

Research Article

Coping Strategies, Emotional Dysregulation, and Somatoform Symptoms: A Mediation Model

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Abstract

Objective: The present study, a descriptive-cross-sectional design using structural equation modeling, aimed to determine the structural relationships between coping strategies and somatoform symptoms, with the mediating role of emotional dysregulation among individuals with somatoform disorders in Tehran.

Method: The statistical population consisted of all individuals with somatoform disorders referred to the psychosomatic departments of Tehran's hospitals. Following the recommendations of Guadagnoli and Velicer (1998), a sample of 250 patients (149 women and 101 men), who met the inclusion criteria, was recruited via purposeful sampling. Data were collected using the Lazarus and Folkman (1984) Coping Strategies Questionnaire, the Gratz and Roemer (2004) Difficulties in Emotion Regulation Scale, and the Rief and Hiller (2003) Somatoform Disorders Questionnaire. After confirmatory analysis, the proposed model was evaluated through structural equation modeling and path analysis.

Results: The findings showed that the developed model has a good fit. The mediating variable, emotional dysregulation, was found to be a positive and significant predictor of somatoform symptoms ($p < .001$). Furthermore, mediation analysis revealed that problem-focused and emotion-focused coping strategies can respectively decrease and increase somatoform symptoms by reducing and increasing emotional dysregulation.

Conclusion: According to the findings, it can be concluded that somatoform symptoms are affected by coping strategies and emotional dysregulation. Therefore, reducing the somatoform symptoms of people with this disorder requires serious attention to adopting appropriate, problem-focused coping strategies and correcting emotional dysregulation.

Keywords: Coping Strategies, Emotional Dysregulation, Health, Somatoform Disorders, Somatoform Symptoms.

Extended Abstract

Background and Objectives

Somatoform symptoms, characterized by physical complaints that cannot be fully explained by a medical condition, continue to pose substantial challenges for clinical practice and mental health research. These symptoms are frequently associated with emotional difficulties and maladaptive ways of dealing with stress, yet the precise mechanisms linking coping processes and emotional functioning to somatoform complaints remain insufficiently understood. The present study aimed to investigate a mediation model in which emotional dysregulation transmits the effects of coping strategies on somatoform symptoms. By integrating coping theory with contemporary models of emotion regulation, this research sought to clarify how specific coping patterns may contribute to the development and maintenance of somatic symptomatology. The primary objective was to test whether emotional dysregulation mediates the relationship between coping strategies and somatoform symptoms.

Materials and Methods

The study employed a cross-sectional, correlational design. Participants were [N; e.g., “X adults”] recruited from [describe sample briefly: e.g., community, clinical, or student population] who completed a series of standardized self-report measures. Coping strategies were assessed using the Lazarus and Folkman coping scale, which differentiates between problem-focused and emotion-focused coping, as well as more maladaptive patterns such as avoidance and escape. Emotional dysregulation was evaluated through a validated measure capturing difficulties in understanding, accepting, and managing emotions, including problems with impulse control and limited access to adaptive regulation strategies. Somatoform symptoms were assessed via a questionnaire targeting a broad range of physical complaints (e.g., pain, gastrointestinal difficulties, cardiovascular and neurological symptoms) not fully accounted for by medical diagnoses. Data analysis involved descriptive statistics, bivariate correlations, and structural equation modeling (SEM) to test the hypothesized mediation model. Global model fit was evaluated using standard indices, including the CFI, TLI, RMSEA, and SRMR.

Results

Descriptive and correlational analyses revealed that maladaptive coping strategies, particularly avoidance and emotion-focused coping centered on rumination, were positively associated with emotional dysregulation and somatoform symptoms. Problem-focused coping showed weak or negative associations with emotional dysregulation and somatoform complaints. Emotional dysregulation itself was robustly correlated with somatoform symptoms. The SEM demonstrated an acceptable to good fit to the data. Maladaptive coping strategies exerted significant direct effects on emotional dysregulation. Emotional dysregulation, in turn, showed a strong and significant direct effect on somatoform symptoms. The indirect paths from maladaptive coping to somatoform symptoms through emotional dysregulation were significant, supporting the mediating role of emotional dysregulation. Some direct effects from coping strategies to somatoform symptoms remained significant, suggesting partial mediation in certain pathways.

Discussion

These results indicate that emotional dysregulation plays a significant role in linking maladaptive coping strategies to somatoform symptoms. The findings suggest that individuals who rely on less adaptive coping mechanisms, such as avoidance, may experience greater difficulties in managing their emotions, which then contributes to the manifestation of somatic complaints. This supports theoretical perspectives that somatic symptoms can arise when emotional distress

is not effectively processed or regulated. The partial mediation observed suggests that while emotional dysregulation is a key pathway, other mechanisms may also contribute directly from coping to somatic symptoms.

Conclusion

The present study provides empirical support for a mediation model in which emotional dysregulation links maladaptive coping strategies to somatoform symptoms. These findings underscore the importance of addressing both coping styles and emotional regulation capacities in therapeutic interventions for somatoform symptoms. Future research should explore these relationships using longitudinal designs and multi-method assessments to further elucidate the complex interplay between coping, emotion regulation, and somatic symptomatology.

Introduction

Somatic Somatoform disorder is a diagnosis that has recently been defined in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) as the manifestation of one or more somatic symptoms accompanied by disproportionate thoughts, feelings, and/or behaviors related to the symptom(s), causing significant distress and/or impairment (American Psychiatric Association's Research Program, 2013). A foundational characteristic of these conditions, referred to as somatoform symptoms, is that they lack a clear physiological or structural basis to account for their presence (Nazzari et al., 2021; Pohontsch et al., 2021). The impact of these symptoms on an individual's life is substantial; they can directly affect physical health, causing significant pain and discomfort, which in turn often leads to secondary psychological consequences such as increased stress and depression. The high prevalence and considerable impact on well-being underscore the importance of conducting research in this area to improve health, advance scientific knowledge, and enhance quality of life for those affected (Busch et al., 2020; Kinnunen et al., 2010; Koh, 2013).

In understanding the factors that contribute to the onset and maintenance of these complex disorders, psychological coping strategies are of paramount importance. Coping strategies reflect the specific ways individuals approach and manage different stressful situations in their lives. These strategies are broadly categorized into two major types. First, problem-focused coping encompasses strategies that are directly related to the stressful situation or stimulus, with the ultimate goal of reducing or eliminating it. These strategies involve concerted efforts by the individual to reassess their attitudes and needs, acquire new skills and responses, actively engage in problem-solving, make necessary corrections, and ultimately gain mastery over the primary problem and its consequences (Lazarus & Folkman, 1984). In the context of somatic illness, these strategies are highly adaptive, as they assist individuals in better adapting to and effectively managing their symptoms (Muazzam et al., 2020) by focusing on changing thoughts and behaviors to align with life's realities. This approach encourages the use of positive solutions over a concentration on the symptoms themselves, and can promote mindfulness, helping individuals to consciously attend to their symptoms without exacerbating them or developing an excessive preoccupation and worry (Chen et al., 2022; Kozusznik et al., 2021). Secondly, emotion-focused coping involves attempts to control or reduce the emotional responses that are evoked by stress, with the aim of restoring a healthy emotional balance (Lazarus & Folkman, 1984).

