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Perceived Stress, Self-Compassion, and Coping Strategies in Adults With and Without Autoimmune Disease: A Comparative Study

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ABSTRACT

Objective: This study compared perceived stress, self-compassion, and coping strategies between adults with autoimmune diseases and healthy controls.

Methods and Materials: In a causal-comparative cross-sectional study, 56 adults aged 20 years and older were recruited from three psychology clinics in Tehran (27 with diagnosed autoimmune disease for more than two years and 29 without chronic illness). Participants completed the Perceived Stress Questionnaire, the Self-Compassion Scale–Short Form, and the Coping Strategies Questionnaire. Instruments had acceptable reliability in the present sample (Cronbach's alpha 0.71–0.84). Group differences in perceived stress, self-compassion, and five coping strategies (problem solving, emotional control, cognitive evaluation, physical restraint, and gaining social support) were examined using ANOVA and MANOVA in SPSS 27, with α = 0.05.

Findings: Compared with the control group, participants with autoimmune disease reported significantly higher perceived stress and significantly lower self-compassion, problem solving, emotional control, and gaining social support (p < 0.05; partial η² = 0.071–0.267). No significant between-group differences emerged for cognitive evaluation or physical restraint. Multivariate analysis confirmed a significant overall effect of group on the psychological variables.

Conclusion: Adults living with autoimmune disease experience greater stress and reduced self-compassion and use of key adaptive coping strategies than individuals without such conditions. These findings highlight an important psychological burden in autoimmune disease and underscore the need to integrate stress management, self-compassion training, and coping-skills interventions into routine care in order to support patients' psychological and social well-being.

Keywords: Autoimmune disease, perceived stress, self-compassion, coping strategies, psychosocial adjustment.

Introduction

Autoimmune diseases encompass a wide range of conditions characterized by abnormal B-cell and T-cell responses to the body's tissues, often resulting from a combination of genetic predisposition and environmental factors that impact individuals of all ages, with a higher prevalence in women (Pisetsky, 2023). These conditions involve an inflammatory response against self-antigens, affecting 3-10% of the population (Jung & Kim, 2022). Studies suggest a rise in autoimmunity and autoimmune diseases, possibly due to changes in diet, exposure to environmental toxins, air pollution, infections, stress, and climate change, resulting in increased personal and societal burdens as well as healthcare costs (Miller, 2023). Research has shown a higher prevalence of depression among individuals with autoimmune diseases compared to those without (Glanville et al., 2021), with some patients also experiencing mental health issues such as panic attacks, social anxiety, and major depressive disorder (Afshar-Zanjani et al., 2021; Besar et al., 2024).

Chronic illness is a constant source of stress that can cause or worsen health problems, and ineffective stress management may weaken the immune system and impair overall health (Wróbel et al., 2023). The duration, frequency, and timing of exposure to stress are important factors in determining its impact on an individual's physiology. Prolonged stress and inadequate coping strategies may lead to adverse physiological and psychological outcomes (Ilchmann-Diounou & Menard, 2020). According to Folkman, (2013), stress is defined as a psychophysiological reaction to stressful situations, and coping strategies are cognitive and behavioral processes that are used to reduce or manage this stress (Arabi et al., 2023; Folkman, 2013). This theory is important for understanding how to cope with chronic illnesses. A study of patients with autoimmune conditions showed that oxidative stress can stimulate inflammation through various signaling pathways (Medovic et al., 2022). Evidence suggests that stress-related disorders may impair immune function and potentially contribute to the onset of autoimmune diseases. Military personnel with post-traumatic stress disorder (PTSD) may be at increased risk for a range of health problems, regardless of combat experience (Bookwalter et al., 2020).

Since stress impairs immune function and health, psychological resilience factors like self-compassion are crucial. In line with this, self-compassion has been identified as beneficial for individuals facing serious illnesses (Giménez-Llort et al., 2021). Neff's self-compassion theory posits that responding to suffering with kindness, mindfulness, and shared humanity reduces psychological distress and supports adaptive coping in chronic illness (Neff, 2003). Self-compassion involves recognizing one's own suffering, understanding it as part of the common human experience, responding with empathy, and cultivating a desire to alleviate distress. This capacity plays a crucial role in how individuals manage the consequences of chronic illness and significantly affects both psychological well-being and vulnerability to psychopathology (Halamová et al., 2022). A study revealed a negative association between self-compassion and distress, as well as well-being, in both healthy youth and adults with chronic illnesses (Prentice et al., 2021). Furthermore, research findings indicated that individuals with autoimmune diseases who are experiencing depression tend to have lower levels of self-esteem and self-compassion (Gedik & Idiman, 2020).

In addition to emotional factors, psychological responses to chronic illnesses are shaped by individuals' beliefs about their condition, which influence the coping strategies they use to manage distress. Coping refers to the various psychological responses aimed at minimizing harm, loss, or distress (Skapinakis et al., 2020). Studies show that positive coping styles and less threatening illness perceptions are linked to healthier behavioral outcomes, while illness perception can impact health behavior through coping strategies (Liu et al., 2021). One study found that how individuals perceive their illness directly affects their quality of life, maladaptive coping strategies, self-efficacy, and levels of anxiety (Knowles et al., 2020). Similarly, another study concluded that emotion-focused coping plays a significant role in the impact of autoimmune diseases, such as MS (Wilski et al., 2021).

The complexity and long-term risks of autoimmune diseases present numerous psychological and physical challenges. This study is informed by the stress-appraisal-coping model Folkman, (2013) and Neff, (2003) theory of self-compassion, providing a framework for understanding psychological adaptation

to chronic illness. Research in this area may reveal strategies to improve quality of life and reduce stress and anxiety. