

ORIGINAL ARTICLE

Investigating the Causal Model of Emotion Regulation Strategies with Emotional Alexithymia and The Mediating Role of Perfectionism in Female Master's Students

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ABSTRACT

The purpose of the present study was to examine the causal model of emotion regulation strategies with alexithymia and the mediating role of perfectionism in female master's students at Islamic Azad University, Kerman Branch. The research method was descriptive-correlational (relational), and path analysis within the structural equation modeling framework was used for data analysis. The statistical population of this research consisted of 523 female students in Kerman. The statistical sample in this study was 221 individuals (based on Cochran's formula). The sampling method was multi-stage cluster sampling. To measure these variables, the Gross and John (2003) Emotion Regulation Questionnaire, the Hill (2004) Perfectionism Questionnaire, and the Toronto Alexithymia Scale (1986) were used. In this research, descriptive methods including frequency, percentage, mean, and standard deviation were employed. The Kolmogorov-Smirnov test was used to determine the normality or non-normality of the data. Furthermore, for data analysis, Pearson correlation coefficient, path analysis, structural equation modeling, and the Sobel test with the bootstrap method were utilized using SPSS 25, Amos 25, and Mplus 7.4 software. The magnitude of the factor loadings for the questions confirms that the model had a strong fit. The results showed that the Normed Fit Index (NFI) was 0.98 and the Comparative Fit Index (CFI) was 0.99, indicating an acceptable fit of the model to the data. Additionally, the Root Mean Square Error of Approximation (RMSEA) was below 0.05 ($RMSEA \leq 0.05$), which indicates a very good fit. Correlation findings showed that the relationship between emotion regulation and alexithymia was positive and significant, but it was not significant with perfectionism. Correlation findings showed that the relationship between the suppression emotion regulation strategy and alexithymia was positive and significant, but it was not significant with perfectionism. Correlation findings showed that the relationship between the reappraisal emotion regulation strategy and alexithymia ($r=0.2, P < 0.01$) was positive and significant, but it was not significant with perfectionism. Correlation findings showed that the relationship between alexithymia and perfectionism was not significant. The results indicated that the cognitive reappraisal strategy has a direct and significant effect on alexithymia, whereas the suppression strategy and the direct effect of emotion regulation strategies on perfectionism were not significant, and perfectionism does not play a mediating role in the relationship between these strategies and alexithymia.

KEY WORDS

Emotion Regulation Strategies, Alexithymia, Perfectionism.



Introduction

Emotion regulation strategies refer to the techniques and methods that individuals employ to manage and control their emotions. The use of adaptive strategies, such as cognitive reappraisal, reduces stress and improves mental health, whereas maladaptive strategies, such as emotion suppression, can increase anxiety and depression (Kong et al., 2020). Recent research indicates that these strategies play different roles in various social and psychological contexts, and that proficiency in emotion regulation can help reduce psychological problems (Liu et al., 2021).

Alexithymia refers to the inability or avoidance of expressing inner feelings, often accompanied by emotional suppression. Recent studies have shown that alexithymia is associated with increased symptoms of anxiety and depression in individuals and can reduce quality of life. Furthermore, alexithymia can lead to impaired interpersonal relationships and weaken communication skills (Zuo et al., 2021).

Perfectionism, as a personality trait, can act as a mediator in the relationship between emotion regulation and mental health. Recent studies have shown that maladaptive perfectionism increases psychological pressure and reduces the ability to regulate emotions. In a study on adolescents, it was found that perfectionism plays a mediating role between emotional stress and the occurrence of mental disorders, and targeted interventions can mitigate this process (García & Zaich, 2021).

Methodology

The research method was descriptive-correlational (relational), and path analysis within the structural equation modeling framework was used for data analysis. The statistical population of this study consisted of 523 female students at the Islamic Azad University, Kerman Branch, during the 2024–2025 academic year. The statistical sample in this study was 221 individuals (based on Cochran's formula). The sampling method was multi-stage cluster random sampling. The following questionnaires were used as research instruments in this study.

Gross Emotion Regulation Questionnaire (ERQ)

This questionnaire was developed by Gross and John in 2003. The ERQ measures emotion regulation strategies in each individual through two components: (1) Cognitive Reappraisal (6 items) and (2) Expressive Suppression (4 items). The questionnaire consists of 10 questions, with responses rated on a 7-point Likert scale ranging from "strongly disagree" to "strongly agree." The higher the score an individual obtains, the higher their level of emotion regulation. In the study by Gross and John, internal consistency correlations of 0.79 for reappraisal and 0.73 for suppression were reported. In Iran, Hosseini reported a Cronbach's alpha coefficient of 0.79 for reappraisal.

Hill et al. Perfectionism Questionnaire (2004)

The Perfectionism Questionnaire was designed and validated by Hill and his colleagues (2004). This questionnaire consists of 58 closed-ended items based on a 5-point Likert scale. It assesses six dimensions: Interpersonal Sensitivity, Striving for Excellence, Order and Organization, Perceived Parental Pressure, Goal Orientation, and High Standards for Others. This questionnaire was validated by Zarei (2014).

