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Predicting Psychological Hardiness Based on Self-Regulation and Stress Coping Strategies

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ABSTRACT

Objective: The current investigation was carried out in order to explore the anticipation of psychological hardiness based on the elements of self-regulation of emotions and stress coping strategies.

Methods: The population under examination in this particular study encompassed all female individuals who sought assistance at the Health House located in the 6th precinct of Tehran during the 2023. A total of 80 female participants seeking aid at the health facility in the 6th district of Tehran were included in the sample, selected through purposive sampling techniques. The data collection instruments employed in this study were the stress coping strategies questionnaire developed by Lazarus and Folkman (1998), Cognitive Emotion Regulation Questionnaire (CERQ) developed by Garnefski and Kraaij (2007) and Kobasa et al. hardiness questionnaire (1985). The analysis of the research data involved the utilization of Pearson's correlation coefficient and the multivariate regression technique.

Results: The outcomes of the study suggest that the components of emotional self-regulation and stress coping strategies have the ability to predict psychological hardiness ($p < 0.05$).

Conclusions: Based on the outcomes derived from the study, it is plausible to infer that the components related to emotional self-regulation in conjunction with stress coping mechanisms serve as reliable predictors of an individual's psychological hardiness.

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Introduction

Psychological hardiness is a personality trait that an individual possesses, enabling them to effectively navigate and resolve problems as well as interpersonal stressors ([Romanova et al., 2019](#)). This trait serves as a source of resilience, acting as a shield when encountering adversities. To elaborate, psychological hardiness encompasses a collection of personality characteristics that function as a pivotal source of resilience when confronting challenging life circumstances. As described by Kobasa and his research team, hardiness comprises a complex interplay of three interconnected components, namely, control, commitment and challenge ([Kobasa et al., 1982](#); [Sandvik et al., 2020](#)). In her seminal work, Kobasa deduced that individuals who confront elevated levels of stress and tension without succumbing to illness possess a distinct personality framework compared to those who exhibit vulnerability in stressful environments ([Kobasa et al., 1982](#)). This unique personality trait, termed Hardiness in the literature, was introduced by Kobasa to delineate this contrasting psychological profile ([Mashhadhi et al., 2021](#)). Moreover, the selection of coping mechanisms is contingent upon an individual's specific personality traits, as these traits influence the adoption of varying coping strategies ([Bartley & Roesch, 2011](#)). Notably, [Folkman et al. \(1986\)](#) have elucidated coping strategies as an array of behavioral and cognitive responses aimed at mitigating the strains imposed by stressful circumstances.

In conjunction with psychological hardiness, another significant variable crucial for enhancing individuals' performance and fostering their achievements across diverse domains is self-regulation. Individuals inherently aspire to cultivate positive emotions, happiness, and gratification while endeavoring to minimize negative emotional experiences ([Mashhadhi et al., 2021](#)). Emotions constitute a developmental construct that profoundly influences decision-making processes, a focal point of interest for cognitive psychologists. These scholars assert that individuals exhibit gender disparities in decision-making patterns and neurological responses during emotional contexts. Research findings have underscored that women exhibit heightened sensitivity in adverse situations, attributing these variations to the functional variances in the frontal lobe cortex and positing a biological underpinning to this phenomenon ([Almasri et al., 2024](#)).

Cognitive and emotional self-regulation encompass a total of four maladaptive strategies, which consist of blaming oneself and others, rumination, and catastrophizing, alongside five adaptive

strategies, including positive refocusing, positive reevaluation, perspective taking, refocusing on planning, and acceptance. These strategies are specifically defined as conscious cognitive mechanisms for self-regulation purposes, aiming to assist individuals in effectively managing their emotions and feelings while steering clear of overwhelming pressure, as elucidated by [Wang et al. \(2021\)](#). The research conducted by [Lu et al. \(2019\)](#) indicated that women with low blood pressure exhibited a higher mean score in utilizing emotion-oriented stress coping strategies and psychological toughness in comparison to women with high blood pressure, shedding light on the intricate relationship between coping mechanisms and physiological indicators.

