Journal Website

Structural Modeling of Psychological Maladjustment Based on Resilience with the Mediating Role of Ego Strength in Patients with Chronic Pain

Khadijeh. Gholami Gharahchenagh[1], Seyed Abbas. Haghayegh[2*], Sheyda. Jabalameli[2], Zohreh. Raeisi[3]

[1] PhD student, Department of Health Psychology, Najafabad Branch, Islamic Azad University, Najafabad, Iran
[2] Assistant Professor, Department of Psychology, Najafabad Branch, Islamic Azad University, Najafabad, Iran
[3] Associate Professor, Department of Psychology, Najafabad Branch, Islamic Azad University, Najafabad, Iran

* **Corresponding author email address**: Abbas_haghayegh@yahoo.com

A r t i c l e   I n f o

A B S T R A C T

Objective: This study aimed to model the structure of psychological maladjustment based on resilience with the mediating role of ego strength in patients suffering from chronic pain.

Methods and Materials: Given its purpose, this research is applied in nature, quantitative in its data collection method, and descriptive in its analysis, employing correlational design and structural equation modeling (SEM) techniques. The study population comprised all patients with chronic pain who visited specialized pain clinics in Tehran from February 2021 to May 2022. Using the Tabachnick and Fidell (2007) formula, a sample size of 330 was determined and selected via convenience sampling. The research instruments included the Psychological Adjustment Questionnaire (Rohner & Khaleque, 2005), the Resilience Scale (Connor-Davidson, 2003), and the Psychological Ego Strength Questionnaire (Marcia et al., 1997). Data analysis was performed in two stages: descriptive (central tendency and dispersion indices, skewness, and kurtosis) and inferential (structural equation modeling), using SPSS-V23 and LISREL-V8.8 software.

Findings: The results showed that the model fits well. Additionally, the results indicated a significant direct and indirect (through the mediating role of ego strength) relationship between resilience and psychological maladjustment in patients with chronic pain. The impact of resilience on psychological maladjustment, mediated by ego strength, was negatively significant at a rate of 0.95.

Conclusion: Considering the findings of this study, it can be concluded that ego strength, as a psychological capacity, and resilience are effective on social interactions and functioning. It is suggested that to improve the psychological adjustment of patients with chronic pain, efforts should be made to foster ego strength and resilience training.

Keywords: Psychological maladjustment, Resilience, Ego strength, Chronic pain.

1. Introduction

Chronic pain is a major public health concern, affecting up to 40% of young individuals (Law et al., 2022). According to some studies, chronic pain carries a significant personal and economic burden, impacting more than 30% of people worldwide. Unlike acute pain, chronic pain may be considered as a condition with therapeutic (e.g., remaining active despite pain) and psychological (e.g., pain acceptance and optimism) consequences (Cohen et al., 2021). Generally, pain is defined by the International Association for the Study of Pain as an unpleasant sensory or emotional experience in one or several parts of the body. Pain is divided into acute and chronic in terms of duration. Acute pain typically results from illness or injury and lasts less than 3 months. Chronic pain, on the other hand, is a type of pain that takes longer than the expected time to heal. This kind of pain persists for at least 3 months and may be associated with tissue damage and recur over time (Akbari et al., 2015). In fact, pain that has persisted for at least six months from its onset and continues every day or nearly every day despite treatments conducted in the past three months is referred to as chronic pain (Goli & Mirseify fard, 2021; Julaieha et al., 2020). Patients with chronic pain face significant emotional disturbances, including anxiety and distress, which, according to the pain control mechanism, lead to increased pain and symptom exacerbation. Anxiety associated with pain refers to a set of cognitive and manifest psychological-behavioral reactions that occur in response to pain or pain-related events (do Nascimento et al., 2020). By identifying factors that create, exacerbate, or even alleviate pain, psychological methods and treatments can be better selected, and ways to manage pain and self-care and adapt to pain and its consequences can be offered. In this context, the years 2001 to 2019 have been named the decade of pain control and research in the United States (Johannsen et al., 2018). Researchers agree that chronic pain is one of the most common and debilitating health-related issues (Greenwood, 2015). Due to the consequences of chronic pain, understanding psychological adaptation mechanisms has always been necessary (Julaieha et al., 2020). Adaptation refers to the sequential adjustment to changes and establishing a relationship between oneself and the environment in a way that maximizes self-realization along with social well-being. Adaptation means recognizing that every individual must pursue their goals within social and cultural frameworks. Thus, adaptation can be considered as an ability and a tool to cope with changing environmental and internal conditions. Psychological maladjustment causes individuals to face numerous problems in various situations and prevents them from exhibiting appropriate actions and behaviors in confronting new situations and conditions in order to provide suitable responses to existing stimuli, thereby having detrimental and destructive effects on psychological functioning and even the physical condition of individuals (Chen & Bonanno, 2020).

