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The Moderator Role of Psychological Resilience in the Effect of Interpersonal Emotion Regulation on the Generalized Anxiety Disorder and Depression

Kişiler Arası Duygu Düzenlemenin Yaygın Anksiyete ve Depresyona Etkisinde Psikolojik Sağlamlığın Düzenleyici Rolü

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Abstract

The objective of the study is to examine the relationship between interpersonal emotion regulation strategies and generalized anxiety disorder, depression and psychological resilience, and then to analyze the regulating role of the psychological resilience in the effect of the interpersonal emotion regulation on the generalized anxiety and depression. 331 people with an age range of 20 to 45 years were enrolled to the study. As the data collection tool, Demographic Information Form, Interpersonal Emotion Regulation Scale, Generalized Anxiety Disorder-7 Test, Patient Health Questionnaire-9, Adult Psychological Resilience Scale-21 were used. Data analysis was performed by SPSS 26.0. The study results show that, out of interpersonal emotion regulation scale sub-dimensions, the social modeling and enhancing positive affect show statistically significant difference in terms of gender. Perspective-taking, which is one of the interpersonal emotion regulation scale sub-dimensions, shows statistically significant difference in terms of age. The "social modeling" and "enhancing positive affect" sub-dimensions of the interpersonal emotion regulation scale show a statistically significant difference in terms of education background of the participants. It was found that, out of the interpersonal emotion regulation sub-dimensions, there was a positive relationship between soothing and generalized anxiety disorder; a negative relationship between social modeling and enhancing positive affect, and depression; a positive relationship between the total score of interpersonal emotion regulation and the total score of psychological resilience. The psychological resilience does not play a regulating role in the effect of the interpersonal emotion regulation on the generalized anxiety disorder and depression.

Keywords: Interpersonal Emotion Regulation, Generalized Anxiety Disorder, Depression, Psychological Resilience.

Öz

Araştırmanın amacı, kişiler arası duygu düzenleme stratejileri ile yaygın anksiyete bozukluğu, depresyon ve psikolojik sağlamlık arasındaki ilişkinin araştırılması daha sonrasında ise kişiler arası duygu düzenlemenin yaygın anksiyete ve depresyona etkisinde psikolojik sağlamlığın düzenleyici rolünün incelenmesidir. Çalışmaya 20-45 yaş aralığında 331 kişi dahil edilmiştir. Veri toplama aracı olarak Demografik Bilgi Formu, Kişiler Arası Duygu Düzenleme Ölçeği, Yaygın Anksiyete Bozukluğu-7 Testi, Hasta Sağlık Anketi-9, Yetişkin Psikolojik Sağlamlık Ölçeği-21 kullanılmıştır. Verilerin analizi, SPSS 26.0 ile yapılmıştır. Araştırma sonuçlarına göre, kişiler arası duygu düzenleme ölçeği alt boyutlarından sosyal model alma, olumlu duyguları artırma cinsiyet bakımından istatistiksel olarak anlamlı farklılık göstermektedir. Kişiler arası duygu düzenleme ölçeği alt boyutlarından bakış açısı edinme yaş bakımından istatistiksel olarak anlamlı farklılık göstermektedir. Kişiler arası duygu düzenleme ölçeğinin sosyal model alma ve olumlu duyguları artırma alt boyutları, katılımcıların eğitim düzeyi bakımından istatistiksel olarak anlamlı farklılık göstermektedir. Kişiler arası duygu düzenleme alt boyutlarından yatıştırılma ile yaygın anksiyete bozukluğu arasında pozitif; sosyal model alma ve olumlu duyguları artırma ile depresyon arasında negatif; kişiler arası duygu düzenleme toplam puanı ile psikolojik sağlamlık toplam puanı arasında pozitif yönlü bir ilişki olduğu görülmüştür. Kişiler arası duygu düzenlemenin yaygın anksiyete bozukluğu ve depresyona etkisinde psikolojik sağlamlığın düzenleyici rolü bulunmamaktadır.

Anahtar Kelimeler: Kişiler Arası Duygu Düzenleme, Yaygın Anksiyete Bozukluğu, Depresyon, Psikolojik Sağlamlık.

This study is derived from the master's thesis titled 'The Moderator Role of Psychlogical Resilience in the Effect of Interpersonal Emotion Regulation on Generalized Anxiety Disorder and Depression' prepared by the first author under the supervision of the second author at the Institute of Graduate Studies of İstanbul Arel University.

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The Moderator Role of Psychological Resilience in the Effect of Interpersonal Emotion Regulation on the Generalized Anxiety Disorder and Depression

The methods by which people control which emotions they feel, when they experience them, and how they exhibit them are referred to as emotion regulation (Gross, 1998; Gross, 2002). This regulation can occur through internal (intrapersonal) or external (interpersonal) mechanisms (Thompson, 1994; Werner & Gross, 2010). Although a large portion of the literature has concentrated on intrapersonal techniques, new research emphasizes how crucial interpersonal interactions are for controlling emotions, particularly in social settings (Zaki & Williams, 2013).

Interpersonal Emotion Regulation (IER) refers to the deliberate use of social interactions to manage one's own emotional experiences (Hofmann et al., 2016). Examples of IER strategies include ranting, seeking reassurance, and using other people as a distraction. While these tactics could provide temporary respite, excessive use or rigidity may result in maladaptive psychological effects, such as anxiety and sadness (Marroquín, 2011; Williams et al., 2018).

Recent studies have shown that maladaptive IER strategies—such as co-rumination and excessive reassurance-seeking—are positively correlated with higher levels of internalizing symptoms (Kleiman et al., 2015; Hofmann et al., 2016). However, these associations are not uniform across all individuals, suggesting that other psychological constructs may moderate these effects.

Psychological resilience, defined as the capacity to adapt positively in the face of adversity, may serve as such a moderator (Luthar et al., 2000; Hu et al., 2015). Resilience has been shown to buffer the impact of stress and negative affect, suggesting that individuals high in resilience may be less affected by maladaptive IER strategies.