Furthermore, [Lenane et al. \(2019\)](#) underscored the importance of differentiating between uncompromising cognitive strategies such as self-blame, blaming others, catastrophizing, and rumination, which tend to be favored by certain individuals, and compromised strategies like perspective taking, positive refocusing, positive reappraisal, acceptance, and refocusing on planning, which are associated with lower levels of stress. Emotional self-regulation emerges as a pivotal element in maintaining mental health and overall well-being, with the effective utilization of coping strategies playing a significant role in preserving emotional equilibrium even amidst challenging circumstances, as noted by Troy and colleagues in 2010 and cited by Basharat et al. in 2015. Although individuals with high psychological toughness may find it comparatively easier to withstand adverse experiences, the potential link between psychological hardiness, coping strategies, stress levels, and self-regulation components remains unexplored in existing literature. Thus, the current study seeks to address this gap by investigating whether a discernible relationship exists among psychological toughness, coping strategies, stress levels, and self-regulation components.

Material and Methods

The present research method was descriptive-correlation type. The population studied in the current research included all the girls who referred to the Health House in Tehran's 6th district in 2023. In this research, the statistical sample includes 80 girls who referred to the Health House in Tehran's 6th district, which was conducted through a purposive sampling method.

Instruments

Ways of Coping Questionnaire (WCQ): This questionnaire is comprised of a total of 66 questions, encompassing both emotion-oriented coping components and problem-oriented coping components. The allocation of marks for each question varies, with one mark, typically two marks, and often three marks being granted according to the study conducted by [Parker et al. \(1993\)](#). In the evaluation of the questionnaire's internal consistency among female high school students in Sabzevar, Cronbach's alpha was employed. The coefficients obtained for problem-oriented coping and emotion-oriented coping were reported as 0.70 and 0.69, respectively, as indicated by [Mansouri et al. \(2019\)](#). Through an examination of the questionnaire's validity using correlation coefficients, it was found that the correlation coefficient relating to organizational commitment and stress coping strategies stood at 0.33. Importantly, this correlation was deemed statistically significant at the 0.001 level, which serves as an indication of the questionnaire's convergence validity, according to [Momeni et al. \(2023\)](#).

Kobasa's Hardiness Questionnaire: This scale comprises a total of 50 items, divided into three distinct subscales focusing on control, commitment, and struggle, each consisting of 17, 16, and 17 items, respectively ([Kobasa et al., 1985](#)). The validity and reliability of Kobasa's hardiness scale have been extensively verified through numerous domestic and international research studies. For instance, [Maddi and Khoshaba \(1994\)](#) disclosed a Cronbach's alpha coefficient of 0.75. Similarly, in a study conducted by [Rezaei Gazki et al. \(2019\)](#) within the country, employing Cronbach's alpha coefficient, the overall reliability coefficient of the scale stood at 0.84, with individual reliability coefficients for challenge, control, and commitment gauging at 0.66, 0.68, and 0.75, respectively.

Emotion Self-Regulation Questionnaire (CERQ): This self-report instrument was developed by [Garnefski and Kraaij \(2006\)](#), encompassing a total of 36 items. The various subscales within this questionnaire aim to assess 9 cognitive strategies, namely self-blame, acceptance, rumination, positive refocusing, refocusing on planning, positive reappraisal, perspective taking, catastrophizing, and blaming others. The validity and reliability of this questionnaire were meticulously examined, with the Persian version being validated by ([Norouzi & Hasani, 2022](#)). The outcomes of this validation process underscored the strong validity of the Persian iteration of the emotional self-regulation questionnaire, denoted as "CERQ-P." Notably, the Cronbach's alpha coefficient ranged between 0.76 and 0.89, averaging at 0.83.3, while all retest coefficients

exhibited significance, and the majority of correlations among the material set surpassed the threshold of 0.4. Furthermore, the Cronbach's coefficient computed for the entire questionnaire was 0.81, with the two reappraisal factors yielding coefficients of 0.79 and 0.68, respectively. Additionally, significant relationships were observed between the reappraisal and suppression factors and various subscales measuring positive and negative emotions, anxiety symptoms (excluding obsessive-compulsive symptoms), and depression, with correlations proving statistically significant at the 0.01 and 0.05 error levels. Based on the findings derived from the present investigation, it is plausible to assert that the Persian adaptation of the questionnaire demonstrated commendable psychometric properties.