Every change in life affects individuals differently, bringing a unique torrent of thoughts, intense feelings, and doubts. The fact that people generally adapt over time to changing life situations and stress-inducing circumstances is partly thanks to resilience. Psychologists define resilience as the process of healthy adaptation in the face of maladaptation, trauma, disaster, threats, or specific stress sources (Wu et al., 2013). According to Rotter (2012), resilience is the capacity and dynamic process of adaptive mastery over stress and problems, while maintaining normal psychological and physical functioning. (Liu et al., 2018). In human resilience, nature and nurture play a role, but being resilient largely depends on the conditions, awareness, skills, and attitudes of the individual (Lown et al., 2015). Eshel and Kimhi (2016) believe that resilience is simultaneously defined by the concepts of robustness and vulnerability. That resilience emerges in harsh conditions or trauma at the individual, community, or ethnic level and refers to dynamic processes of positive adaptation to bitter and unpleasant experiences (Eshel & Kimhi, 2016). Lack of resilience causes an individual to fail to maintain their social functioning and psychological adaptation in the face of intense pressures and risk factors, failing to overcome problems (Mahdavi et al., 2019). Resilient individuals are more capable of adapting to life changes and have the ability to develop and expand a set of coping skills that support them in challenging situations (like dealing with chronic pain). This trait also helps them experience greater adaptation due to effective coping with stress-inducing conditions of facing chronic pain (Goli & Mirseify fard, 2021).

Researchers also believe that ego strength is an important factor that can predict mental health and adherence to treatment in patients with chronic pain (Ziadni et al., 2017). "Ego" or "self" has the responsibility of managing the psychic system, and the term ego strength refers to the individual's capacity for realistic perception of problematic situations and responding to them effectively. Ego strength helps the individual achieve emotional balance and adapt to internal and external stress. Overall, an individual's ability to

cope with life, meaning their psychological balance, depends on the ability and robustness of the ego in overcoming various pressures (Kelly & Daughtry, 2018). Patients with weak ego strength have less motivation to overcome obstacles and possess distorted thinking patterns that force them to believe they are incapable of handling tasks. Reality distorters, such as unrealistic patterns, cause anxiety and stress, making the individual believe that problems will disappear without finding a solution. On the other hand, the findings of Singh and Anand (2015) showed that patients with high ego strength have a high motivation to overcome problems, always struggle to improve, confess their feelings of guilt and anger, and remain steadfast despite difficult situations and conditions (Singh & Anand, 2015). Research findings indicate that psychological adaptation is related to resilience (Chen & Bonanno, 2020; Karimi & Esmaeili, 2020; Kiaei et al., 2021; Mosavi et al., 2021; SEÇER et al., 2021) and ego strength (Besharat et al., 2018; Sivandian et al., 2016).

Based on the review of studies conducted to date, it has been determined that most research has focused on social or marital adaptation, and few studies have specifically addressed psychological adaptation or maladaptation. Also, the research background showed that studies examining the relationship between ego strength and adaptation are few and far between. The relationship between these variables exists in different statistical populations, but fewer studies have been conducted on the population of patients with chronic pain. Although there are studies on the role of resilience components to date, ego strength in the relationship between components with a mediating role has not been studied in past research. The conclusion from reviewing these studies indicates that due to the lack of similar studies, or in other words, the absence of such studies in our country, it is necessary that more research of this kind be conducted. Therefore, the main question of this research is whether the structural model of psychological maladaptation based on resilience with the mediating role of ego strength in patients with chronic pain has an appropriate fit.