A third critical psychological construct in this domain is emotional dysregulation. This concept refers to a state in which an individual is unable to effectively manage their own emotions. This inability may stem from difficulties in identifying, analyzing, or implementing appropriate strategies for emotion regulation (Gratz & Roemer, 2004). It is a condition characterized by an incapacity to manage positive or negative emotions in a proper and balanced way, often leading to inappropriate or disproportionate responses when dealing with stressful situations or negative feelings (Thompson, 2019; Trull & Carpenter, 2013; Vogel et al., 2023). Given its profound impact on mental and somatic health, research into emotional dysregulation and its various components is essential for developing more effective strategies to manage these difficulties and improve overall quality of life (Carpenter & Trull, 2013; Thompson, 2019; Vogel et al., 2023). While the roles of coping and emotional regulation are individually recognized, the specific problem this research addresses is the complex, interconnected pathway through which these factors influence somatic health. The coping strategies that individuals employ when facing stress and challenges are believed to directly impact the manifestation of somatic symptoms (Irie et al., 2023; Chishti & Rafiq, 2019). It is theorized that problem-focused strategies, by actively addressing stressors, can lead to better health outcomes and a reduction in physical complaints (Chen et al., 2022; Frei et al., 2020; Kozusznik et al., 2021). Conversely, an over-reliance on emotion-focused coping, particularly maladaptive forms like avoidance or suppression, may inadvertently exacerbate emotional and somatic problems, leading to a vicious cycle of distress and physical discomfort (Cole et al., 2018; Hu & Liang, 2021).

The mechanism through which these different coping styles exert their effects on physical health is not fully understood, but evidence suggests that the relationship can be explained through the mediating role of emotional dysregulation (Anderson et al., 2022; Chen et al., 2020). It is theorized that effective, problem-focused coping contributes to better emotional regulation and a greater sense of psychological balance (Cooley et al., 2022; Teixeira et al., 2022). This enhanced regulation, in turn, may dampen the physiological stress response that underlies many somatic complaints. In contrast, maladaptive coping strategies may perpetuate a state of emotional dysregulation, which then leads to an increase in somatoform symptoms (Rief & Broadbent, 2007). This creates a critical research question regarding the mediational pathway.

Although a growing body of literature has established connections between these variables in pairs, there remains a significant gap in the research. Studies have examined emotion regulation in the context of somatic symptoms (Güney, 2022; Schnabel, Petzke, and Witthöft, 2022), the link between perceived stress and somatic severity (Selvi and Bozo, 2023), and coping strategies among individuals with multiple physical symptoms (Raasthøj, Rasmussen, Carstensen et al., 2023). However, few studies have employed a comprehensive model to simultaneously test the distinct pathways through which both problem-focused and emotion-focused coping strategies influence somatoform symptoms via the specific mediating role of emotional dysregulation. Addressing this gap requires a robust analytical approach, such as Structural Equation Modeling (SEM), which is an effective and powerful tool to accurately investigate and understand such complex correlations and elucidate underlying mechanisms (Cooley et al., 2022; Teixeira et al., 2022). Therefore, this research aimed to investigate the mediating role of emotional dysregulation in the relationship between coping strategies and somatoform symptoms in individuals with somatoform disorders.

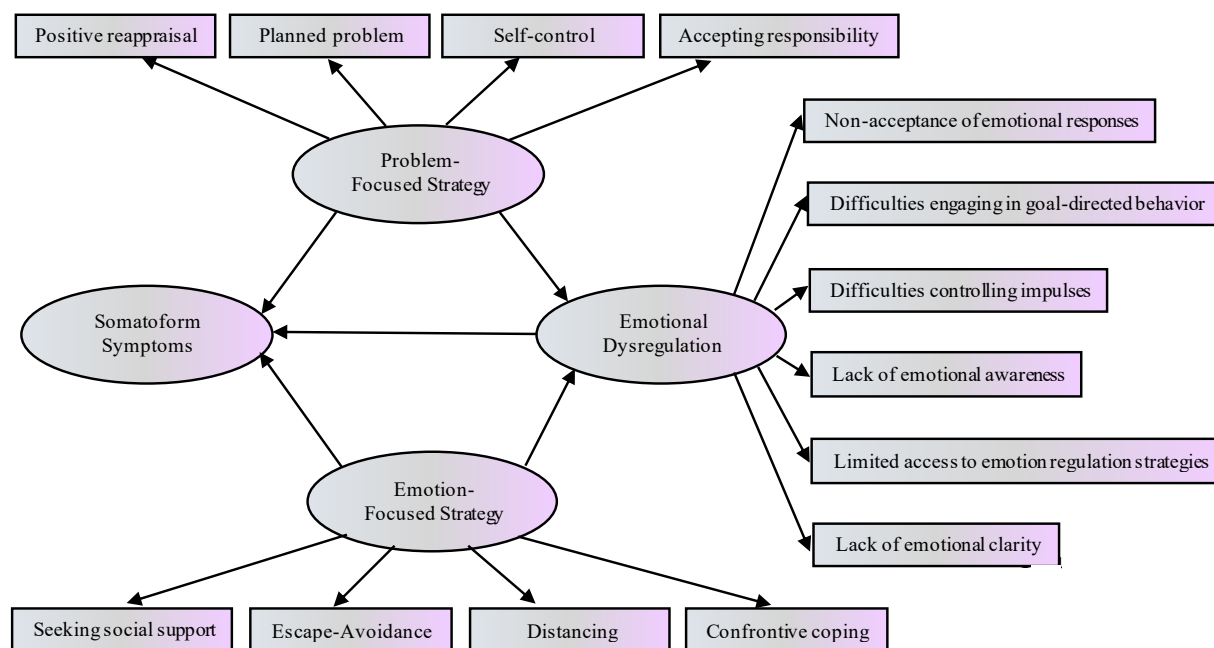


Figure 1. Conceptual Model of the Research

Method

This was a descriptive-correlational study based on structural equation modeling. The current study was reviewed by the Ethics Committee of Tabriz University and approved with the ethics code IR.TABRIZU.REC.1401.086. The initial statistical population consisted of all individuals with somatoform disorders referring to the psychosomatic wards of hospitals in Tehran. Based on the recommendation of Guadagnoli and Velicer (1988), a sample of 250 patients (149 women and 101 men) who met the inclusion criteria was recruited using a purposeful sampling method. Inclusion criteria were: having a diagnosis of somatoform disorder by the ward psychiatrist, a score above 60 on the Somatoform Disorders Questionnaire, being at least 20 years old, having at least a middle school education, referring to the psychosomatic wards of hospitals in Tehran, and providing informed consent and willingness to participate in the study. The only exclusion criterion was a participant's unwillingness to continue cooperation at any time during the study. To conduct this research, after obtaining the necessary permits and selecting hospitals in Tehran with psychosomatic wards, the researcher visited the psychosomatic ward of Taleghani Hospital, the psychiatric and psychosomatic ward of Hazrat Rasool Akram (PBUH) Hospital, and the psychosomatic ward of Imam Khomeini Hospital on several occasions. After establishing communication and obtaining the participants' consent, the researcher first explained the research objective to them and then provided the necessary instructions and questionnaires. Data were collected individually. The research instruments included the Rief and Hiller (2003) Somatoform Disorders Questionnaire, the Gratz and Roemer (2004) Difficulties in Emotion Regulation Scale, and the Lazarus and Folkman (1984) Coping Strategies Questionnaire.

