID-19 pandemic: The role of social comparison and emotion regulation. *Computers in Human Behavior*, 127, 107050. https://doi.org/10.1016/j. chb.2021.107050
- Zimmer-Gembeck, M. J. (2021). Coping flexibility: Variability, fit and associations with efficacy, emotion regulation, decentering and responses to stress. *Stress and Health*, 37(5), 848–861. https:// doi.org/10.1002/smi.3043

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