2. Methods and Materials

2.1. Study Design and Participants

This research, in light of its objectives, is of the applied research type, quantitative in its data collection method, and descriptive in its analysis, utilizing correlational designs and structural equation modeling (SEM) techniques. The study population includes patients suffering from chronic pain who visited specialized pain clinics in Tehran from February 2021 to May 2022. Using purposive sampling (based on the formula proposed by Tabachnick and Fidell (2007): $N \geq 50 + 8M$, where N is the sample size and M is the number of independent variables. In this study, there are 33 independent variables (independent, mediating, and their subcomponents: a total of 33 independent variables)), 314 patients with chronic pain who had visited specialized pain clinics in Tehran during the specified period were selected and asked to respond to the research questionnaires. Out of these, 3 were excluded for not returning the questionnaires and 6 for incomplete responses, resulting in a final sample size of 305. The study's inclusion criteria were: a history of chronic pain (lasting at least 6 months despite treatments over the past three months, occurring daily or nearly every day), being over 18 years old, having a minimum of a ninth-grade education, and willingness to participate in the study. The exclusion criteria included unwillingness to participate and not taking psychotropic drugs.

2.2. Measures

2.2.1. Psychological Adjustment

The Psychological Adjustment Questionnaire (Adult form) (PAQ), developed by Rohner and Khaleque (2005), consists of 63 questions and seven subscales: 1- Aggressiveness/Hostile behavior; 2- Dependency; 3- Negative self-esteem; 4- Emotional instability; 5- Negative self-efficacy; 6- Emotional unresponsiveness; and 7- Negative world view. Responses are rated on a 4-point Likert scale from 1 (Almost never) to 4 (Almost always). The internal consistency of the test was found to be $\alpha = 0.94$. In this study, the internal consistency was $\alpha = 0.97$. The validity of the test was $\alpha = 0.82$ in the study by Seyed Mousavi, Mazaheri, & Ghanbari (2010) using Cronbach's alpha (Chen & Bonanno, 2020; Mansoori et al., 2014).

2.2.2. Resilience

Presented by Connor-Davidson (2003), this questionnaire consists of 25 items aimed at measuring resilience based on components of personal competence/strength, trust in one's instincts, tolerance of negative affect, control, and spirituality in individuals. The response range is on a Likert scale, and the total score range is from 0 to 100, with higher scores indicating greater resilience. A score above 50 indicates individuals with resilience, with higher scores reflecting higher resilience levels. This questionnaire has

been validated in various studies within the country. The Connor-Davidson Resilience Scale scores were positively correlated with the Kobasa Hardiness Scale scores and negatively correlated with the Perceived Stress Scale and Sheehan's Stress Vulnerability Scale, indicating concurrent validity. Connor and Davidson reported a Cronbach's alpha coefficient of 89% for the resilience scale, and a retest reliability coefficient of 87% over a four-week interval. This scale was standardized in Iran by Mohammadi (2005), reporting a Cronbach's alpha reliability coefficient of 89%. Validity was determined by calculating each item's correlation with the total score and then employing factor analysis. Except for item 3, correlation coefficients ranged from 41% to 64%. Factor analysis was performed using the principal components method, preceded by calculating the KMO index and Bartlett's test. The KMO value was 87%, and the Chi-square value for Bartlett's test was 5556.28, both indicating sufficient evidence for conducting factor analysis (Karimi & Esmaeili, 2020; Kiaei et al., 2021).

2.2.3. Ego Strength

Developed by Marcia et al. (1997), this inventory measures eight points of ego strength including hope, will, purpose, competence, fidelity, love, care, and wisdom, consisting of 64 questions. Responses are rated on a five-point Likert scale, and the highest possible score is 300, while the lowest is 60. Higher scores indicate a higher level of ego strength. Marcia et al. confirmed the face, content, and construct validity of this inventory and reported a Cronbach's alpha reliability coefficient of 0.68. Parviz et al. reported a Cronbach's alpha of 0.64 for the Iranian sample (Besharat et al., 2018).

2.3. Data analysis

Data analysis was performed using SPSS-V23 and Lisrel-V7.80 software. Structural equation modeling was also used to test the research hypotheses.

3. Findings and Results

This section describes the research variables using central tendency and dispersion indicators.