Somatoform Disorders Questionnaire

This instrument, developed by Rief and Hiller (2003), is a new 53-item scale designed to assess the effects of treatment in somatoform symptom disorders and to screen for somatoform symptoms. The scoring

method is a 5-point Likert scale, ranging from 0 (not at all) to 4 (very severe), with the total score ranging from 0 to 212. Higher scores on this questionnaire indicate a greater severity and frequency of somatoform symptoms. Conducted studies have shown the appropriate validity and reliability of this instrument. The reported Cronbach's alpha for all non-gender-specific items in the original study is 0.92 (Rief & Hiller, 2003). In an Iranian validation, the internal consistency of this questionnaire was found to be 0.92 using Cronbach's alpha, and the test-retest reliability with a two-week interval was 0.70 (Ebrahimi et al., 2018). Additionally, in the present study, Cronbach's alpha for the entire questionnaire was calculated at 0.95, and the composite reliability was 0.96.

Difficulties in Emotion Regulation Scale

The Difficulties in Emotion Regulation Scale (DERS), developed by Gratz and Roemer (2004), is a 36-item self-report measure designed to assess clinically relevant difficulties in emotion regulation. Items are rated on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always), with total scores ranging from 36 to 180. Higher total scores reflect greater overall difficulties in emotion regulation. Factor analysis has revealed the existence of 6 distinct factors or subscales: (1) non-acceptance of emotional responses, (2) difficulties engaging in goal-directed behavior, (3) impulse control difficulties, (4) lack of emotional awareness, (5) limited access to emotion regulation strategies, and (6) lack of emotional clarity. The results from the original validation study indicate that the scale has high internal consistency (Cronbach's alpha = 0.93), and all six subscales have a Cronbach's alpha above 0.80 (Gratz & Roemer, 2004). Based on data obtained by Azizi Mirzaei and Shams (2009) in Iran, the Cronbach's alpha of this questionnaire was estimated at 0.92.

Lazarus Coping Strategies Scale

The Coping Strategies Questionnaire is a 66-item scale based on the Lazarus and Folkman (1984) Coping Strategies Scale, assessing a wide range of thoughts and actions individuals employ when facing external stressful situations. Items are rated on a 4-point Likert scale, ranging from 0 (does not apply/not used) to 3 (used a great deal). Higher scores on each subscale indicate a more frequent use of that specific coping strategy. The questionnaire is designed to measure eight distinct subscales: Confrontive Coping, Distancing, Self-Controlling, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem-Solving, and Positive Reappraisal. For the purpose of the analyses in this study, these eight subscales are grouped into two higher-order categories: Problem-Focused Strategy and Emotion-Focused Strategy. The internal consistency of this instrument in the original culture, using Cronbach's alpha, has been reported as 0.66 to 0.73 for each of the coping methods (Lazarus & Folkman, 1984). In Vahedi's study (2006; cited in Vagi, 2011), the reliability of the Coping Strategies Questionnaire was estimated at 0.80 in Iran using the internal consistency method (Cronbach's alpha). In Tusi et al.'s (2010) study, the reliability of this test was 0.85. Additionally, in the present study, Cronbach's alpha for the entire questionnaire was 0.93.

Data Analysis Method

The data were analyzed using both descriptive and inferential statistics with the aid of SPSS-25 and SmartPLS 3 software. At the descriptive level, statistics such as mean, standard deviation, frequency, and percentage were used to summarize the demographic characteristics of the sample and the main research variables. At the inferential level, preliminary analyses involved using Pearson's correlation coefficient to

examine the bivariate relationships between the research variables. The primary data analysis to test the research hypotheses was conducted using Structural Equation Modeling (SEM). Specifically, path analysis was employed within the SEM framework to evaluate the direct and indirect effects of the proposed mediational model. The significance of the indirect (mediating) effect was further assessed using the Sobel test with a 95% confidence interval.

Results:

The frequency distribution of the respondents' demographic variables is shown in Table 1.

Table 1: Frequency Distribution of Demographic Variables of Respondents

	Variable	Count	Percentage
Education	High School Diploma	32	12.8
	Associate's Degree	41	16.4
	Bachelor's Degree	112	44.8
	Master's Degree	49	19.6
	Doctoral Degree	16	6.4
	Total	250	100
Age	21 to 39 years old	159	63.6
	40 to 65 years old	91	36.4
	Total	250	100
Gender	Male	101	40.4
	Female	149	59.6
	Total	250	100
Employment	Employed	139	55.6
	Unemployed	111	44.4
	Total	250	100
Duration	2 years	184	73.6
	More than 2 years	66	26.4
	Total	250	100
Marital Status	Single	48	19.2
	Married	122	48.8
	Widowed	36	14.4
	Divorced	44	17.6
	Total	250	100

Table 2 presents the descriptive statistics of the research variables.

Table 2: Descriptive Statistics of the Study Variables (n = 250)

Main Variable	Components	Mean	SD ¹	Minimum	Maximum
Problem-Focused Strategy	Accepting responsibility	3.71	6.81	0	15
	Self-control	16.56	7.13	0	30
	Planned problem solving	13.36	5.18	0	24
	Positive reappraisal	13.87	6.39	0	27
Total	Problem-Focused Strategy	50.61	17.42	8	92

Emotion-Focused Strategy	Confrontive coping	12.08	4.85	0	21
	Distancing	12.83	6.72	0	27
	Escape-Avoidance	16.71	6.22	0	30
	Seeking social support	8.60	5.70	0	21
Total	Emotion-Focused Strategy	50.22	17.62	4	95
Emotional Dysregulation	Non-acceptance of emotional responses	20.04	4.88	6	30
	Difficulties engaging in goal-directed behavior	18.2	3.94	7	25
	Difficulties controlling impulses	22.17	4.10	10	30
	Lack of emotional awareness	2.81	4.86	6	30
	Limited access to emotion regulation strategies	29.76	5.33	14	40
	Lack of emotional clarity	17.25	3.29	9	25
Total	Emotional Dysregulation	128.05	18.38	74	178
Total	Somatoform Symptoms	121.36	19.46	62	162

To examine the distribution of the data, the Kolmogorov-Smirnov test was used. Except for emotional dysregulation ($p = 0.084$), the significance level of the Kolmogorov-Smirnov test for other variables was less than the 0.05 error level. Therefore, the data distribution of all research variables, except emotional dysregulation, was non-normal. Given the non-normality of the data for most variables, the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach was selected for the main analysis using SmartPLS 3 software. This method is non-parametric and does not require the assumption of normal data distribution, making it suitable for the current dataset. Following the normality test, correlation coefficients between the main variables were examined, as shown in Table 3. The findings of Table 3 indicate that the highest correlation of somatoform symptoms as the criterion variable is with emotional dysregulation ($r = .737$). However, the correlations between somatoform symptoms and the variables of problem-focused strategies ($r = -.610$) and emotion-focused strategies ($r = .483$) are also at a strong and acceptable level.

Table 3: Correlation Coefficients Between Main Variables

Variable / Index	1	2	3	4
Problem-Focused Strategy	1			
Emotion-Focused Strategy	-0.436	1		
Emotional Dysregulation	-0.619	0.594	1	
Somatoform Symptoms	-0.610	0.483	0.737	1

All coefficients are significant at the 0.001 level

Figure 2 shows the final model in the state of F significant coefficients.