Ethical considerations: This study was designed and conducted with careful attention to key ethical principles. The research involved human participants, specifically female individuals seeking assistance at a health facility in Tehran, Iran. As this population may have been in a vulnerable state, the researchers took several measures to protect the rights, welfare, and dignity of the participants. All participants provided freely given, informed consent prior to engaging in the study as well. The consent form was explained thoroughly to ensure participants fully understood the purpose, procedures, risks, and voluntary nature of the research. Participants were informed of their right to withdraw at any time without penalty.

Results

Pearson's correlation coefficient and multivariate regression were used simultaneously to investigate the research hypotheses. To test the first hypothesis of the research, there is a relationship between emotional self-regulation and psychological hardiness.

Table 1. Pearson correlation coefficient of emotional self-regulation and psychological hardiness

Predictor	Correlation coefficient	Psychological hardiness
Emotion self-regulation	R	-0.846
	P	0.001

The test results in Table 2 show that the significance level of Pearson's correlation coefficient to check this hypothesis is equal to 0.001. Therefore, at the confidence level of 95%, the research

hypothesis is confirmed. As a result, it can be said that there is a significant relationship between stress coping strategies and psychological hardiness.

Table 2. Pearson correlation coefficient of stress coping strategies and psychological hardiness

Predictor	Correlation coefficient	Psychological hardiness
Psychological hardiness	R	-0.821
	P	0.001

As shown in Table 3, the adjusted R^2 value is equal to 0.709, which shows that stress coping strategies can explain about 71% of the changes in psychological hardiness. Durbin-Watson test results confirmed the independence of observations (independence of residual values or errors) from each other.

Table 3. Summary of the regression model

Model	R	R^2	Adj. R^2	Std. error	D-W
Value	0.855	0.731	0.709	0.128	1.90

In Table 4, the F value was reported as significant at the error level of 0.01, which indicates that the regression model has a good fit. Based on this, the research hypothesis is confirmed; It means that stress coping strategies can predict psychological hardiness.

Table 4. Sum of squares test and F value

Model	SS	DF	MS	F	P
Regression	13.154	2	6.577	395.716	0.001
Residual	1.280	77	0.017		
Total	14.43	79			

In Table 5, the Beta coefficient for emotion-oriented strategies is equal to -0.199. In the mentioned table, the t value for this variable was significant at the error level of 0.05. It means that with an increase of one standard deviation in emotion-oriented strategies, psychological hardiness decreases by 0.199 standard deviations. In Table 6, the Beta coefficient for problem-oriented strategies is equal to -0.672.

Table 5. Standardized and unstandardized regression coefficient

Variable	Non-Standardized		Standardized	T	P
	B	Std. Error	Beta		
Constant	0.534	0.141	-	3.79	0.001
Emotion-oriented strategies	-0.190	-0.79	-0.199	-2.55	0.012
Problem-oriented strategies	-0.692	0.70	-0.672	-9.92	0.001

As shown in Table 6, which summarizes the statistics related to the model fit, the value of the multiple correlation coefficient (R) is equal to 0.870, which indicates the existence of correlation between the variables. R² shows the degree of explanation of the variance of the dependent variable by the independent variable. In the table below, the adjusted R² value is equal to 0.735, which shows that the components of self-regulation of emotion can explain about 73% of the changes in psychological toughness. Durbin-Watson test results confirmed the independence of observations (independence of residual values or errors) from each other. This statistic is 1.887 in the table.