Table 1

Descriptive Characteristics of Research Variables

Variable	Component	Mean	Standard Deviation	Skewness	Kurtosis
Psychological Adjustment	Aggression/Hostile Behavior	3.68	0.68	-0.70	-0.09
	Dependency	3.17	0.74	-0.64	0.46
	Negative Self-Esteem	3.54	0.81	-0.53	-0.13
	Emotional Instability	3.32	0.93	-0.71	0.28
	Negative Self-Efficacy	3.15	0.79	-0.58	0.39
	Emotional Unresponsiveness	3.39	0.86	-0.73	0.79
	Negative Worldview	3.45	0.62	-1.19	1.65
Resilience	Personal Competence/Strength	3.59	0.71	0.23	0.01
	Trust in Personal Instincts	3.64	0.63	-0.20	0.34
	Tolerance of Negative Emotions	3.71	0.90	-0.14	0.24
	Control	3.89	0.84	-0.22	0.30
	Spirituality	3.51	0.75	-0.04	-0.16
Ego Strength	Hope	3.28	0.65	0.02	0.27
	Will	3.38	0.97	-0.23	0.20
	Purpose	3.27	0.61	-0.03	0.30
	Competence	3.24	0.94	-0.31	0.43
	Loyalty	3.35	0.66	-0.02	0.27
	Love	3.49	0.73	0.16	0.33
	Care	3.25	0.89	0.08	0.06
	Wisdom	3.37	0.96	0.19	0.18

Table 1 presents the statistical characteristics of the research variables. Given the skewness and kurtosis values within the range of (-1.96, +1.96), the assumption of data normality is strengthened, thereby allowing the acceptance of data normality. After verifying the normality of the data, the correlation (relationship) between research variables was evaluated. Therefore, a correlation test was used, and its results are reported in Table 2.

Table 2

Correlation Test

		Psychological Maladjustment	Resilience	Ego Strength
Psychological Maladjustment	Correlation	1		
	Sig.			
Resilience	Correlation	-0.558**	1	
	Sig.	0.000		
Ego Strength	Correlation	-0.637**	0.623**	
	Sig.	0.000	0.000	

As indicated in Table 2, the ** symbol denotes the presence of a correlation between research variables at the 0.01 level, meaning there is a significant relationship between the variables. To examine the relationships of the hypothetical variables of the study, confirmatory structural equation modeling was employed. After modeling the structure, adding model constraints, and selecting the maximum likelihood method, the model was executed, and the fit diagrams for Figure 1 were obtained.

Figure 1
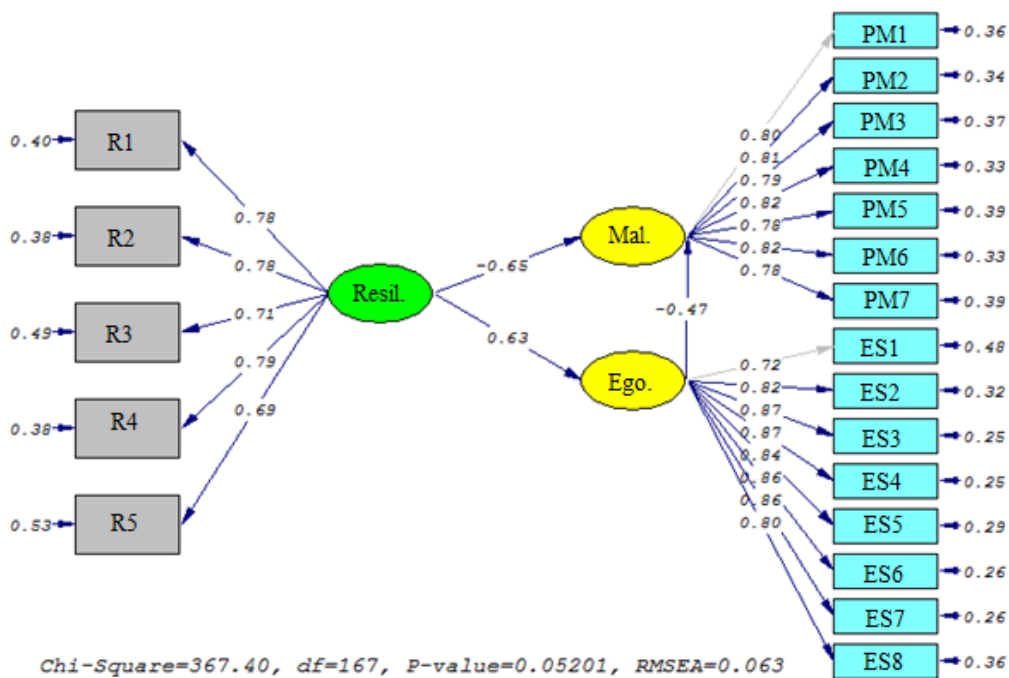
Model with Standard Coefficients (Beta)