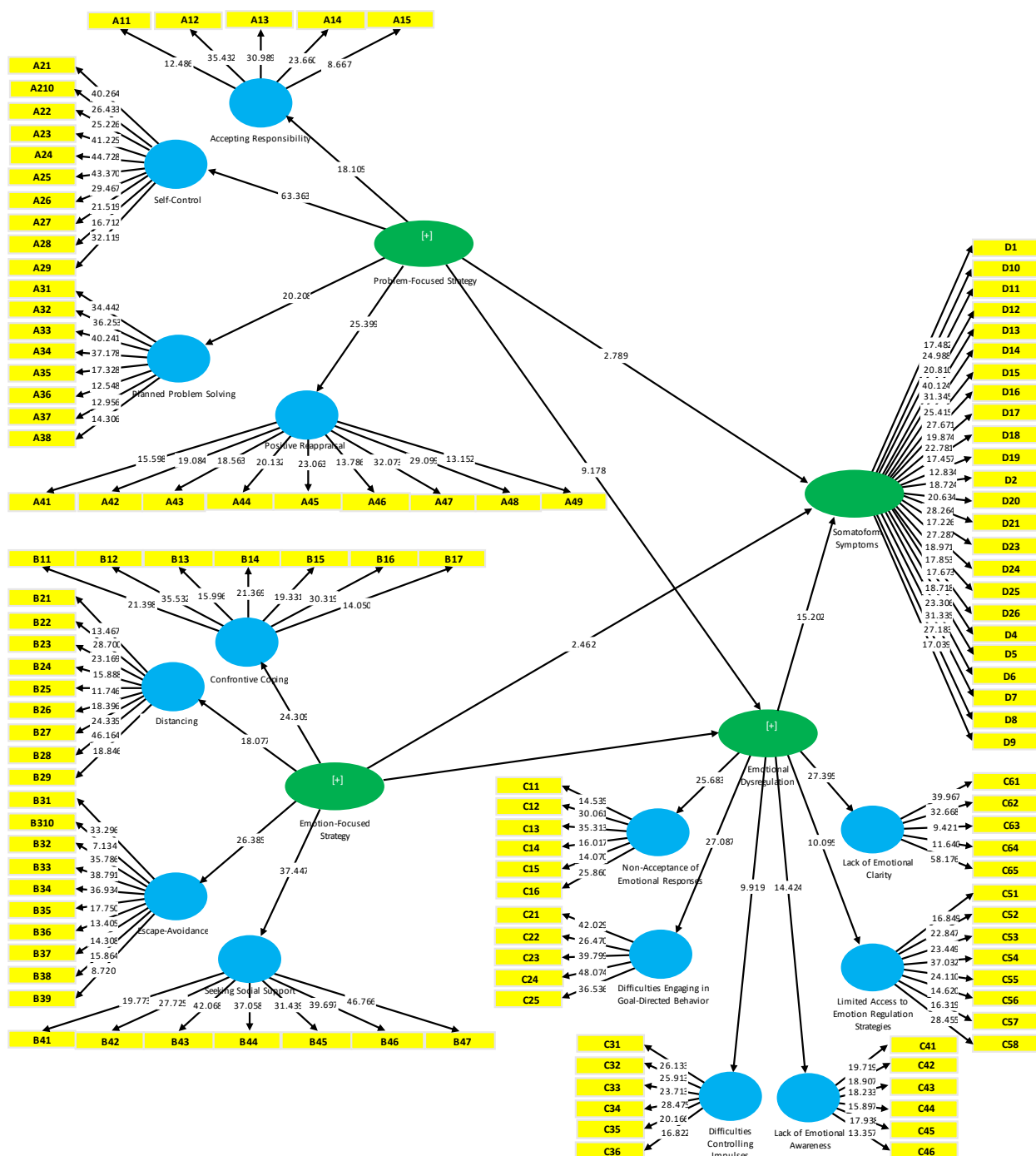


Figure 2: Final Model with t-Values Coefficients (Evaluation of Measurement Models)

Figure 3 shows the conceptual model of the research in the state of standardized path coefficients.

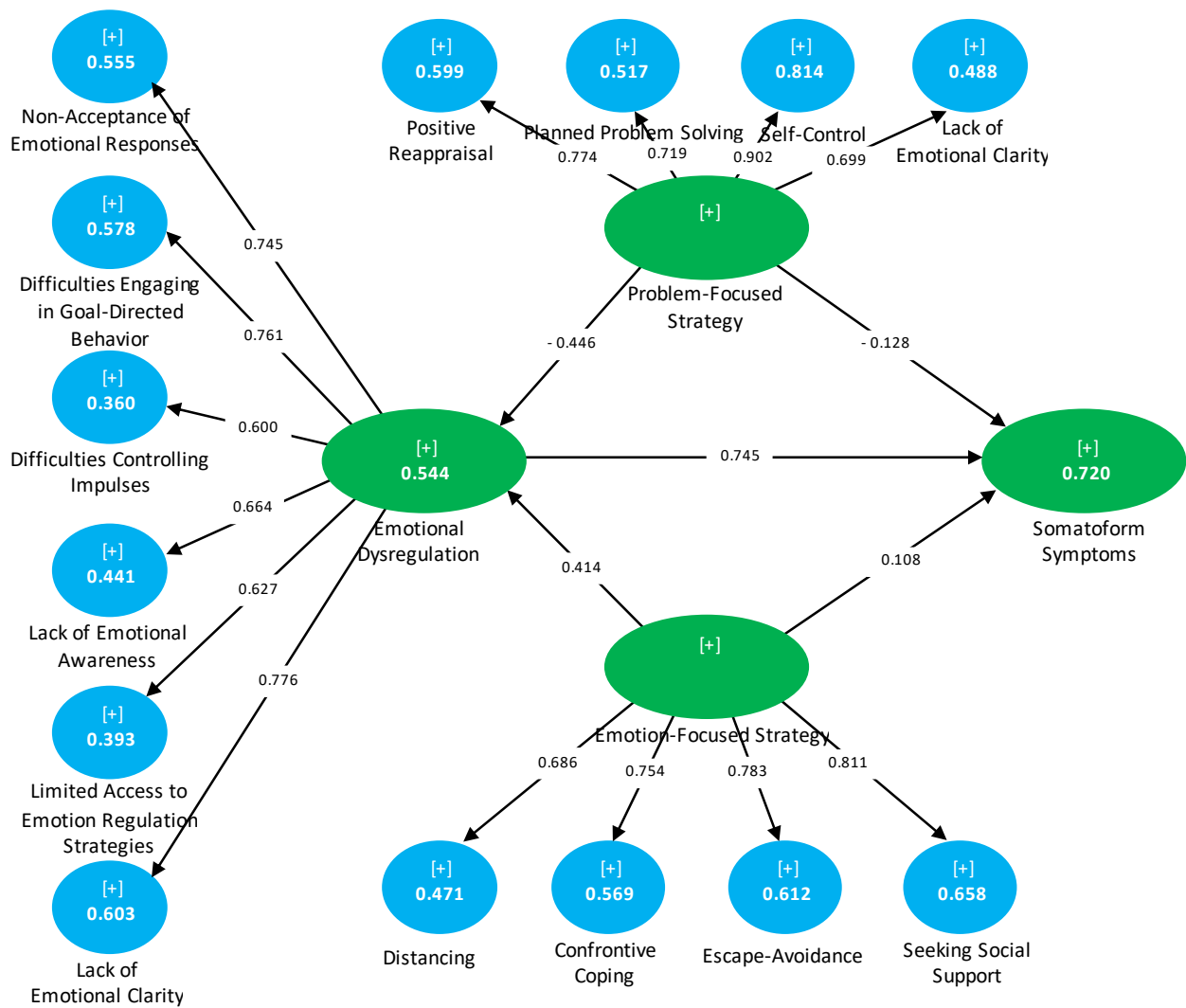


Figure 3: Research Model in the State of Standardized Path Coefficients (Evaluation of Structural Models)

Figure 4 shows the conceptual model of the research in the state of t-significance.