Toronto Alexithymia Scale (1986)

The Toronto Alexithymia Scale consists of 20 questions, designed and developed by Toronto researchers in 1986, and is scored on a Likert scale ranging from "completely disagree" to "completely agree." The scale has three subscales: Difficulty Identifying Feelings, Difficulty Describing Feelings, and Externally Oriented Thinking. A total score for overall alexithymia is also calculated by summing the three subscale scores. This scale is suitable for administration in general and clinical samples and can be administered individually or in groups depending on the circumstances. The psychometric properties of the Toronto Alexithymia Scale-20 have been confirmed in numerous international studies (Parker, Taylor, & Bagby, 2001, 2003; Taylor & Bagby, 2000) and in the Persian version of the Toronto Alexithymia Scale-20 (FTAS-20; Besharat, 2007, 2008).

Statistical Analysis

In the statistical analysis phase, given the interval nature of the measurement scales and the research hypotheses, data analysis was conducted using Pearson correlation coefficient, path analysis, structural equation modeling, and the Sobel test with the bootstrap method, employing SPSS 25, Amos 25, and Mplus 7.4 software as appropriate.

Results

General hypothesis: The structural relationship model between emotion regulation strategies, perfectionism, and alexithymia among female students has a good fit. The results of Table 4 show the fit indices of the analyzed model.

The results of Table 4 showed that for the overall model (emotion regulation), the values were (RMSEA = 0.026, $p = 0.23$, $df = 41$, $\chi^2 = 47.15$), indicating a very good fit of the model to the population. Furthermore, fit indices were used to determine the appropriateness of the model fit to the data. The results showed that the Normed Fit Index (NFI) was 0.98 and the Comparative Fit Index (CFI) was 0.99, indicating an acceptable fit of the model to the data. Particularly, the CFI value, according to Mueller (1999), should be above 0.9, and according to Weston and Gore (2006), above 0.95 for the model to have a good fit with the data, as it is not affected by sample size. Moreover, if the Root Mean Square Error of Approximation (RMSEA) is ≤ 0.05 , the fit is very good; between 0.05 and 0.08, the fit is acceptable; and if above 0.08, the fit is poor. In this study, the RMSEA was below 0.05, indicating a very good fit.

The results of Table 4 also showed that for the component model (emotion regulation strategies), the values were (RMSEA = 0.027, $p = 0.22$, $df = 40$, $\chi^2 = 46.55$), indicating a very good fit of the model to the population. Fit indices were also used to determine the appropriateness of the model fit to the data. The results showed that the NFI was 0.98 and the CFI was 0.99, indicating an acceptable fit of the model to the data. Furthermore, the RMSEA was below 0.05, indicating a very good fit.

Table 1. Model Fit Indices

Model	Fit Indices	χ^2	df	χ^2/df	Sig	RMSEA	NFI	NNFI	CFI	GFI	AGFI
Overall Model	Index Value	47.15	41	1.15	0.23	0.026	0.98	0.94	0.99	0.96	0.94
Strategies Model		46.55	40	1.16	0.22	0.027	0.98	0.94	0.99	0.96	0.94

Discussion and conclusion

The aim of the present study was to investigate the causal model of emotion regulation strategies with alexithymia and the mediating role of perfectionism in female master's students in Kerman. Regarding the general hypothesis, the findings showed that the Normed Fit Index (NFI) and the Comparative Fit Index (CFI) indicated an acceptable fit of the model to the data. Furthermore, the Root Mean Square Error of Approximation (RMSEA) was below 0.05, indicating a very good fit.

Perfectionism does not play a significant mediating role in the relationship between emotion regulation strategies (suppression and cognitive reappraisal) and alexithymia in female master's students. To be more precise, the effect of suppression and cognitive reappraisal emotion regulation strategies on alexithymia is not indirect; rather, this effect is not exerted through changes in the individual's level of perfectionism. In this framework, individuals who use emotional suppression strategies do not tend to show greater alexithymia due to increased maladaptive perfectionism, because perfectionism could increase fear of others' judgment and criticism and prevent the individual from freely expressing their emotions. On the other hand, the use of cognitive reappraisal strategies, by reducing maladaptive perfectionism, does not help reduce alexithymia, since the individual, by reinterpreting situations and emotions, does not reduce perfectionistic pressure or enable healthier emotional expression. Given the role of emotion regulation strategies in reducing alexithymia, it is suggested that universities, especially counseling centers, hold workshops to teach effective emotion regulation strategies such as cognitive restructuring, emotional acceptance, and mindfulness.

The results indicated that the cognitive reappraisal strategy has a direct and significant effect on alexithymia, whereas the suppression strategy and the direct effect of emotion regulation strategies on perfectionism were not significant, and perfectionism does not play a mediating role in the relationship between these strategies and alexithymia.

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Ethical Considerations

During the execution of this research and the preparation of the article, all national laws and professional ethical principles related to research have been observed.

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All expenses of the present study were covered by the author of the article.

Conflict of Interest

According to the author's statement, this article has no conflict of interest. This article has not been previously published in any journal, whether domestic or international.

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