Chi-Square=367.40, df=167, P-value=0.05201, RMSEA=0.063

Table 3

Selection of Important Fit Indices for the Modeled Diagram

Index Category	Index Name	Abbreviation	Value	Acceptable Fit
Absolute Fit Indices	Chi-Square Goodness-of-Fit	X^2	367.40	
	Goodness-of-Fit Index	GFI	0.90	> 0.8
Incremental Fit Indices	Adjusted Goodness-of-Fit Index	AGFI	0.88	> 0.8
	Comparative Fit Index	CFI	0.99	> 0.9
Parsimonious Fit Indices	Root Mean Square Error of Approximation	RMSEA	0.063	< 0.1

Considering the chi-square and RMSEA criteria, this model provides a suitable fit to the data. Table 3 lists the most important and common fit indices, all indicating statistical adequacy, thus, it can be confidently inferred that the researcher has achieved a relatively complete fit regarding these indices.

Table 4

Path Coefficients and t-values

Path	Path Coefficient	t-Value	Significance Level (p)
Resilience --> Ego Strength	0.63	14.21	< .01
Ego Strength --> Psychological Maladjustment	-0.47	-6.57	< .01
Resilience --> Psychological Maladjustment	-0.65	-10.81	< .01

Table 4 includes path coefficients along with t-values for the hypothesis. As shown, the tested paths are accepted. Therefore, it can be concluded that there is a significant direct and indirect (mediated by ego strength) relationship between resilience and psychological maladjustment in patients with chronic pain. To assess the direct and indirect effects of independent variables on the dependent variable, total, direct, and indirect effects for the endogenous variable of the model are presented, which can be seen in Table 5.

Table 5

Path Coefficients for Direct, Indirect, and Total Effects

Independent Variable	Dependent Variable	Direct Effect	Indirect Effect	Total Effect
Resilience	Ego Strength	0.63	----	0.63
Ego Strength	Psychological Maladjustment	-0.47	----	-0.47
Resilience	Psychological Maladjustment	-0.65	-0.30	-0.95

As observable in Table 5: The influence of resilience on psychological maladjustment indirectly through ego strength is -0.95.

4.   Discussion and Conclusion

The current study aimed to model the structure of psychological maladjustment based on resilience with the mediating role of ego strength in patients suffering from chronic pain. The statistical analysis results indicated a significant direct and indirect relationship (mediated by ego strength) between resilience and psychological maladjustment in patients with chronic pain. The results suggest that the impact of resilience on psychological maladjustment, mediated by ego strength, is negative and significant at 0.95. This finding aligns with previous studies (Chen & Bonanno, 2020; Julaieha et al., 2020; Karimi & Esmaeili, 2020; Mansoori et al., 2014; Mosavi et al., 2021; Namdari & Nouri, 2018; Sadoughi, 2018; Sheikholeslami et al., 2015) on the relationship between resilience and maladjustment; studies (Eshel & Kimhi, 2016; Hagi Aghanjad et al., 2021) on the relationship between resilience and ego strength; and studies (Besharat et al., 2018; Sivandian et al., 2016) on the relationship between maladjustment and ego strength. In explaining the relationship between psychological maladjustment and resilience, resilience can be described as an individual's capacity to maintain biopsychological equilibrium under difficult conditions. Individuals with high resilience maintain their psychological health in stressful and challenging situations and exhibit psychological adaptation (Hagi Aghanjad et al., 2021). Adaptation is expressed with terms like adapt, tolerate, adjust, blend, cooperate, coexist peacefully, and the like. Resilience, by strengthening the strengths of patients with chronic pain, makes them resistant to psychological harm. Thus, factors that increase adaptation are among the most fundamental constructs in studying this approach. Resilience, with an emphasis on internal resistance and optimism, can help individuals adapt to difficult and stressful conditions, coping with absences and sufferings.