As can be seen in Table 4, the calculated t-values between all independent variables of the model and the dependent variables present in the model are greater than 1.96 and are significant at the 95 percent level. Therefore, it can be concluded that the relationship between problem-focused coping strategies with their components, emotion-focused coping strategies with their components, and emotional dysregulation with its components is significant.

Table 4: Results related to the significance of relationships between main variables

Path: Independent Variable → Dependent Variable	β	T_value	Significance Level	Result
Problem-Focused Strategy → Emotional Dysregulation	-0.446	9.178	0.00	significant
Emotion-Focused Strategy → Emotional Dysregulation	0.414	7.787	0.00	significant
Emotional Dysregulation → Somatoform Symptoms	0.688	15.201	0.00	significant
Problem-Focused Strategy → Somatoform Symptoms	-0.128	2.789	0.005	significant
Emotion-Focused Strategy → Somatoform Symptoms	0.108	2.462	0.014	significant

Table 5 shows the results related to the coefficient of determination of the dependent variables. The R^2 values for the latent endogenous (dependent) variables, i.e., emotional dysregulation (0.544) and somatoform symptoms (0.72), are at a satisfactory level. Thus, it can be interpreted that 72 percent of the variance (changes) in somatoform symptoms is predicted by the variables of problem-focused coping strategies, emotion-focused coping strategies, and emotional dysregulation. Additionally, 54.4 percent of the variance in emotional dysregulation is estimated by problem-focused coping strategies and emotion-focused coping strategies.

Table 5: Results related to the coefficient of determination of dependent variables

Independent Variables	R^2	Result
Emotional Dysregulation	0.544	Satisfactory
Somatoform Symptoms	0.720	Satisfactory

The findings in Table 6 show that the Q^2 values for the endogenous variables of the model, i.e., emotional dysregulation (0.146) and somatoform symptoms (0.358), are positive and calculated at an acceptable level, indicating the model's acceptable predictive power for the mentioned variables.

Table 6: Results related to the model's predictive power for dependent variable

Independent Variables	Q^2	Result
Emotional Dysregulation	0.146	Satisfactory
Somatoform Symptoms	0.358	Satisfactory

As observed in Table 7, the effect size of emotion-focused coping strategies on emotional dysregulation (0.293) is lower than the effect size of problem-focused coping strategies (0.340). Furthermore, the effect size of emotional dysregulation on somatoform symptoms (0.70) is at a higher level compared to the effect size of the other two variables.

Table 7: Results related to the effect size of independent variables on the dependent variable

Path: Independent Variable → Dependent Variable	f^2 Independent Variable	Result
Problem-Focused Strategy → Emotional Dysregulation	0.340	Satisfactory
Emotion-Focused Strategy → Emotional Dysregulation	0.293	Satisfactory

Emotional Dysregulation → Somatoform Symptoms	0.700	Satisfactory
Problem-Focused Strategy → Somatoform Symptoms	0.134	Satisfactory
Emotion-Focused Strategy → Somatoform Symptoms	0.125	Satisfactory

The results related to the variance inflation factor (VIF) of the independent variables are shown in Table 8. The VIF value for the independent variables is estimated to be less than the threshold of 5, indicating no multicollinearity issues among the data. In fact, the results of Table 8 indicate no multicollinearity problem.

Table 8: Results related to the variance inflation factor of independent variables

Path: Independent Variable → Dependent Variable	VIF Independent Variable	Result
Problem-Focused Strategy → Emotional Dysregulation	1.281	Less than 5 and acceptable
Emotion-Focused Strategy → Emotional Dysregulation	1.281	Less than 5 and acceptable
Emotional Dysregulation → Somatoform Symptoms	2.191	Less than 5 and acceptable
Problem-Focused Strategy → Somatoform Symptoms	1.717	Less than 5 and acceptable
Emotion-Focused Strategy → Somatoform Symptoms	1.657	Less than 5 and acceptable

As observed in Table 9, the GOF criterion value is calculated to be 0.487, indicating a strong overall fit for the research model. Therefore, it can be inferred that the proposed model has a satisfactory fit, and the collected data could adequately cover the designed model and validate it with high power.

Table 9: Results of the overall model fit with the GOF criterion

0.426	0.558
<i>GOF = 0.487</i>	

The values 0.01, 0.25, and 0.36 indicate poor, moderate, and strong fit, respectively.

Table 10 shows the direct effects between the research variables. Considering that the t-value is greater than 1.96 and the significance level (0.00) is less than 0.05, it can be concluded that this path coefficient is significant at the 0.05 error level. Five research hypotheses are confirmed.

Table 10: Direct effects between research variables

Research Hypotheses	Direct Paths	β	T_value	Significance Level	Result
1. There is a negative relationship between Problem-Focused Strategies and emotional dysregulation.	Problem-Focused Strategy → Emotional Dysregulation	-0.446	9.178	0.001	Confirmed
2. There is a positive relationship between Problem-Focused Strategies and emotional dysregulation.	Emotion-Focused Strategy → Emotional Dysregulation	0.414	7.787	0.001	Confirmed
3. There is a negative relationship between Problem-Focused Strategies and emotional dysregulation.	Problem-Focused Strategy → Somatoform Symptoms	-0.128	2.789	0.005	Confirmed
4. There is a positive relationship between Problem-Focused Strategies and emotional dysregulation.	Emotion-Focused Strategy → Somatoform Symptoms	0.108	2.462	0.014	Confirmed
5. There is a positive relationship between Problem-Focused Strategies and emotional dysregulation.	Emotional Dysregulation → Somatoform Symptoms	0.688	15.201	0.001	Confirmed

Discussion and Conclusion

The findings of the current study indicated a significant inverse and negative relationship between Problem-Focused Strategies and emotional dysregulation. This result is consistent with a body of previous research that has demonstrated a clear link between the use of problem-focused coping and better emotional regulation abilities and psychological balance (Cooley et al., 2022; Teixeira et al., 2022). To explain this finding, it can be stated that Problem-Focused Strategies have a significant impact on emotional dysregulation because they directly address the fundamental factors involved in this condition and provide individuals with effective tools and mechanisms to better control their emotions. Specifically, Problem-Focused Strategies lead to the recognition of an individual's emotions; in fact, they help individuals better understand and comprehend their own emotional states. This enhanced emotional awareness is a core component of effective emotional management and can directly counteract the deficits seen in emotional dysregulation (Söğüt et al., 2022).

