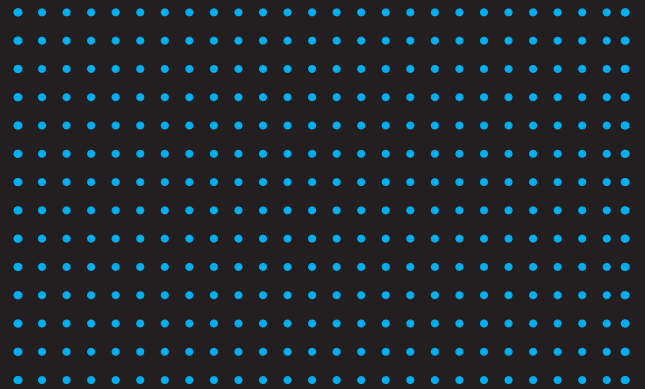




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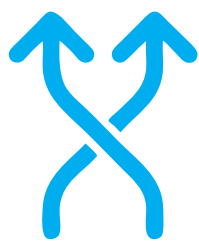
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**ŠKÁLA FLEXIBILNÉHO VYJADROVANIA EMÓCIÍ (FREE):
FAKTOROVÁ ŠTRUKTÚRA A VYBRANÉ PSYCHOMETRICKÉ
VLASTNOSTI**

**FLEXIBLE REGULATION OF EMOTIONAL EXPRESSION SCALE
(FREE): FACTOR STRUCTURE AND SELECTED PSYCHOMETRIC
PROPERTIES**

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ABSTRACT

Suppressing emotional expression is one of the emotion regulation strategies that can negatively impact individuals' mental health. Research findings have been inconclusive, leading to a shift in research focus towards flexibility in emotional expression and the development of the Scale of Flexible Emotion Expression (FREE). International adaptations of the scale identified four factors (enhancement/suppression of positive/negative emotions), which loaded onto two higher-order factors (flexibility in enhancement/suppression), and these loaded onto 1 overarching factor (emotional flexibility). This study aims to verify the factor structure and selected psychometric properties of the Slovak version of FREE. The research sample consisted of 800 respondents in emerging adulthood. Using confirmatory factor analysis, we found that the adapted Slovak version required adjustments (removal of one item). The modified version of FREE showed the best fit with a two-factor model (flexibility in enhancement/suppression) with one higher-order factor (emotional flexibility). Flexibility in suppressing emotions was negatively related to symptoms of depression (PHQ-9) and anxiety (GAD-7), while emotion suppression (ERQ) was positively related to these symptoms. However, these correlations were weak.

Keywords

emotion regulation; flexibility; emotional expression; FREE; psychopathology

ABSTRAKT

Potláčanie expresie emócií je jednou zo stratégií regulácie emócií, ktorá môže mať negatívne dopady na psychické zdravie jednotlivcov. Výskumné zistenia neboli jednoznačné, čo vedie k presunu výskumnej pozornosti na flexibilitu vo vyjadrovaní emócií a k vývinu Škály

flexibilného vyjadrovania emócií (FREE). Zahraničné adaptácie škály identifikovali 4 faktory (zosilnenie/potláčanie pozitívnych/negatívnych emócií), ktoré sýtili 2 nadriadené faktory (flexibilita v zosilňovaní/potláčaní) a tie sýtili 1 nadriadený faktor (emočná flexibilita). Príspevok sa zameriava na overenie faktorovej štruktúry a vybraných psychometrických vlastností slovenskej verzie FREE. Výskumnú vzorku tvorilo 800 respondentov v období vynárajúcej sa dospelosti. Použitím konfirmačnej faktorovej analýzy sme zistili, že adaptovaná slovenská verzia si vyžaduje úpravy (odstránenie jednej položky). Upravená verzia FREE dosiahla najlepšiu zhodu s dvoj-faktorovým modelom (flexibilita v zosilnení/potláčaní) s jedným faktorom vyššieho rádu (emočná flexibilita). Flexibilita v potláčaní emócií negatívne súvisela so symptómami depresie (PHQ-9) a úzkosti (GAD-7), zatiaľ čo potláčanie emócií (ERQ) s nimi súviselo pozitívne.

Kľúčové slová

regulácia emócií; flexibilita; vyjadrovanie emócií; FREE; psychopatológia

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INTRODUCTION

In the field of research on the adaptability of emotion regulation strategies, ambiguities have emerged according to Bonanno and Burton (2013), prompting researchers to examine this phenomenon from the perspective of emotional flexibility.

A key issue with the current understanding of the adaptability of emotion regulation is that it is often associated with manifestations of psychopathology, with some authors perceiving adaptability primarily as the greatest possible reduction of negative emotions (Bridges et al., 2004). Contemporary research focuses on understanding the adaptability of emotion regulation in the context of emotional flexibility and, rather than viewing the strategies used as simply adaptive or maladaptive, it pays greater attention to the situational context (Aldao et al., 2015).