Another interpretation suggests that currently, resilience is defined in related theories as a multidimensional construct that includes fundamental variables such as mood, personality, and specific coping skills that assist an individual in dealing with problems and traumatic events (Ahmadi & Siyahi, 2017). The primary mechanism in resilience is the effort to create an optimistic view towards

life's unpleasant realities (O'Connor & Batcheller, 2015). The perspective of a resilient individual is based on valuing control over situations, accountability, positive problem-solving, formulating positive strategies for problem resolution, and adopting a positive attitude towards problems as a means to gain valuable experiences. Thus, it can be imagined that having resilience, despite adverse conditions and negative events, leads to adaptive growth (Saqqezi & Hojatkhah, 2020). One component of resilience is communication, which plays a significant role in increasing adaptation. Patients with communication skills know how to effectively interact with others, enhance their verbal and non-verbal communications, and establish friendly relationships, which enables them to better adapt in times of change and thereby meet their needs and desires. In other words, individuals with healthy relationships can benefit from the social support of others and, as resilient individuals, demonstrate suitable adaptation (Saraswat & Unisa, 2017). Maladaptation, from a behavioral approach, is a set of learned behaviors that arise when an individual lacks the necessary skills to adapt to everyday life problems. Improving the quality of individuals' relationships with friends, caregivers, peers, and their family amplifies the protective effects of resilience and prevents the emergence of maladaptive behaviors (McQuade & Breaux, 2017). In explaining the relationship between psychological maladjustment and resilience with the mediating role of ego strength, it can be said that ego strength, whether from Freud's perspective (1923) as the ego's ability to confront and manage the demands and conflicts of the id, superego, and environmental requisites, or from Erikson's viewpoint (1965) as a set of capabilities arising from psychosocial development for resolving internal psychological conflicts and interacting with the environment, influences the adaptation process (Besharat et al., 2018). If chronic pain is considered a stressor, ego strength can help the patient better adapt to the disease and recovery process by employing more efficient coping strategies and developed defense mechanisms, based on appropriate levels of ego control and resilience.

5. Limitations & Suggestions

Given that the study population is a small subset of the community, composed of patients with chronic pain visiting specialized pain clinics in Tehran within a specific and limited time frame, generalizing findings to other community members should consider the sample's limited and specific nature. In this study, the only tool used was a questionnaire, which could be subject to inaccuracies, impatience, or personal interpretations by participants. Considering the significant prevalence of chronic diseases and yet, the resources, facilities, and attentions have not improved proportionately with the population increase, and the society has spent less energy on solving problems of patients with chronic pain, this group, due to disabilities, prevalence of various chronic diseases, social harms, and stress factors they experience, urgently needs support and attention. Investing more in this area can more seriously examine their problems and provide them with greater support. Since resilience is an educable construct and affects the adaptation of patients with chronic pain, it is recommended to conduct group sessions to teach resilience skills, especially for this group of individuals, as flexibility leads to greater adaptation. Additionally, group training sessions and the direct impact of the group itself in increasing member participation in group activities, enhancing a sense of belonging along with empathy and support, have a noticeable effect on increasing the social adaptation of members.

Authors' Contributions

All authors contributed equally.

References

Ahmadi, G., & Siyahi, A. (2017). Investigating the predictive role of psychological toughness and ambiguity tolerance in the resilience of military forces. *Military Psychology*, *8*(30), 91-90. https://jmp.ihu.ac.ir/article_201252_c76f5ad941197568d1a850193bc7dd26.pdf

Akbari, F., Dehghani, M., & Habibi, M. (2015). Pain catastrophizing and marital satisfaction in predicting depression in chronic pain patients. *Health Psychology*, *4*(13), 73-88. https://hpj.journals.pnu.ac.ir/article_1399_309479900d6edab6ab7ea425c149c8f1.pdf

Besharat, M. A., Kiaei, N., Nabavi, S. M., Gholmali Lavasani, M., & Kamali, Z. (2018). The mediating role of ego-strength on the relationship between attachment styles and adjustment to multiple sclerosis [Research]. *Journal of Psychological Science*, *17*(70), 629-642. http://psychologicalscience.ir/article-1-274-en.html

Chen, S., & Bonanno, G. A. (2020). Psychological adjustment during the global outbreak of COVID-19: A resilience perspective. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(S1), S51-S54. https://doi.org/10.1037/tra0000685

Cohen, S. P., Vase, L., & Hooten, W. M. (2021). Chronic pain: an update on burden, best practices, and new advances. *The lancet*, *397*(10289), 2082-2097. https://doi.org/10.1016/S0140-6736(21)00393-7

do Nascimento, L. P., Taveira, K. V. M., Berretta, F., Barbosa, J. S., de Souza, B. D. M., de Andrade, D. C. A., Canto, G. D. L., & Porporatti, A. L. (2020). Prevalence of temporomandibular disorder in patients with fibromyalgia: a systematic review / Prevalência de distúrbio temporomandibular em pacientes com fibromialgia: uma revisão sistemática. *Brazilian Journal of Development*, *6*(10), 80261-80285. https://doi.org/10.34117/bjdv6n10-447