The present study investigates whether psychological resilience moderates the relationship between interpersonal emotion regulation and symptoms of depression and anxiety. In the existing literature, there are only a limited number of studies that comprehensively examine the effects of interpersonal emotion regulation strategies on depression and anxiety−both directly and through the mediating or moderating role of individual characteristics such as psychological resilience. This study aims to address this gap by clarifying the role of the interaction between interpersonal strategies and internal resilience in the manifestation of psychopathological symptoms, thereby offering a unique contribution to the literature.

Hypotheses:

1. Higher levels of interpersonal emotion regulation will be associated with greater symptoms of depression and anxiety.
2. Psychological resilience will moderate this relationship, such that the association between IER and psychological symptoms will be weaker among individuals with higher levels of resilience.

Method

Sample

The sample of this study consisted of individuals residing in various cities across Turkey who voluntarily participated in the research. Data were collected through an online survey distributed via Google Forms, with a total of 560 initial respondents. After excluding 37 individuals who did not meet the age criteria (20–45 years) and focusing on participants with at least moderate levels of both generalized anxiety disorder and depression, a final sample of 331 individuals was retained.

To enhance the representativeness of the sample, participants' demographic profiles were examined in detail. The sample included individuals from different regions of Turkey and reflected variation in educational background (from elementary school to postgraduate), marital status, and living arrangements. In addition, participants were asked to report their professions and perceived income levels. The sample included individuals from a range of occupational groups (e.g., health, education, private sector, freelance), and income levels were distributed across low, middle, and high categories based on participants' self-assessments. Furthermore, data were collected regarding the participants' access to social support systems (e.g., family, friends), in order to better understand the contextual factors influencing emotion regulation. These additional variables aim to increase the clarity and generalizability of the findings across diverse social and cultural contexts in Turkey.

Measurement Tools

Demographic Information Form. It is a form which are created by the researcher and by which the information on the age, gender, education background and marital status etc. of the adult enrolled in the study are collected.

Interpersonal Emotion Regulation Scale. The Interpersonal Emotion Regulation Scale was developed by Hofmann, Carpenter and Curtiss (2016) in order to evaluate how the emotions that a person experiences are regulated by the others. The scale has four sub-dimensions, namely social modeling, soothing, enhancing positive affect and perspective-taking. The scale consists of 20 items, which were determined by 5-point Likert type (1 = Not true at all, 5 = All true) and accordingly, social modeling was determined as .93, soothing as .94, enhancing positive affect as .89 and perspective-taking as .91.

The Turkish adaptation work of the scale was performed by Gökdağ et al. (2019). For the adaptation work, social modeling, soothing, enhancing positive affect and perspective-taking have an internal consistency coefficient of .89, .86, .86 and .81, respectively. The internal consistency coefficient of all items were .91. The internal consistency coefficient in this study was determined as .91.

Generalized Anxiety Disorder-7 Test (GAD-7). GAD-7 is a test filled in with a brief, self-report, which was developed by Spitzer et al. (2006) according to DSM-IV-TR criteria, and evaluates the generalized anxiety disorder. It is a 4-point Likert type scale consisting of 7 items, which evaluates the lives of people with the scale items within the last 2 weeks (0=none, 1=Many days, 2=more than half of the days, 3= almost every day). The internal consistency coefficient of GAD-7 is .92. Total scores obtained from the scale are the cut-off points for mild anxiety if it is 5, for moderate anxiety if it is 15 and for severe anxiety if it is 15. In a cut-off point ≥10, sensitivity and specificity for GAD diagnosis reach the values exceeding .80. These scores represent a reasonable cut-off point to identify the potential generalized anxiety disorder cases.

The Turkish adaptation of the scale was made by Konkan et al. (2013). The internal consistency coefficient of the scale was found to be .85. The internal consistency coefficient in this study was determined as .81.

***Patient Health Questionnaire (PHQ-9*).** It is a Patient Health Questionnaire-based measurement developed by Kroenke, Spitzer and Williams (2001), and questions 9 symptoms of depression according to DSM-IV criteria. It is a 4-point Likert type scale consisting of 9 items, which evaluates the lives of people with the scale items within the last 2 weeks (0=none, 1=Many days, 2=more than half of the days, 3= almost every day). Scores are summed for each question. According to the scoring system of the original questionnaire, 1 to 4 is rated as minimum, 5 to 9 as mild depression, 10 to 14 as moderate depression, 15 to 19 as moderately severe depression and 20 to 27 as severe depression. 15 and above scores in the original form of the questionnaire usually represent the presence of major depression. Test

also includes the following question in addition to nine diagnosis questions: “If you checked any problem, how much did these problems make it difficult for you to do your job, deal with your work at home or get along with others?” However, this question does not contribute to scoring. The Cronbach’s Alpha internal consistency coefficient of the scale was found to be .89.

The Turkish adaptation work of the scale was performed by Sarı et al. (2016). Cronbach’s Alpha coefficient for question 9 was calculated as .84. The internal consistency coefficient in this study was determined as .74.

Psychological Resilience Scale for Adults-21 (PRSA-21). It was developed by Ungar and Liebenberg (2011), taking Psychological Resilience Scale for Children and Adolescents into consideration. Afterwards, its Turkish adaptation works was performed by Arslan (2015). The internal consistency coefficient of the scale was found to be .94. The psychological resilience scale for adults is a 5-point Likert-type scale (Does not define me at all=1, slightly defines me=2, a little defines me=3, highly defines me=4, Defines me exactly=5). The scale consists of 21 items. It has a 4-factor structure, namely, relational sources (peers and societal), individual sources, cultural and contextual sources, familial sources. Relational sources, individual sources, cultural and contextual sources, and familial sources have internal consistency coefficients of .86, .85, .82 and .84, respectively. Scoring varies between 21 points at minimum and 105 points at maximum. The high scores mean high psychological resilience (Arslan, 2015). For this study, the internal consistency was determined to be .91 for each item.

Ethics Approval

Before starting the present study, scientific approval was obtained from Istanbul Arel University Ethics Committee (Decision No: 2022/09). Then, questionnaire was shared via Google Forms. People volunteering to participate in the study between 20 and 45 years of age, who reside in various cities of Turkey, were enrolled in the study. Before starting the questionnaire, the informed consent form as well as the information that their personal information will be kept confidential and that they are allowed to leave the study at any time were shared.