Emotion flexibility is based on three core components fundamental for effective self-regulation: sensitivity to context, repertoire, and the ability to respond appropriately to feedback. The Flexible Regulation of Emotional Expression Scale (FREE, Burton & Bonanno, 2016) can be used to measure the repertoire. This scale assesses an individual's ability to enhance or suppress both positive and negative emotions. In addition to scores for individual subscales, it also provides an overall score for flexibility in emotion regulation.

The ability to flexibly suppress emotions, as well as the flexibility to enhance their expression, is negatively correlated with anxiety and depression (Burton & Bonanno, 2016). According to Gonzales-Escamilla et al. (2022), there is a negative relationship between enhanced flexible emotional expression and symptoms of depression and anxiety. Chen et al. (2018) found that only the ability to flexibly suppress emotions negatively correlates with anxiety; conversely, a Chinese study found that only the ability to flexibly express emotions was associated with a lower occurrence of depressive symptoms (Zhang et al., 2023). In Italy, Quattropani et al. (2022) empirically supported the factor structure of the FREE and also the presumed

relationships between emotional flexibility and perceived mental health, but not physical health. In Slovakia, Ladecký and Pilárik (2024) identified weak relationships between flexible emotional suppression and symptoms of depression and anxiety, while flexible enhancement of emotional expression was associated only with symptoms of anxiety in a sample of adolescent individuals.

The present study aims to verify the factor structure and selected psychometric properties of the FREE measurement tool. The scale has been psychometrically validated in populations within the emerging adulthood life stage, which represents a distinct developmental period typically spanning from the late teens through the twenties. This stage is characterized by identity exploration, increased emotional variability, and the ongoing development of self-regulatory skills, including emotion regulation. As such, emerging adulthood provides a theoretically and empirically meaningful context for examining emotional flexibility and the mechanisms underlying adaptive emotional responses.

METHODS

Participants

The research involved 800 participants in the emerging adulthood period, with a higher proportion of women ($n = 470$; 59%). The age ranged from 18 to 25 years ($M = 20.94$; $SD =$ in women; $M = 21.45$; $SD = 2.01$ in men). The majority of the sample consisted of students ($n = 593$). Regarding regional distribution, the sample was stratified according to the regions of the Slovak Republic, with the largest representation coming from the Trnava region ($n = 156$) and the Prešov region ($n = 137$). The remaining regions had relatively balanced representation, with students from the Banská Bystrica ($n = 105$), Bratislava ($n = 94$), Košice ($n = 92$), Nitra ($n = 85$), and Žilina regions ($n = 69$). The Trenčín region had the lowest representation ($n = 62$).

Procedure

The data were collected in October 2023 using a pencil-and-paper format across all regions of the Slovak Republic. The questionnaire battery included the Generalised Anxiety Disorder Scale (GAD-7; Spitzer et al., 2006; Cronbach's $\alpha = .85$), the PHQ-9 questionnaire (Kroenke et al., 2001; Cronbach's $\alpha = .83$) for assessing depressive symptoms, the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003; Cronbach's α for emotion suppression = .7; Cronbach's α for cognitive reappraisal = .79), which measures two primary emotion regulation strategies – emotion suppression and cognitive reappraisal, and the Flexible Regulation of Emotional Expression Scale (FREE; Burton & Bonanno, 2016; Cronbach's α for flexible expression enhancement = .69; Cronbach's α for flexible suppression enhancement = .62).

RESULTS

Based on the exploratory factor analysis, four factors were identified as expected. However, the factor loadings for the given model were very weak for many items (0.1–0.2). Therefore, in the confirmatory factor analysis, we worked with two factors that combine flexibility in expressing both positive and negative emotions, as well as flexibility in suppressing positive and negative emotions. In the pilot testing, a model with 16 items was tested, which did not achieve satisfactory psychometric properties. Additionally, item FREE-14 did not load sufficiently onto the second factor (0.19), leading us to exclude it from the model.

The 15-item version of the scale demonstrated appropriate psychometric properties in terms of fit indices ($\chi^2 = 272.835$, $df = 89$, $p < 0.001$; TLI = 0.9; CFI = 0.91; RMSEA = 0.051; SRMR = 0.058). Table 1 presents the factor loadings for the two-factor model. All factor loadings shown in the table are statistically significant at the $p < 0.001$ significance level.

Table 1. Factor loadings for the 15- item 2 factor model

Factor	Indicator	Estimate	Std. Error	z-value	p-value
Factor 1	FREE_1	0.781	0.045	17.339	< .001
	FREE_2	0.891	0.047	18.848	< .001
	FREE_3	0.842	0.050	16.952	< .001
	FREE_4	0.592	0.041	14.305	< .001
	FREE_5	0.525	0.041	12.833	< .001
	FREE_6	0.440	0.039	11.209	< .001
	FREE_7	0.463	0.043	10.729	< .001
	FREE_8	0.598	0.045	13.328	< .001
Factor 2	FREE_9	0.519	0.046	11.364	< .001
	FREE_10	0.972	0.058	16.794	< .001
	FREE_11	0.837	0.054	15.628	< .001
	FREE_12	0.983	0.057	17.290	< .001
	FREE_13	0.418	0.046	9.087	< .001
	FREE_15	0.422	0.045	9.367	< .001
	FREE_16	0.540	0.047	11.421	< .001

Note. FREE – questionnaire indicators; p-value – level of statistical significance.

Table 2 displays the modification indices for cross-loadings and residual covariances within the two-factor model of the FREE questionnaire. The highest residual covariance was observed between items FREE_5 and FREE_7, indicating that these items may share structural or content characteristics that the model does not adequately explain. Other significant covariances appeared between items FREE_15 and FREE_16 and between FREE_5 and FREE_6, suggesting possible shared variability among these items.

The highest modification index for cross-loadings was recorded for Factor 1 on item FREE_12 (Mod. Ind. = 10.188, EPC = -0.194).

Table 2. Residual Covariances and Cross-Loadings of the Model

Type	Residual covariances / Cross loadings	Mod. Ind.	EPC
Residual covariances	FREE_5 ↔ FREE_7	30.552	0.476
	FREE_15 ↔ FREE_16	26.860	0.473
	FREE_5 ↔ FREE_6	26.161	0.397
	FREE_13 ↔ FREE_15	19.088	0.394
Cross-loadings	Faktor 1 → FREE_12	10.188	-0.194
	Faktor 1 → FREE_16	9.467	0.154
	Faktor 1 → FREE_15	8.834	0.145
	Faktor 1 → FREE_13	6.944	-0.130

Note. FREE – questionnaire indicators; EPC – expected parameter change.

Table 3 presents the descriptive indicators for the individual items of the questionnaires. The assumptions of data normality are met, with the range of skewness and kurtosis for all items falling between -1.5 and +1.5 (Tabachnick & Fidell, 2001).

Table 3. Descriptives

Item	Mode	Median	Mean	Skewness	Curtosis
ERQKP	30.040	28.500	28.019	-0.361	0.096
ERQPP	15.546	15.000	14.922	-0.035	-0.439
Enhancement	28.967	31.000	31.099	-0.457	1.073
Suppression	25.664	25.000	25.557	0.091	-0.325
Flexibility	51.304	50.000	51.124	0.089	-0.328

Note. ERQKP – ERQ subscale Cognitive reappraisal, ERQPP – ERQ subscale Emotion suppression.

Table 4 presents the results of the Pearson correlation analysis, showing that flexibility in emotion suppression was negatively correlated with depressive symptoms and anxiety symptoms. In addition, a statistically significant positive relationship was found with cognitive reappraisal and flexible emotion suppression. Flexible enhancement of emotional expression positively correlated with cognitive reappraisal and negatively with ERQ emotion suppression. The overall score of emotional flexibility was negatively correlated with depression, anxiety, and positively with cognitive reappraisal and ERQ emotion suppression.

Table 4. Correlates of FREE Dimensions and Mental Health Indicators

Item	PHQ-9	GAD-7	ERQKP	ERQPP	Suppression	Enhance
GAD-7	.760***					
ERQKP	-.190***	-.184***				
ERQPP	.173***	.160***	-.003			
Suppression	-.092*	-.099**	.078*	.098**		
Enhance	-.008	.036	.153***	-.157***	.174***	
Flexibility	-.092*	-.099**	.078*	.098**	.193***	.174***

Note. ERQKP – ERQ subscale Cognitive reappraisal, ERQPP – ERQ subscale Emotion suppression.

DISCUSSION

The results of the study were consistent with previous research (Burton & Bonanno, 2016; Gonzales-Escamilla et al., 2022; Chen et al., 2018), with the best fit for the Slovak version of the Flexible Regulation of Emotional Expression Scale (FREE) being achieved with a two-factor model (flexibility in enhancement and flexibility in suppression of emotions). This model supports the original theoretical assumptions about the complex nature of emotional flexibility, which allows individuals to adaptively use various emotion regulation strategies according to situational context.

The results of the confirmatory factor analysis suggest that the Slovak version of the scale required minor adjustments, including the removal of one item to achieve a better fit with the data. This finding is consistent with previous studies, which also demonstrated the need for slight modifications when adapting FREE into different language versions (Burton & Bonanno, 2016). The factors related to flexibility in the suppression and enhancement of emotions showed significant factor loadings, confirming that these dimensions accurately reflect the structure of emotional flexibility.

The validity of the research instrument was verified through the relationships between flexibility and mental health indicators. The results showed that flexibility in emotion suppression had a weak negative relationship with symptoms of depression and anxiety, suggesting that the ability to adaptively regulate emotions through suppression may have a protective effect against psychopathological manifestations. This finding supports the theory of emotional flexibility, which emphasises the importance of contextual factors in assessing the adaptability of emotional strategies (Bonanno & Burton, 2013).

The present research has certain limitations that should be acknowledged. While the sample predominantly consisted of students in the emerging adulthood period, this can also be seen as a strength, as this age group is particularly relevant for the psychometric validation of the scale used. Nevertheless, future research could extend the findings by testing measurement invariance across different age groups and also by gender, to further explore the generalisability and robustness of the instrument across diverse populations.

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