Eshel, Y., & Kimhi, S. (2016). Community Resilience of Civilians at War: A New Perspective. *Community Mental Health Journal*, *52*(1), 109-117. https://doi.org/10.1007/s10597-015-9948-3

Goli, Z. S., & Mirseify fard, L. S. (2021). The role of Metacognitive Beliefs and Resilience on Predicting Marital Adjustment in Both Groups of Patients with Chronic and Acute Pain. *Journal of Assessment and Research in Applied Counseling (JARAC)*, *3*(3), 55-63. https://journals.kmanpub.com/index.php/jarac/article/view/64

Greenwood, M. (2015). Essentials of medical history-taking in dental patients. *Dental Update*, *42*(4), 308-315. https://doi.org/10.12968/denu.2015.42.4.308

Hagi Aghanjad, Y., Zare Nistanak, M., Tabatabaei, F. s., & Dadashi haji, M. (2021). The Effectiveness of Family Resilience Training on Social Adjustment of Military Families [Research]. *Military Caring Sciences*, *8*(3), 254-263. https://doi.org/10.52547/mcs.8.3.254

Johannsen, M., O'Connor, M., O'Toole, M. S., Jensen, A. B., & Zachariae, R. (2018). Mindfulness-based Cognitive Therapy and Persistent Pain in Women Treated for Primary Breast Cancer: Exploring Possible Statistical Mediators: Results From a Randomized Controlled Trial. *The Clinical Journal of Pain*, *34*(1). https://journals.lww.com/clinicalpain/fulltext/2018/01000/mindfulness_based_cognitive_therapy_and_persistent.9.aspx

Julaieha, S., Puladi Rey Shahri, A., Noorbala, A. A., & Safarinia, M. (2020). The role of resiliency and age to adjustment in patients with signs and symptoms of chronic pain. *Daneshvar Medicine*, *24*(4), 13-22. https://daneshvarmed.shahed.ac.ir/article_1742_a95b739996ab24b462de51be53f43165.pdf

Karimi, S., & Esmaeili, M. (2020). The relationship between emotion regulation and resilience strategies with marital adjustment in female teachers [Research]. *Journal of Psychological Science*, *19*(87), 291-298. https://doi.org/10.29252/psychosci.19.87.291

Kelly, W. E., & Daughtry, D. (2018). A Shorter Short Version of Barron's Ego Strength Scale. *College Student Journal*, *52*(2), 227-231. https://www.ingentaconnect.com/content/prin/csj/2018/00000052/00000002/art00006

Kiaei, T., Makvandi, B., Moradimanesh, F., & Hafezi, F. (2021). The Causal Relationship between Perceived Stress, Perceived Social Support, and Resilience with Emotional Adaptation Mediated by Life Satisfaction among Breast Cancer Patients. *SALĀMAT-I IJTIMĀĪ (Community Health)*, *8*(1), 103-116. https://doi.org/10.22037/ch.v8i1.31294

Law, E. F., Kim, A., Ickmans, K., & Palermo, T. M. (2022). Sleep Health Assessment and Treatment in Children and Adolescents with Chronic Pain: State of the Art and Future Directions. *Journal of clinical medicine*, *11*(6), 1491. https://doi.org/10.3390/jcm11061491

Liu, H., Zhang, C., Ji, Y., & Yang, L. (2018). Biological and Psychological Perspectives of Resilience: Is It Possible to Improve Stress Resistance? [Review]. *Frontiers in human neuroscience*, *12*. https://www.frontiersin.org/articles/10.3389/fnhum.2018.00326

Lown, M., Lewith, G., Simon, C., & Peters, D. (2015). Resilience: what is it, why do we need it, and can it help us? *British Journal of General Practice*, *65*(639), e708-e710. https://doi.org/10.3399/bjgp15X687133

Mahdavi, A., Rezae, F., Heidarisharaf, P., & Talebi, R. (2019). The Effectiveness of Resiliency Training on Reducing Anxiety and Increasing Adjustment of Mothers of Children with Autism Disorder. *Journal of New Strategies in Psychology and Educational Sciences*, *2*(3), 36-48. https://www.magiran.com/paper/2058203