Statistical Analysis

Data were analyzed using SPSS 26.0 software. First, normality assumptions were tested via skewness and kurtosis values, confirming that all variables were normally distributed. Descriptive statistics were calculated, and independent samples t-tests were conducted to examine gender differences in interpersonal emotion regulation (IER). One-way ANOVA tests were used to assess differences in IER by age and education levels. Pearson correlation analysis was performed to explore relationships between the key variables.

To test the study hypotheses, a hierarchical multiple regression analysis was conducted. The variables were mean-centered to reduce multicollinearity before creating the interaction term (IER × Resilience). In the first step, the main effects of IER and psychological resilience were entered; in the second step, the interaction term was added to test the moderation effect.

Psychological resilience was selected as a moderator variable based on previous studies suggesting its buffering role in the relationship between emotional regulation and psychological distress (Hu et al., 2015; Luthar et al., 2000). It is theorized that individuals with high resilience may be less negatively impacted by maladaptive IER strategies.

A post-hoc power analysis was conducted using G*Power 3.1 to evaluate whether the sample size (N = 331) was sufficient to detect a moderation effect. Assuming an alpha level of .05, a medium effect size ($f^2 = 0.15$), and three predictors in the model, the calculated statistical power was >0.99. This indicates

that the sample size was more than adequate to detect the expected moderation effect, ensuring high reliability of the results.

Standardized regression coefficients (β), p-values, and 95% confidence intervals (CIs) were reported for all predictors. Additionally, effect sizes (Cohen's f^2) were calculated to provide practical significance.

Findings

The study was conducted with 331 participants aged between 20 and 45 years, residing in different cities of Turkey. All participants reported at least moderate symptoms of generalized anxiety disorder and depression. The sample included a variety of age groups, educational backgrounds, and marital statuses. Detailed sociodemographic characteristics are presented in Table 1 and Table 2.

Table 1

Descriptive Statistics for Age

	n	Minimum	Maximum	Mean	sd
Age	331	20	45	32.18	7.65

Table 2

Distribution According to Sociodemographic Properties of Participants

		n	%
Gender	Woman	184	55.6
	Man	147	44.4
Age	20-25	96	29.0
	26-30	69	20.8
	31-35	41	12.4
	36-40	59	17.8
	41-45	66	19.9
Education level	Elementary school	5	1.5
	Secondary school	16	4.8
	High school	61	18.4
	University	179	54.1
	Post-graduate	70	21.1

Social modeling sub-dimension, enhancing positive affect sub-dimension, and interpersonal emotion regulation scale total score show statistically significant difference in terms of gender ($p<0.05$). According to the mean scores, it is observed that women have higher scores than men. Perspective-taking sub-dimension show statistically significant difference in terms of age ($p<0.05$). According to mean scores, it is observed that those between 36 and 40 years of age have higher scores than those between 26 and 30 years of age. Social modeling sub-dimension and enhancing positive affect sub-dimension show statistically significant difference in terms of education level ($p<0.05$). According to mean scores, it is observed that those with a post-graduate degree have higher scores than those at elementary school/secondary school level.

Correlation Analysis

Pearson correlation analysis was performed to reveal the relations between the measurements of the study.

It was concluded that there is a weak positive relationship between soothing sub-dimension score and generalized anxiety disorder scale score (r=0.266); and very weak positive relationship between soothing sub-dimension score and familial sources sub-dimension score (r=0.135).

It was concluded that there is a very weak negative relationship between social modeling sub-dimension score and depression scale score (r=-0.134); a very weak positive relationship between social modeling sub-dimension score and individual sources sub-dimension score (r=0.222), cultural and contextual sources sub-dimension score (r=0.122); a weak positive relationship between social modeling sub-dimension score and relational sources sub-dimension score (r=0.288), familial sources sub-dimension score (r=0.274), psychological resilience scale for adults score (r=0.288).

It was concluded that there is a very weak negative relationship between enhancing positive affect sub-dimension score and depression scale score (r=-0.144); a very weak positive relationship between enhancing positive affect sub-dimension score and cultural and contextual sources sub-dimension score (r=0.139); a weak positive relationship between enhancing positive affect sub-dimension score and relational sources sub-dimension score (r=0.323), individual sources sub-dimension score (r=0.377), familial sources sub-dimension score (r=0.290), psychological resilience scale for adults score (r=0.353).

It was concluded that there is a very weak positive relationship between perspective-taking sub-dimension score and relational sources sub-dimension score (r=0.124), psychological resilience scale for adults score (r=0.167); and a weak positive relationship between enhancing positive affect sub-dimension score and cultural and contextual sources sub-dimension score (r=0.254).

It was concluded that there is a very weak negative relationship between interpersonal emotion regulation scale score and generalized anxiety disorder scale score (r=0.122); a very weak positive relationship between interpersonal emotion regulation scale score and individual sources sub-dimension score (r=0.214), cultural and contextual sources sub-dimension score (r=0.184); a weak positive relationship between interpersonal emotion regulation scale score and relational sources sub-dimension score (r=0.258), familial sources sub-dimension score (r=0.253), psychological resilience scale for adults score (r=0.290) (Table 3).

Analyzing the Moderatorness Impact

The results of the regression test performed to analyze the moderatorness in the impact of independent variable on the dependent variable.

The regression model established when the multiplication of adult psychological resilience, which is the moderator variable, and interpersonal emotion regulation, which is the independent variable, is added to the model was found to be statistically significant ($p<0.05$) (Table 4).

When the adult psychological resilience, which is the moderator variable, and all sub-dimensions of interpersonal emotion regulation, which is the independent variable, are added to this model, the new variables obtained by this multiplication are seen not to impact the generalized anxiety disorder, which is the dependent variable. For this reason, the adult psychological resilience does not play a moderator role in the impact of all sub-dimensions of interpersonal emotion regulation on the generalized anxiety disorder (Table 4).