The regulatory benefits of problem-focused coping can be understood through several interconnected mechanisms that enhance an individual's executive and emotional control. First, these strategies help individuals determine their priorities when faced with different tasks and issues, an act of organization that can significantly reduce underlying stress and anxiety. They also foster effective communication skills, which enable individuals to choose the best interaction strategies and prevent emotional conflicts that could otherwise trigger dysregulation. Furthermore, problem-focused approaches promote more careful and analytical decision-making, which serves as a buffer against making impulsive choices based on unstable emotions. This process of organized execution and effective problem-solving not only increases personal effectiveness and performance but can also bolster self-confidence and self-esteem as individuals successfully overcome challenges (Cole, 2019; Riediger & Bellintier, 2022). Ultimately, by helping individuals manage their negative emotions more effectively, problem-focused strategies lead to better life experiences, improve personal and professional quality of life, and prevent the negative impact of emotional dysregulation (Heydari, 2017).

The present study's second major finding revealed a significant positive relationship between emotion-focused strategies and emotional dysregulation, indicating that greater use of these strategies was associated with higher levels of dysregulation. This result is consistent with previous research highlighting that a reliance on certain emotion-focused coping methods is often linked to poorer regulatory outcomes (Bud, 2023; Frei, 2020).

The reason for this connection can be explained by the nature of the strategies often employed under the umbrella of emotion-focused coping. While these strategies broadly aim to manage emotional responses to stress (Frei, 2020), individuals already struggling with emotional dysregulation—who by definition exhibit intense reactions and difficulty modulating their emotions—may be particularly susceptible to using maladaptive forms such as avoidance or suppression. Relying solely on these specific strategies prevents the proper processing of feelings, which can lead to an accumulation of unprocessed emotions. This paradoxically makes regulating subsequent emotional responses even more difficult in the long run, thereby creating a reinforcing cycle where ineffective coping deepens emotional dysregulation. This pattern is frequently observed in various clinical conditions associated with high emotional lability (Boccagno & Hooley, 2023; Bud, 2023).

The present study demonstrated a significant negative relationship between Problem-Focused Strategies and somatoform symptoms, suggesting that the use of these strategies can help reduce such symptoms. This finding is consistent with the results of previous research, which has also found that employing problem-focused coping when dealing with emotional and physical problems is associated with a better ability to cope with stress and an improved quality of life (Chen et al., 2022; Frei et al., 2020; Kozusznik et al., 2021). The explanation for this relationship is twofold. First, these strategies operate by directly targeting and managing the triggering factors of somatic symptoms, which are often rooted in stress, psychological pressure, or other psychosocial issues. By actively solving the underlying problems, the source of the distress is diminished, which in turn can lead to a reduction in its physical manifestation. Second, the successful application of Problem-Focused Strategies may enhance an individual's self-confidence. As individuals experience success in solving their problems, they are likely to feel a greater sense of mastery and control, which can reduce the anxiety and worry that often accompany and exacerbate somatoform symptoms (Bekaroğlu & Yılmaz, 2023; Dahabre, 2022; Weijters, 2021).

This effect can be further understood by considering that many somatoform symptoms, such as tension headaches, muscle pain, and abdominal discomfort, are often directly exacerbated or even caused by stress. Problem-Focused Strategies, by their very nature, concentrate on identifying and solving the problems that generate this stress. As the underlying stressor is addressed and its associated psychological pressure decreases, the physical symptoms tied to that stress may also naturally diminish.

Additionally, these strategies inherently involve logical thinking and systematic decision-making, which can indirectly improve an individual's ability to manage their emotions more effectively. When emotions are better regulated, there can be a corresponding reduction in the physical symptoms that arise from emotional distress. This process encourages a broader shift towards a positive and solution-focused mindset, moving individuals away from avoidant or unhealthy coping mechanisms. Instead, they are encouraged to face problems directly and find healthier, more adaptive ways to manage life's adversities. In summary, Problem-Focused Strategies can help individuals manage and reduce somatoform symptoms by directly addressing the underlying stressors and challenges that cause or worsen these symptoms (Cohen-Biton et al., 2023; Weijters, 2021).

The present study also showed a significant positive relationship between the use of Emotion-Focused Strategies and the severity of somatoform symptoms. This finding aligns with previous research suggesting that a reliance on certain types of emotion-focused coping can unintentionally lead to an increase in physical symptoms (Gök & Eroğlu, 2019; Teixeira et al., 2022). The explanation for this is that some emotion-focused strategies, particularly those involving rumination or symptom monitoring, may increase anxiety by heightening the individual's focus on negative emotions and worries, which in turn can lead to a psychophysiological exacerbation of somatoform symptoms (Teixeira et al., 2022). Furthermore, when these coping strategies aim solely to manage the immediate feeling of distress without addressing the underlying emotional root cause, they often fail to provide a long-term solution. This can lead to a frustrating cycle where individuals continue to experience physical symptoms despite their efforts, often resulting in increased medical visits and higher healthcare costs (Gök & Eroğlu, 2019).

Finally, in line with the study's primary hypotheses, a strong positive and direct relationship was found between emotional dysregulation and somatoform symptoms. This finding is robustly supported by

previous research, which consistently identifies emotional dysregulation as a key factor in the development and maintenance of somatic conditions (Schnabel, Petzke, 2022; Schnabel, Schulz, 2022; Yang, 2020). When individuals with a propensity for somatic symptoms also experience emotional dysregulation, their condition can be significantly exacerbated and treatment becomes more complicated. The primary mechanism thought to underlie this relationship is the process of somatization itself: when individuals struggle to cognitively process and manage their emotions, the intense affective energy may be channeled into the body, manifesting as an intensification of physical symptoms such as pain, fatigue, or autonomic arousal (Schnabel, Petzke, 2022; Yang, 2020).

Furthermore, the link between emotional dysregulation and physical symptoms can be explained by two complementary pathways: one involving attention and the other, physiology. Cognitively, emotional dysregulation can lead to increased sensitivity and a heightened attentional bias towards bodily sensations. When individuals are emotionally distressed, they may focus on any minor bodily discomfort or sensation, which leads to an increased perception of somatic symptoms and can, in turn, exacerbate the experienced physical symptoms. Simultaneously, the intense emotional reactions that often characterize dysregulation—such as anxiety, anger, sadness, and despair—have direct physiological consequences. For example, an individual experiencing significant anxiety may develop physical symptoms such as a rapid heartbeat, shortness of breath, or muscle tension as a result of their emotional distress. This interplay, where emotional distress both directs attention to the body and creates new physical sensations, helps explain how dysregulated emotions become embodied as physical symptoms (Garnefski, 2017; Jungmann, 2022; Mazaheri, 2015; Okur Güney, 2019).

Despite the important findings of this study, several limitations should be acknowledged. First, the research was conducted on individuals with somatoform symptoms referring to hospitals in Tehran; therefore, caution should be exercised when generalizing the results to other cities or populations. Second, as this study relied on self-report measures, the accuracy of the data may be influenced by factors such as a participant's limited access to their own emotional states or self-presentation biases. Future research could benefit from incorporating multi-method assessments to provide a more comprehensive understanding of these variables.

Conclusion

The present research, after delineating a model to determine the relationship between coping strategies and somatoform symptoms, clarified the relationship between coping strategies and emotional dysregulation, as well as the relationship between emotional dysregulation and somatoform symptoms. In accordance with the research hypotheses, the results showed that Problem-Focused Strategies have a significant negative impact on emotional dysregulation, Emotion-Focused Strategies have a significant positive impact on emotional dysregulation, Problem-Focused Strategies have a significant negative impact on somatoform symptoms, Emotion-Focused Strategies have a significant positive impact on somatoform symptoms, and emotional dysregulation has a significant positive impact on somatoform symptoms. The fit indices indicated the confirmation and fit of the mentioned models. According to the sub-findings, all sub-models also had a satisfactory fit, and the mediating role of emotional dysregulation components in the relationship between coping strategies and somatoform symptoms was also confirmed.

Research Suggestions

1. Conducting multiple experimental studies to investigate the causal relationship between the impact of coping strategies on somatoform symptoms and emotional dysregulation, as well as the impact of emotional dysregulation on somatoform symptoms in individuals with somatoform symptoms.
2. Recommendation to increase the sample size and expand the research scope to enhance the generalizability of the results and ensure their scientific validity.
3. Using better and more accurate measurement tools for the variables under study, especially regarding somatoform symptoms and emotional dysregulation.
4. Conducting research to investigate other mediating factors that may influence the relationship between coping strategies and somatoform symptoms with emotional dysregulation outcomes.
5. Investigating moderating variables that may influence the relationship between coping strategies and somatoform symptoms with emotional dysregulation mediators.
6. Conducting comparative studies to compare coping strategies and somatoform symptoms in individuals with somatoform symptoms with those without these symptoms.

Practical Suggestions

1. Implementing interventions based on coping strategies to reduce somatoform symptoms, considering the role of emotion regulation therapy in individuals with somatoform symptoms.
2. Implementing interventions based on metacognitive therapy and emotion regulation to reduce somatoform symptoms in individuals with somatoform symptoms.
3. Organizing educational programs for individuals with somatoform symptoms, including training programs on effective coping skills.
4. Recommending psychological counseling as a source of support and treatment for individuals with somatoform symptoms.

References

- Attanasio, V., Andrasik, F., Blanchard, E. B., & Arena, J. G. (1984). Psychometric properties of the SUNYA revision of the Psychosomatic Symptom Checklist. *Journal of behavioral medicine*, 7, 247-257.
- Bekaroğlu, E. & Yılmaz, T. (2023). How Perceptions of Parents' Parenting Behaviors Pave the Way to Somatic Symptoms: The Mediating Role of Emotion Regulation Among Adults. *Psychological Reports*, 00332941231191722.
- Beutel, M. E., Wiltink, J., Ghaemi Kerahrodi, J., Tibubos, A. N., Brähler, E., Schulz, A., ... & Henning, M. (2019). Somatic symptom load in men and women from middle to high age in the Gutenberg Health Study-association with psychosocial and somatic factors. *Scientific reports*, 9(1), 4610.
- Boccagno, C. & Hooley, J. M. (2023). Emotion Regulation Strategy Choices Following Aversive Self-Awareness in People with Nonsuicidal Self-Injury or Indirect Self-Injury. *Journal of Emotion and Psychopathology*, 1(1), 8-22.
- Bonanno, G. A., & Burton, C. L. (2013). Regulatory flexibility: An individual differences perspective on coping and emotion regulation. *Perspectives on psychological science*, 8(6), 591-612.
- Bud, S. Nechita, D. & Szentagotai Tatar, A. (2023). Emotion regulation strategies in borderline personality disorder: a meta-analysis. *Clinical Psychologist*, 1-18.

- Busch, I. M., Moretti, F., Purgato, M., Barbui, C., Wu, A. W., & Rimondini, M. (2020). Psychological and psychosomatic symptoms of second victims of adverse events: a systematic review and meta-analysis. *Journal of patient safety*, 16(2), e61-e74.
- Chishti, S. H., & Rafiq, M. (2019). Psychosocial Issues, coping strategies and psychological symptoms of hirsute women. *Pakistan Journal of Medical Research*, 58(3), 141-148.
- Cohen-Biton, L. Buskila, D. & Nissanholtz-Gannot, R. (2023). Problem-oriented coping and resilience among Fibromyalgia patients who live under security threats and have undergone a Fibrotherapy intervention program. *Psychology, Health & Medicine*, 1-14.
- Cole, P. M. Ramsook, K. A. & Ram, N. (2019). Emotion dysregulation as a dynamic process. *Development and Psychopathology*, 31(3), 1191 -1201.
- Cooley, J. L., Fite, P. J., & Hoffman, L. (2022). Interactive effects of coping strategies and emotion dysregulation on risk for peer victimization. *Journal of applied developmental psychology*, 78, 101356.
- Cooley, J. L., Blossom, J. B., Tampke, E. C., & Fite, P. J. (2022). Emotion regulation attenuates the prospective links from peer victimization to internalizing symptoms during middle childhood. *Journal of Clinical Child & Adolescent Psychology*, 51(4), 495-504.
- Dahabre, R. Roziner, I. Bentley, G. Poikonen-Saksela, P. Mazzocco, K. Sousa, B. & Pat-Horenczyk, R. (2022). The moderating role of coping flexibility in reports of somatic symptoms among early breast cancer patients. *Social science & medicine*, 308, 115219.
- Ebrahimi, A., Rief, W., Mirshahzadeh, P., Zanjani, H. A., Dehsorkhi, H. N., Roohafza, H., ... & Adibi, P. (2018). Psychometric properties of the Persian version of screening for Somatic Symptom Disorders-7 (SOMS-7). *Iranian journal of psychiatry*, 13(4), 264.
- Edgcomb, J. B., & Kerner, B. (2018). Predictors and outcomes of somatization in bipolar I disorder: a latent class mixture modeling approach. *Journal of affective disorders*, 227, 681-687.
- Farahi, S., Naziri, G., Davodi, A., & Fath, N. (2023). Investigation of Psychometric Properties of Psychosomatic Complaints Scale among Individuals with Somatic Symptom Disorder. *International Journal of Applied Behavioral Sciences*, 10(2), 27-35.
- Firouzi, R., Tizdast, T., & Khalatbari, J. (2019). Ghorban Shiroudi Sh. The Relationship Between Illness Perception and Difficulty in Emotion Regulation with the Mediating Role of Quality of Marital Life in Women With Breast Cancer. *Avicenna J of Neuropsychopharmacology*. 2019; 6 (4): 185-194.
- Frei, J. M. Sazhin, V. Fick, M. & Yap, K. (2020). Emotion-oriented coping style predicts self-harm in response to acute psychiatric hospitalization. *Crisis*.
- Garnefski, N. van Rood, Y. De Roos, C. & Kraaij, V. (2017). Relationships between traumatic life events, cognitive emotion regulation strategies, and somatic complaints. *Journal of clinical psychology in medical settings*, 24, 144-151.
- Gök, F. & Eroğlu, M. Z. (2019). The expression of emotion and coping with stress in major depressive disorder patients with somatic symptoms. *Psychiatry and Clinical Psychopharmacology*, 29, 301-303.
- Gratz, K. L. & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of psychopathology and behavioral assessment*, 26, 41-54.
- Gratz, K. L., Weiss, N. H., McDermott, M. J., Dilillo, D., Messman-Moore, T., & Tull, M. T. (2017). Emotion dysregulation mediates the relation between borderline personality disorder symptoms and later physical health

- symptoms. *Journal of personality disorders*, 31(4), 433-448.
- Guadagnoli, E., & Velicer, W. F. (1988). Relation of sample size to the stability of component patterns. *Psychological bulletin*, 103(2), 265.
- Hammarström, P., Rosendahl, S., Gruber, M., & Nordin, S. (2023). Somatic symptoms in burnout in a general adult population. *Journal of Psychosomatic Research*, 168, 111217.
- Heydari, M. Razban, F. Mirzaei, T. & Heidari, S. (2017). The effect of problem oriented coping strategies training on quality of life of family caregivers of elderly with Alzheimer. *Asian Journal of Nursing Education and Research*, 7(2), 168-172.
- Irie, N., Morijiri, Y., & Yoshie, M. (2023). Symptoms of and coping strategies for music performance anxiety through different time periods. *Frontiers in Psychology*, 14, 1138922.
- Jungmann, S. M. Wagner, L. Klein, M. & Kaurin, A. (2022). Functional somatic symptoms and emotion regulation in children and adolescents. *Clinical Psychology in Europe*, 4(2).
- Khosravani, V. Alvani, A. Bastan, F. S. Ardakani, R. J. & Akbari, H. (2016). The alexithymia, cognitive emotion regulation, and physical symptoms in Iranian asthmatic patients. *Personality and Individual Differences*, 101, 214-219.
- Kinnunen, P., Laukkanen, E., & Kylmä, J. (2010). Associations between psychosomatic symptoms in adolescence and mental health symptoms in early adulthood. *International journal of nursing practice*, 16(1), 43-50.
- Koh, K. B. (2013). Somatization and psychosomatic symptoms. *Springer*, 201-210.
- Kozusznik, M. W., Puig-Perez, S., Kozusznik, B., & Pulpulos, M. M. (2021). The relationship between coping strategies and sleep problems: The role of depressive symptoms. *Annals of Behavioral Medicine*, 55(3), 253-265.
- Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.
- Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.
- Mazaheri, M. (2015). Difficulties in emotion regulation and mindfulness in psychological and somatic symptoms of functional gastrointestinal disorders. *Iranian journal of psychiatry and behavioral sciences*, 9(4).
- Nazzal, Z., Maraqa, B., Abu Zant, M., Qaddoumi, L., & Abdallah, R. (2021). Somatic symptom disorders and utilization of health services among Palestinian primary health care attendees: a cross-sectional study. *BMC Health Services Research*, 21, 1-9.
- Okur Güney, Z. E. Sattel, H. Witthöft, M. & Henningsen, P. (2019). Emotion regulation in patients with somatic symptom and related disorders: A systematic review. *PloS one*, 14(6), e0217277.
- Okur Güney, Z. Sattel, H. Cardone, D. & Merla, A. (2015). Assessing embodied interpersonal emotion regulation in somatic symptom disorders: a case study. *Frontiers in Psychology*, 6, 68.
- Pohontsch, N. J., Zimmermann, T., Lehmann, M., Rustige, L., Kurz, K., Löwe, B., & Scherer, M. (2021). ICD-10-Coding of Medically Unexplained Physical Symptoms and Somatoform Disorders—A Survey With German GPs. *Frontiers in Medicine*, 8, 598810.
- Prosen, S., & Vitulić, H. S. (2016). Emotion regulation and coping strategies in pedagogical students with different attachment styles. *Japanese Psychological Research*, 58(4), 355-366.
- Raasthøj, I. Rasmussen, S. Carstensen, T. B. W. Wehberg, S. Rosendal, M. & Jarbøl, D. E. (2023). Coping strategies among individuals with multiple physical symptoms: A general population-based cross-sectional study. *Journal of Psychosomatic Research*, 165, 111140.

- Riediger, M. & Bellingtier, J. A. (2022). Emotion regulation across the lifespan. *The Oxford handbook of emotional development*, 92-109.
- Rief, W. & Barsky, A. J. (2005). Psychobiological perspectives on somatoform disorders. *Psychoneuroendocrinology*, 30(10), 996-1002.
- Rief, W., & Broadbent, E. (2007). Explaining medically unexplained symptoms-models and mechanisms. *Clinical psychology review*, 27(7), 821-841.
- Rief, W., & Hiller, W. (2003). A new approach to the assessment of the treatment effects of somatoform disorders. *Psychosomatics*, 44(6), 492-498.
- Sauceda, J. A., Patel, A. R., Santiago-Rodriguez, E. I., Garcia, D., & Lechuga, J. (2021). Testing for differences in the reporting of somatic symptoms of depression in racial/ethnic minorities. *Health Education & Behavior*, 48(3), 260-264.
- Schnabel, K. Petzke, T. M. & Witthöft, M. (2022). The emotion regulation process in somatic symptom disorders and related conditions-A systematic narrative review. *Clinical Psychology Review*, 102196.
- Schnabel, K. Schulz, S. M. & Witthöft, M. (2022). Emotional reactivity, emotion regulation, and regulatory choice in somatic symptom disorder. *Psychosomatic Medicine*, 84(9), 1077-1086.
- Selvi, K. & Bozo, Ö. (2023). Emotion Regulation Difficulties as Moderators in the Relation Between Perceived Stress and the Severity of Somatic Symptoms. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 41(4), 967-985.
- Smrtnik Vitulić, H. & Prosen, S. (2016). Strategije suočavanja i emocionalne regulacije u odrasloj dobi: specifičnosti s obzirom na dob, spol i razinu obrazovanja. *Društvena istraživanja: časopis za opća društvena pitanja*, 25(1), 43-62.
- Söğüt, M. Yedidağ, E. Ray-Yol, E. Özdemir, A. B. & Altan-Atalay, A. (2022). Problem Orientation and Psychological Distress Among Adolescents: Do Cognitive Emotion Regulation Strategies Mediate Their Relationship? *Psychological Reports*, 125(5), 2317-2336.
- Tacchini, G., & Vismara, M. (2019). Generalized anxiety disorder, somatization, and emotional dysregulation: A possible link. *Clinical Cases in Psychiatry: Integrating Translational Neuroscience Approaches*, 209-227.
- Teixeira, R. J. Brandão, T. & Dorés, A. R. (2022). Academic stress, coping, emotion regulation, affect and psychosomatic symptoms in higher education. *Current Psychology*, 41(11), 7618-7627.
- Thompson, E. L., Broadbent, J., Fuller-Tyszkiewicz, M., Bertino, M. D., & Staiger, P. K. (2019). A network analysis of the links between chronic pain symptoms and affective disorder symptoms. *International journal of behavioral medicine*, 26, 59-68.
- Tominaga, T. Choi, H. Nagoshi, Y. Wada, Y. & Fukui, K. (2013). Relationship between alexithymia and coping strategies in patients with somatoform disorder. *Neuropsychiatric disease and treatment*, 55-62.
- Trull, T. J., Carpenter, R. W., & Widiger, T. A. (2013). Personality disorders. *Handbook of psychology: Clinical psychology*, 94-120.
- Weijters, R. M. M. Zamorano, M. A. de Vroege, L. & van Boxtel, G. (2021). Coping Styles, Objective and Subjective Cognitive Complaints in Patients with Somatic Symptom and Related Disorders.
- Witthöft, M., Hiller, W., Loch, N., & Jasper, F. (2013). The latent structure of medically unexplained symptoms and its relation to functional somatic syndromes. *International journal of behavioral medicine*, 20, 172-183.
- Yang, Y. (2020). Aggression and somatic symptoms: The role of emotion regulation and distress tolerance. *International*

Journal of Behavioral Medicine, 27, 466-474.

Ying-Chih, C., Yu-Chen, H., & Wei-Lieh, H. (2020). Heart rate variability in patients with somatic symptom disorders and functional somatic syndromes: A systematic review and meta-analysis. *Neuroscience & Biobehavioral Reviews*, 112, 336-344.