Mansoori, E., Shokri, O., Pourshahriar, H., Pouretemad, H. R., & Rahiminejad, S. P. (2014). Effectiveness of Pennsylvania resiliency program on attribution styles and psychological adjustment in college students. *Applied Psychology*, *8*(3), -. https://apsy.sbu.ac.ir/article_96136_f254ee54da62a5d7dc459b99d2314458.pdf

McQuade, J. D., & Breaux, R. P. (2017). Parent emotion socialization and pre-adolescent's social and emotional adjustment: Moderating effects of autonomic nervous system reactivity. *Biological Psychology*, *130*, 67-76. https://doi.org/10.1016/j.biopsycho.2017.10.007

Mosavi, S. A., Alvani, J. a., & Ghasemi Panah, M. (2021). Investigating the Relationship between Emotional Adjustment and Cognitive Emotion Regulation with Resilience in Military Nurses [Original Article]. *Journal of Marine Medicine*, *3*(1), 39-45. https://doi.org/10.30491/3.1.39

Namdari, A., & Nouri, N. (2018). Roles of Perceived Social Support and Resilience in Women's Post-Divorce Adjustment. *Journal of Social Problems of Iran*, *9*(1), 25-50. https://doi.org/10.22059/ijsp.2018.65899

O'Connor, M., & Batcheller, J. (2015). The Resilient Nurse Leader: Reinvention After Experiencing Job Loss. *Nursing Administration Quarterly*, *39*(2), 123-131. https://doi.org/10.1097/naq.0000000000000089

Sadoughi, M. (2018). The Relationship between Academic Self-Efficacy, Academic Resilience, Academic Adjustment, and Academic Performance among Medical Students [Original Research]. *Bimonthly of Education Strategies in Medical Sciences*, *11*(2), 7-14. https://doi.org/10.29252/edcbmj.11.02.02

Saqqezi, A., & Hojatkhah, M. (2020). The proprity of the Structural Equation Modeling of Homesickness Based Resilience with mediating of Emotional and Social Adjustment in Non-Native Students. *Scientific Journal of Social Psychology*, *55*(8), 75-87. http://sanad.iau.ir/fa/Article/924968

Saraswat, A., & Unisa, S. (2017). A qualitative study examining psychosocial distress and coping mechanisms among orphan and vulnerable children living in institutional care in New Delhi, India. *Journal of Health and Social Sciences*, *2*(2), 195-208. https://www.academia.edu/download/79817628/jhhs22_195-208.pdf

SEÇER, İ., DURNA, N. B., & DURNA, D. (2021). Investigation of Adjustment Problems in Children Receiving Orthodontic Treatment and the Resilience Factor. https://doi.org/10.21203/rs.3.rs-409623/v1

Sheikholeslami, A., Sadeghionli, Z., & Mohammadi, N. (2015). The Relationship of Resiliency and Perceived Social Support with Adjustment of Mothers with Intellectually Disable Child. *Psychology of Exceptional Individuals*, *5*(20), 125-139. https://doi.org/10.22054/jpe.2016.5285

Singh, N., & Anand, A. (2015). Ego-strength and self-concept among adolescents: A study on gender differences. *The International Journal of Indian Psychology*, *3*(1), 46-54. https://doi.org/10.25215/0301.131

Sivandian, M., Besharat, M. A., Habibi Asgarabad, M., & Moghadamzade, A. (2016). The Moderating Role of Ego Strength on the Relationship between Attachment Styles and Marital Adjustment. *SALĀMAT-I IJTIMĀĪ (Community Health)*, *3*(1), 41-53. https://doi.org/10.22037/ch.v3i1.11793

Wu, G., Feder, A., Cohen, H., Kim, J., Calderon, S., Charney, D., & Mathé, A. (2013). Understanding resilience [Review]. *Frontiers in Behavioral Neuroscience*, *7*. https://doi.org/10.3389/fnbeh.2013.00010

Ziadni, M. S., Jasinski, M. J., Labouvie-Vief, G., & Lumley, M. A. (2017). Alexithymia, Defenses, and Ego Strength: Cross-Sectional and Longitudinal Relationships with Psychological Well-Being and Depression. *Journal of Happiness Studies*, *18*(6), 1799-1813. https://doi.org/10.1007/s10902-016-9800-7