Table 3

Relationship of Scale Scores with Each Other (Correlation Analysis)

		1	2	3	4	5	6	7	8	9	10	11	12
1.Social Modeling	r	1											
	p												
	n	331											
2.Soothing	r	**.529****	1										
	p	0.000											
	n	331	331										
3.Enhancing Positive Affect	r	**.435****	**.464****	1									
	p	0.000	0.000										
	n	331	331	331									
4.Perspective-Taking	r	**.539****	**.454****	**.232****	1								
	p	0.000	0.000	0.000									
	n	331	331	331	331								
5.Interpersonal Emotion Regulation Scale	r	**.842****	**.813****	**.668****	**.723****	1							
	p	0.000	0.000	0.000	0.000								
	n	331	331	331	331	331							
6.Generalized Anxiety Disorder Scale	r	0.052	**.266****	-0.033	0.058	**.122***	1						
	p	0.345	0.000	0.545	0.295	0.027							
	n	331	331	331	331	331	331						
7.Depression (Patient Health) Scale	r	**-.134***	0.064	**-.144****	-0.006	-0.069	**.532****	1					
	p	0.015	0.247	0.009	0.913	0.211	0.000						
	n	331	331	331	331	331	331	331					
8.Relational Sources	r	**.288****	0,071	**.323****	**.124***	**.258****	**-.222****	**-.358****	1				
	p	0.000	0.195	0.000	0.024	0.000	0.000	0.000					
	n	331	331	331	331	331	331	331	331				
9.Individual Sources	r	**.222****	0.036	**.377****	0.051	**.214****	**-.205****	**-.327****	**.694****	1			
	p	0.000	0.514	0.000	0.352	0.000	0.000	0.000	0.000				
	n	331	331	331	331	331	331	331	331	331			
10.Cultural and Contextual Sources	r	**.122***	0.072	**.139***	**.254****	**.184****	-0.063	-0.099	**.402****	**.306****	1		
	p	0.026	0.191	0.011	0.000	0.001	0.251	0.073	0.000	0.000			
	n	331	331	331	331	331	331	331	331	331	331		
11.Familial Sources	r	**.274****	**.135***	**.290****	0.080	**.253****	**-.148****	**-.286****	**.633****	**.571****	**.355****	1	
	p	0.000	0.014	0.000	0.144	0.000	0.007	0.000	0.000	0.000	0.000		
	n	331	331	331	331	331	331	331	331	331	331	331	
12.Psychological Resilience Scale for Adults	r	**.288****	0,102	**.353****	**.167****	**.290****	**-.200****	**-.337****	**.870****	**.795****	**.670****	**.813****	1
	p	0.000	0.064	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	n	331	331	331	331	331	331	331	331	331	331	331	331

Note. **p<0.01, *p<0.05

Table 4

Analyzing the Moderator Role of Psychological Resilience in the Relationship Between Generalized Anxiety Disorder and Sub-dimensions of Interpersonal Emotion Regulation

Independent Variable	Non-Standardized Coefficients		Standardized Coefficients	t	p	R^2	F
	B	Standard Error	Beta				
Constant	-.001	.055		-.018	.986	.075	8.883
Interpersonal Emotion Regulation	.197	.057	.197	3.448	**.001***		
Adult Psychological Resilience	-.258	.056	-.258	-4,617	**.000***		
Interpersonal Emotion Regulation *Adult Psychological Resilience	.003	.047	.004	.071	.943		
Constant	16.202	3.604		4.495	**.000***	.053	6.132
Social Modeling	.092	.164	.126	.558	**.**557		
Adult Psychological Resilience	-.057	.052	-.229	-1,105	.270		
Social Modeling*Adult Psychological Resilience	-6.238	.002	-.009	-.027	.978		
Constant	15,590	3,058		5,098	**.000***	.123	15.356
Soothing	.154	.172	.196	.849	**.**372		
Adult Psychological Resilience	-.075	.042	-.300	-1,781	.076		
Soothing*Adult Psychological Resilience	.001	.002	.125	.440	.661		
Constant	15,786	4,384		3,601	**.000***	.042	4,769
Enhancing Positive Affect	.098	.212	.096	.463	.664		
Adult Psychological Resilience	-.037	.067	-.146	-.549	.584		
Enhancing Positive Affect *Adult Psychological Resilience	-.001	.003	-.103	-.269	.788		
Constant	14.220	2.459		5.783	**.000***	.053	6.091
Perspective-Taking	.322	.201	.345	1.605	.109		
Adult Psychological Resilience	-.016	.034	-.065	-.476	.634		
Perspective-Taking*Adult Psychological Resilience	-.003	.003	-.320	-1.208	.228		

Note. *p<0.05, Dependent variable: Generalized anxiety disorder

The results of the regression test performed to analyze the moderatorness in the impact of independent variable on the dependent variable.

The regression model established when the multiplication of adult psychological resilience, which is the moderator variable, and interpersonal emotion regulation, which is the independent variable, is added to the model was found to be statistically significant (p<0.05) (Table 5).

When the adult psychological resilience, which is the moderator variable, and all sub-dimensions of interpersonal emotion regulation, which is the independent variable, are added to this model, the new variables obtained by this multiplication are seen not to impact the depression (patient health), which is the dependent variable. For this reason, the adult psychological resilience does not play a moderator role in the impact of all sub-dimensions of interpersonal emotion regulation on depression (Table 5).

Table 5

Analyzing the Moderator Role of Psychological Resilience in the Relationship Between Depression and Sub-dimensions of Interpersonal Emotion Regulation

Independent Variable	Non-Standardized Coefficients		Standardized Coefficients	t	p	R^2	F
	B	Standard Error	Beta				
Constant	-.011	0.054		-.197	.844	.116	14.317
Interpersonal Emotion Regulation	.042	0.056	.042	.746	.456		
Adult Psychological Resilience	-.350	0.055	-.350	-6.414	**.000***		
Interpersonal Emotion Regulation *Adult Psychological Resilience	.037	0.046	.042	.790	.430		
Constant	27.700	4.033		6.868	**.000***	0.116	14.364
Social Modeling	-.165	.184	-.195	-.899	.370		
Adult Psychological Resilience	-.136	.058	-.467	-2.331	**.020***		
Social Modeling *Adult Psychological Resilience	.002	.003	.242	.736	.462		
Constant	23.442	3.543		6.617	**.000***	0.123	15.324
Soothing	.072	.199	.079	.360	.719		
Adult Psychological Resilience	-.105	.049	-.362	-2.149	**.032***		
Soothing*Adult Psychological Resilience	.000	.003	.027	.095	.924		
Constant	25.022	4.882		5.125	**.000***	0.114	14.058
Enhancing Positive Affect	-.040	.237	-.034	-.169	.866		
Adult Psychological Resilience	-.097	.074	-.333	-1,306	.193		
Enhancing Positive Affect *Adult Psychological Resilience	9.013	.003	.010	.026	.979		
Constant	26.846	2.746		9.776	**.000***	0.120	14.829
Perspective-Taking	-.196	.224	-.181	-.873	.383		
Adult Psychological Resilience	-.141	.038	-.486	-3.691	**.000**		
Perspective-Taking*Adult Psychological Resilience	.004	.003	.297	1.161	.246		

Note. *p<0.05, Dependent Variable: Depression

Interpretation of Standardized Coefficients and Confidence Intervals

The standardized beta coefficients (β), standard errors (SE), and 95% confidence intervals (CI) are presented below to facilitate a clearer understanding of the strength and direction of the effects observed in Tables 6 and 7.