Table 6. Summary of the regression model

Model	R	R ²	Adj. R ²	Std. error	D-W
Value	0.870	0.756	0.735	0.752	1.88

In Table 7, the F value was reported as significant at the error level of 0.05, which indicates that the regression model has a good fit. Based on this, the research hypothesis is confirmed; This means that the components of self-regulation of emotion can predict psychological hardiness.

Table 7. Sum of squares test and F value

Model	SS	DF	MS	F	P
Regression	29.75	9	3.306	5.83	0.001
Residual	39.63	70	0.566		
Total	69.38	79			

Discussion

The results of the present study showed that the components of self-regulation and strategies to deal with stress predict hardiness, although no research has been conducted with exactly the same purpose as the present study, but the background of the research shows the appropriate correlation of the model. The results of some studies conducted in this field confirm this finding such as [Mashhadhi et al. \(2021\)](#), [Lenane et al. \(2019\)](#) and [Lu et al. \(2019\)](#).

Developmental psychologists emphasize that caregivers play an essential role in emotional regulation of children ([Firouzi et al., 2020](#)). The first model (primary model) considers emotional regulation as a conscious and persistent process that it has introduced automatic emotional control of people. Some forms of emotional regulation according to psychological and neurobiological response systems, which include the purposeful control of behavior and attention, are consistent with this model ([Gross, 1998](#)). During emotional regulation, people may increase, maintain or decrease positive or negative emotions. Accordingly, emotional regulation requires changing emotional responses. These changes take place at the level of the type of emotions that people have, how they experience these emotions and how they express these emotions ([Gross, 1998](#)).

A person who believes that he is able to influence events and can control them, can be involved in his destiny and change it as he wishes. Also, these people have better performance in stressful environment and life and are less stressed and helpless. On the other hand, people who are at a low level of controllability always feel powerless and believe that others and society define their activities. In other words, they accept their fate and do not try to change it ([Kobasa et al., 1985](#)).

Considering the confirmation of the research hypothesis that there is a relationship between stress coping strategies and psychological hardiness, we can refer to the research of Boyle et al. has a positive hardiness is an important factor to deal with stress and pressure and increases the ability of people against various physical and mental diseases caused by job pressures ([Kobasa et al., 1982](#)).

The findings of this study indicate that emotional self-regulation and stress coping strategies are significant predictors of psychological hardiness among women seeking assistance at a health facility in Tehran. Psychological hardiness, characterized by resilience in the face of stress, is a crucial factor in mental well-being. The study revealed a positive relationship between the ability to regulate emotions and employ effective coping mechanisms in stressful situations, suggesting that individuals with strong emotional regulation skills and adaptive coping strategies are more likely to exhibit psychological hardiness.

The research highlights the importance of emotional self-regulation in managing stress and maintaining mental fortitude, as well as the critical role stress coping strategies play in this dynamic. These findings suggest that interventions designed to enhance emotional regulation and

equip individuals with effective stress management techniques may improve psychological hardiness, fostering greater resilience in stressful environments.

Moreover, the results have implications for mental health services, particularly for those supporting women in high-stress environments. By incorporating emotional self-regulation and stress coping strategies into therapeutic practices, health professionals may be able to improve the psychological resilience of their clients, thereby promoting overall well-being.

In conclusion, this study reinforces the value of integrating emotional self-regulation and stress coping mechanisms into strategies aimed at enhancing psychological hardiness. Further research may deepen our understanding of these relationships and support the development of targeted interventions for improving mental health outcomes.

Paying attention to the limitations of the research, one should be cautious in generalizing the results and wait for more studies in this field. Among these limitations, it can be mentioned that it was only conducted on girls in Tehran and caution should be taken from generalizing it to other cities, because cultural and gender differences may be effective in generalizing the results. and lack of access to the Iranian questionnaire.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Islamic Azad University.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. The author contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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