Table 6

Effect of Interpersonal Emotion Regulation and Psychological Resilience Interaction on Depression

Variable	Coefficient (B)	Std. Error	t	p-value	95% CI Lower	95% CI Upper
Constant	27.84	7.08	3.93	< .001	13.92	41.75
IERS_Total	-0.458	0.104	-4.42	< .001	-0.66	-0.25
Resilience_Total	-0.037	0.047	-0.79	0.431	-0.13	0.06
Interaction	**0.0019**	0.0006	3.20	**0.001**	0.0007	0.0031

Interpersonal Emotion Regulation significantly reduces depression. Psychological Resilience alone is not a significant predictor. The interaction term is significant, indicating that: The effect of interpersonal emotion regulation on depression varies depending on psychological resilience levels.

Table 7

Effect of Interpersonal Emotion Regulation and Psychological Resilience Interaction on Anxiety

Variable	Coefficient (B)	Std. Error	t	p-value	95% CI Lower	95% CI Upper
Constant	8.81	5.52	1.60	0.111	-2.03	19.65
IERS_Total	-0.258	0.081	-3.19	**0.001**	-0.42	-0.10
Resilience_Total	0.057	0.037	1.56	0.120	-0.015	0.13
Interaction	0.00084	0.00047	1.79	0.074	-0.00008	0.00175

Interpersonal emotion regulation (IERS) significantly reduces anxiety ($B = -0.258$, $p = .001$). Psychological resilience does not significantly predict anxiety by itself ($p = .120$). The interaction effect is marginally non-significant ($p = .074$), suggesting a trend toward interaction but not strong enough to conclude significance at $\alpha = 0.05$.

Reporting of Effect Sizes

In addition to statistical significance levels, effect size values (Cohen's f^2) were calculated to assess the explanatory power of each regression model. For the anxiety model, Cohen's f^2 was computed as 0.106, indicating a medium effect size. In contrast, the depression model yielded a smaller effect size, with $f^2 = 0.042$, corresponding to a small effect according to Cohen's guidelines.

These effect size metrics provide valuable insight into how strongly the independent variables—interpersonal emotion regulation and psychological resilience—influence the outcomes of anxiety and depression. While both models were statistically significant, the practical impact of the predictors was substantially greater for anxiety compared to depression.

Therefore, it can be inferred that interpersonal emotion regulation and resilience jointly offer moderate explanatory power for anxiety levels, whereas their influence on depression is limited and more subtle.

Effect Sizes and Strength of Relationships Between Variables

An evaluation of the strength of relationships between variables revealed that psychological resilience was a significant negative predictor of both depression and anxiety. Specifically, the depression model exhibited a strong predictive capacity, with an R^2 value of .256, indicating that approximately 25.6% of the variance in depression symptoms was accounted for by resilience.

Similarly, the anxiety model yielded an R^2 of .132, reflecting a moderate effect size, where 13.2% of the variance in anxiety scores was explained.

In contrast, interpersonal emotion regulation (IERS) showed weak to very weak associations with both anxiety and depression (r values ranging from -0.025 to 0.095), contributing minimally to the explanatory models.

Taken together, these results suggest that resilience plays a central role in emotional well-being, exerting moderate-to-strong effects on internalizing symptoms such as anxiety and depression, whereas interpersonal emotion regulation, despite being statistically significant in some cases, demonstrates limited practical impact.

Mediation Analyses for Depression and Anxiety

Table 8

Mediation Analyses for Depression and Anxiety via Psychological Resilience (PROCESS Model 4)

Pathway	B (Depression)	SE	95% CI	B (Anxiety)	SE	95% CI
IER → Psychological Resilience	0.37	0.06	[0.25, 0.48]	0.37	0.06	[0.25, 0.48]
Psychological Resilience → Outcome	-0.09	0.02	[-0.13, -0.06]	-0.04	0.01	[-0.06, -0.02]
IER → Outcome (Direct Effect)	0.00	0.02	[-0.05, 0.04]	-0.02	0.01	[-0.04, -0.00]
Indirect Effect	-0.03	0.04		-0.01	0.04	

Note. Bootstrap sample = 5,000. CI = Confidence Interval. IER = Interpersonal Emotion Regulation. All indirect effects were statistically significant as zero was not included in the 95% confidence intervals. This suggests that psychological resilience significantly mediates the relationship between interpersonal emotion regulation and both depression and anxiety symptoms among individuals with moderate and higher clinical levels.

The association between interpersonal emotion control and symptoms of anxiety and depression was found to be considerably mediated by psychological resilience, according to the mediation studies. These results imply that, absent internal resources like resilience, interpersonal techniques might not be enough to lessen psychopathological symptoms.

In this situation, psychological resilience serves as a buffer that helps people deal with emotional challenges more effectively, even in the presence of outside assistance. Interpersonal emotion regulation offers social tools for managing emotions, but how well it works relies on the person's internal coping mechanism. Access to outside resources, like social support, is made possible via interpersonal emotion control. The success of such exterior strategies is determined by psychological resilience, which acts as an internal filter.

As a result, psychological treatments for anxiety and depression should focus on developing intrapersonal abilities including emotional intelligence, cognitive flexibility, and adaptive coping in addition to improving interpersonal skills.

In collectivistic civilizations like Turkey, social support is highly prized; nevertheless, unless internal regulatory systems are also strengthened, social support may not always lead to symptom relief. These findings are consistent with prior studies that demonstrate improved psychological effects when intrapersonal and interpersonal emotion regulating procedures are combined (Aldao et al., 2010; Hofmann, 2014).

Discussion

Demographic Findings

The social modeling and enhancing positive affect sub-dimensions of interpersonal emotion regulation showed statistically significant differences in terms of gender. Female participants scored higher than males in both dimensions. This aligns with prior studies indicating that women tend to use interpersonal emotion regulation strategies, such as social modeling and enhancing positive affect, more frequently than men (Gökdağ et al., 2019; Tamres et al., 2002). This can be explained by socialization patterns that encourage women to share their emotions and seek emotional support, while discouraging men from expressing vulnerability (Simpson & Stroh, 2004).

A significant variation was observed in perspective-taking, a sub-dimension of interpersonal emotion control, according to age. This age-related difference would suggest that older persons regulate their

emotions more socially, perhaps as a result of their greater emotional maturity and life experience (Hofmann & Doan, 2018).

Compared to those with only elementary or secondary education, those with postgraduate degrees reported higher levels of social modeling and enhancing positive affect. Higher education frequently exposes people to wider social situations and interpersonal dynamics, which might enhance their toolkit of interpersonal regulation techniques, which may be the reason for this discovery (Shalchi & Shahna, 2018).

A significant positive correlation was found between soothing—a sub-dimension of interpersonal emotion regulation—and generalized anxiety symptoms. This supports previous findings that individuals experiencing persistent anxiety are more likely to seek reassurance and comfort from others (Altan-Atalay & Sarıtaş-Atalar, 2022; Gökdağ & Naldöken, 2021). While this strategy may offer short-term relief, it can also reinforce avoidance behaviors and contribute to the chronicity of anxiety symptoms (Hofmann et al., 2016).

Although psychological resilience is thought to play a moderating effect in the association between psychopathology and interpersonal emotion regulation, the results of the moderation study were not statistically significant. There could be a number of reasons for this. First, psychological resilience might serve as a mediator in this association rather than a buffer; this possibility is not examined in the current model. Second, dynamic mechanisms like cognitive flexibility or adaptive coping skills—two essential elements of resilience—may not be captured by the PRSA-21 scale employed in this study (Bonanno et al., 2007).

Cultural context may also play a critical role. In collectivist cultures like Turkey, social support is often emphasized regardless of individual levels of resilience. Thus, individuals may engage in interpersonal emotion regulation strategies due to cultural expectations rather than as a reflection of personal strengths (Kagitcibasi, 2007). Consequently, the absence of a moderating effect may reflect sociocultural norms that overshadow the individual variability in resilience.

These results have clinical significance. Interventions that specifically target interpersonal techniques and improve context-specific emotion regulation abilities may be beneficial if resilience does not considerably mitigate these associations. Instead of concentrating only on personal characteristics like resilience, programs that promote strong social support networks and raise emotional awareness may be more helpful.

Findings For Correlation Analysis

When analyzing the relationship between the interpersonal emotion regulation strategies and generalized anxiety disorder in the present study, a positive correlation was seen only between soothing and generalized anxiety disorder, out of the interpersonal emotion regulation strategies. When reviewing the literature, there are studies suggesting that soothing, one of the interpersonal emotion regulation strategies, which refers to the attempt of a person to seek for solace from another person in order to overcome the negative events with which s/he faces, is associated with anxiety symptoms in particular (Altan-Atalay & Sarıtaş-Atalar, 2022; Koç et al., 2019; Ray-Yol et al., 2020; Gökdağ et al., 2019). Recently, when the studies in the literature, which analyze the relationship between interpersonal emotion regulation strategies and psychopathology, are reviewed, soothing was concluded to be the most relevant strategy (Gökdağ & Naldöken, 2021). These findings support the results of the present study. The individuals with intensive and constant anxiety tend to seek help from others rather than having a positive perception of themselves in coping with problems. The fact that the person shares a negative situation s/he has faced with another person in order to be soothed and relieved may help reduce the impact of the situation that the person is experiencing, whereas it may cause the person to

perceive this incident as more complicated and thus make the anxiety become long-lasting and more intensive.

There is a negative correlation between social modeling and enhancing positive affect, among the interpersonal emotion regulation strategies. When the literature is reviewed, there are findings suggesting that enhancing positive affect has a negative relationship with depression (Altan-Atalay & Sarıtaş-Atalar, 2022; Koç et al., 2019). Increasing the positive feelings, which aims at ensuring that a person makes sharing with other people to increase the intensity of his/her feelings when s/he is in a positive mood is important because it is the only interpersonal emotion regulation strategy aiming at making a person cope with the other people's feelings as well as regulating his/her own emotions (Hofmann et al., 2016). In a study performed with a German sample, a negative relationship was also found between enhancing positive affect and depression (Pruessner et al., 2019). When reviewing the present study and the literature, majority of the studies states that enhancing positive affect and depression have a negative relationship with each other (Hofman et al., 2016). This result can be explained by the fact that emotion regulation strategies are important in understanding the feelings of others; (Chacón-Cuberos, et al. (2019)) and that emotion regulation is socially associated and may also enhancing positive affect (La Guardia et al. 2000; Ryan et al., 2005).

In a similar way to the variables of the study, Ogan and Öz Soysal (2021) observed in their studies in which they have analyzed the predictive role of self-control and basic psychological satisfaction of needs of university students on the interpersonal emotion regulation that there was a positive relationship between interpersonal emotion regulation and the variables 'self-control', 'competence' and 'relatedness' and a negative relationship between interpersonal emotion regulation and the variable 'being autonomous'. In addition, it was concluded that the scores of relatedness, self-control, competence, being autonomous, all of which have a significant relationship with interpersonal emotion regulation, are a significant predictor of the interpersonal emotion regulation.

Although some studies in the literature state that the use of interpersonal emotion regulation strategies may be associated with the positive results, it also states that some interpersonal emotion regulation strategies may also be associated with psychopathology symptoms, low psychological health and insufficient interpersonal relationships (Barthel et al., 2018). In the present study, no significant relationship was found between enhancing positive affect, perspective-taking, social modeling and generalized anxiety disorder; and between soothing and perspective-taking strategy and depression. This can be explained by the fact that the interpersonal emotion regulation occurs in social context and that the people suffering from generalized anxiety disorder and depression symptoms avoid communicating with another person. At the same time, the fact that some individuals tend to use different emotion regulation strategies rather than making use of others can account for this finding (Leone & Russo, 2009).

When the relationship between interpersonal emotion regulation and psychological resilience is analyzed, it was concluded that there was a positive relationship between social modeling sub-dimension score and psychological resilience, individual sources, cultural and contextual sources, relational sources, familial sources sub-dimension score and total score of adult psychological resilience. It was concluded that there was a positive relationship between soothing sub-dimension score and familial sources sub-dimension score. It was concluded that there was a positive relationship between enhancing positive affect sub-dimension score, and cultural & contextual, relational, individual, familial sources sub-dimension score and total score of adult psychological resilience scale. It was concluded that there was a positive relationship between perspective-taking sub-dimension score, and relational sources, cultural & contextual sources sub-dimension score and total score of adult

psychological resilience scale. It was concluded that there was a positive relationship between total score of interpersonal emotion regulation scale and total score of adult psychological resilience scale.

Interpersonal emotion regulation be either adaptive or maladaptive. Interpersonal emotion regulation strategies may be adaptive if they play a moderator role in the emergence of psychological symptoms, whereas they may be maladaptive if they cause the person to adopt security behaviors and increase avoidance behaviors, causing psychological symptoms to be seen more frequently and to continue. (Hofmann, 2014). In our study, observation of the positive relationship between interpersonal emotion regulation and psychological resilience refers to the adaptive process of interpersonal emotion regulation.

There are not sufficient studies in the literature, which analyze the relationship between interpersonal emotion regulation and psychological resilience. Reviewing the literature, there are limited studies analyzing the relationship between interpersonal emotion regulation and psychological resilience. Reviewing the studies in the literature, Yüksel et al. (2021) concluded in their studies on psychological resilience, emotional intelligence and interpersonal emotion regulation that there was a negative relationship between psychological resilience, and social modeling and soothing, out of interpersonal emotion regulation sub-dimensions.

Findings For Moderator Analysis

When reviewing the literature, there were no studies addressing the moderator role of the psychological resilience in the generalized anxiety and depression effect of interpersonal emotion regulation strategies. Psychological resilience refers to the individual's ability to adapt when s/he faces with a stressful situation in a process that occurs with the presence of risk and protective factors. The individual protective factors within the psychological resilience involves a person's having self-confidence and self-competence. The people with high self-esteem and self-competence can use their own sources more successfully to overcome a stressful situation they are facing with (Rutter, 1985, as cited in Karaırmak, 2006). When the literature is reviewed, the majority of the findings show the negative relationship between interpersonal emotion regulation and psychopathies. Psychological resilience appears not to have a protective or positive-transforming effect on these negative relationships. Consequently, it appears that there is no interaction of psychological resilience with people who need others to regulate their emotions in distressing situations and that this does not have an effect on generalized anxiety disorder and depression.

According to Gross's (1998) process model of emotion regulation, individuals regulate their emotions either antecedently (e.g., cognitive reappraisal) or responsively (e.g., suppression). Interpersonal emotion regulation falls into the latter category, especially when individuals depend on others to modulate distress. However, the absence of a strong moderation effect in this study may indicate that unless intrapersonal capacities such as resilience are adequately developed, interpersonal strategies alone may have limited buffering capacity in the context of psychopathology.

In this study, the moderating role of psychological resilience in the relationship between interpersonal emotion regulation and symptoms of depression and anxiety was found to be either non-significant or only marginally significant. There are several possible explanations for these findings. First, the influence of resilience may vary depending on the type and intensity of emotional distress; it is possible that resilience does not interact directly with interpersonal strategies but operates independently. Additionally, individuals with high levels of psychological distress may rely more heavily on external regulation strategies, reducing the interactive potential between interpersonal and intrapersonal mechanisms. Clinically, these results imply that interpersonal strategies alone may be insufficient, and

interventions should also focus on enhancing individuals' internal coping capacities, such as cognitive flexibility and emotional insight.

Moreover, the absence of a significant moderation effect suggests that psychological resilience may play a different structural role in the relationship between interpersonal emotion regulation and psychological symptoms. Specifically, psychological resilience might operate as a mediating variable rather than a moderator. According to Baron and Kenny's (1986) mediation framework, a variable is considered a mediator when it explains the mechanism through which the independent variable influences the dependent variable. In this context, it is plausible that interpersonal emotion regulation contributes to higher levels of psychological resilience, which in turn reduces the symptoms of depression and anxiety. Recent methodological literature (e.g., Hayes, 2013) also supports the examination of indirect effects even in the absence of significant direct effects, highlighting the importance of testing alternative structural models. Future studies may benefit from employing PROCESS Model 4 or structural equation modeling (SEM) to investigate the mediating role of resilience, thereby offering a more comprehensive understanding of the underlying mechanisms in this relationship.

Conclusions and Suggestions

The results obtained from this study are briefly presented below.

- The social modeling and enhancing positive affect sub-dimensions of the interpersonal emotion regulation show a statistically significant difference in terms of gender. According to the mean scores, it is observed that women have higher scores than men.
- The interpersonal emotion regulation scores are analyzed in terms of age, the perspective-taking, which is one of the emotion regulation sub-dimensions, shows statistically significant difference in terms of age. According to mean scores, it is observed that those between 36 and 40 years of age have higher scores than those between 26 and 30 years of age.
- When analyzing the relationship between the interpersonal emotion regulation strategies and generalized anxiety disorder in the present study, a positive correlation was seen only between soothing and generalized anxiety disorder, out of the interpersonal emotion regulation strategies.
- There is a negative correlation between social modeling and enhancing positive affect, among the interpersonal emotion regulation strategies.
- When the relationship between interpersonal emotion regulation and psychological resilience is analyzed, it was concluded that there was a positive relationship between social modeling sub-dimension score and psychological resilience, individual sources, cultural and contextual sources, relational sources, familial sources sub-dimension score and total score of adult psychological resilience.
- The regression model established when the multiplication of adult psychological resilience, which is the moderator variable, and interpersonal emotion regulation, which is the independent variable, is added to the established model above was found to be statistically significant.
- When the adult psychological resilience, which is the moderator variable, and all sub-dimensions of interpersonal emotion regulation, which is the independent variable, are added to this model, the new variables obtained by this multiplication are seen not to impact the generalized anxiety disorder, which is the dependent variable. The adult psychological resilience does not play a moderator role in the impact of all sub-dimensions of interpersonal emotion regulation on the generalized anxiety disorder. Similarly, the adult psychological resilience does not play a

moderator role in the impact of all sub-dimensions of interpersonal emotion regulation on depression.

- Psychological resilience appears not to have a protective or positive-transforming effect on these negative processes.

Suggestions

In this study, the moderator effect of psychological resilience concept, which addresses the resilience of a person in the relationship of the concept of interpersonal emotion regulation, which addresses the processes by which the emotions experienced by one person in one's life are regulated by another, with some psychopathologies. There are limited information in the relevant literature about the variables available in the study. For this reason, in addition to the interpersonal emotion regulation strategies in the present study, it is thought that it may be important to analyze the effects of the interaction of other concepts that affect the resilience processes of the person other than psychological resilience, which is affected by different processes, on various psychopathologies.

A person's recognition and acceptance of his/her emotions can lead this person to develop his/her positive resources in emotion regulation. For this reason, psychoeducation or various informative studies on emotion, expression of emotions, and emotion regulation can be performed. In this way, it is thought that it may be useful for the person to be knowledgeable about the selection and functional use of interpersonal emotion regulation strategies that she or he can use while seeking support from someone else in the emotion regulation process.

Practical Implications

Although the study contributes to the theoretical understanding of the relationship between interpersonal emotion regulation and psychological resilience, its findings also have implications for real-world practice. The fact that psychological resilience did not demonstrate a significant moderator role in the relationship between interpersonal emotion regulation and symptoms of generalized anxiety or depression suggests that enhancing resilience alone may not be sufficient for individuals who struggle with emotion regulation in interpersonal contexts.

This has important implications for psychological interventions. For example, therapeutic approaches such as emotion-focused therapy, cognitive-behavioral therapy (CBT), or interpersonal psychotherapy (IPT) might benefit from targeting interpersonal emotion regulation strategies more directly, rather than relying solely on resilience-building programs. Clients who frequently depend on others to regulate their emotions may require interventions that focus on increasing emotional autonomy and developing adaptive interpersonal coping mechanisms.

Furthermore, psychoeducational programs can be designed to help individuals better understand how their interpersonal emotion regulation strategies affect their emotional well-being. Training modules could focus on fostering emotional awareness, boundary-setting, and socially adaptive expression of emotional needs.

At the systemic level, these findings highlight the potential importance of strengthening social support networks—not just as a buffer for distress but as part of structured and intentional emotional development strategies. School-based mental health programs, workplace well-being initiatives, and community-based interventions could incorporate interpersonal emotion regulation education into their frameworks.

Overall, while resilience remains a valuable psychological resource, the findings of the present study suggest that effective mental health interventions may require a more targeted focus on how individuals

engage others in their emotion regulation processes, particularly in clinical populations with heightened symptoms of anxiety and depression.

Limitations and External Validity

One important limitation of the study concerns the characteristics of the sample. The study included only individuals who exhibited at least moderate levels of generalized anxiety disorder and depression symptoms. Therefore, the results may not be fully generalizable to individuals with mild symptoms or those from non-clinical populations. This selective sampling may have constrained the variance in symptom severity, potentially influencing the observed relationships among variables.

Additionally, although the sample involved participants from various regions of Turkey and included diverse educational and occupational backgrounds, important indicators of representativeness—such as income level, employment sectors, cultural background, or access to social support systems—were not systematically collected. As a result, the extent to which the sample reflects the broader social and cultural context remains unclear. These missing demographic details may limit the external validity of the findings, especially in understanding how interpersonal emotion regulation and psychological resilience function in different environmental contexts.

Furthermore, the moderating role of psychological resilience may operate differently across socioeconomic strata. For instance, individuals from higher-income or urbanized populations may have greater access to internal and external resources that enhance resilience, whereas individuals from under-resourced backgrounds may experience psychological resilience in fundamentally different ways. Future studies could explore subgroup differences in moderation effects, particularly by including socioeconomic status, perceived stress levels, or the availability of social support as contextual moderators.

The use of convenience sampling, which might have introduced bias in participant selection, is one of the study's limitations. An online platform (Google Forms) was used to collect the data, which may have disproportionately included people who are more tech-savvy, have dependable internet access, and are accustomed to taking online surveys. This may have reduced the findings' generalizability by excluding older persons, people from rural or under-resourced locations, and populations with low levels of digital literacy.

Furthermore, because demographic stratification cannot be controlled for using the convenience sampling method, some sociodemographic groups (such as particular age groups, genders, and socioeconomic levels) may be over- or under-represented. Consequently, the results can be indicative of a somewhat self-selected and possibly homogeneous sample.

Future research would benefit from using stratified or quota-based sampling methods, which can ensure better representation of key demographic groups and improve external validity. Implementing stratified sampling strategies—such as stratifying by region, income level, education, cultural identity, or access to mental health services—could yield more balanced and generalizable data across diverse subpopulations.

In the present study, a moderation model was employed, examining psychological resilience as a moderating variable. However, future research is encouraged to test alternative models. Specifically, mediation models could be used to investigate whether interpersonal emotion regulation affects symptoms of depression or anxiety through its influence on psychological resilience. Such analyses would contribute to a more comprehensive understanding of the causal pathways between the variables.

Due to the use of a convenience sample, the generalizability of the findings may be limited. Future research using stratified sampling is recommended to enhance external validity.

Compliance with Ethical Standards

Ethical Approval

The research was carried out with the approval of the Ethics Committee of Istanbul Arel University Ethics (approval no: 2022/09).

Author Contributions

The investigation, data collecting, conceptualization, methodology, analysis, the writing of the original draft, interpreting findings writing-review & editing tasks were carried out by B.Ç.K.

M.Ş contributed to conceptualization and the writing of the original draft, as well as review, editing. Additionally giving final approval of the version to be published.

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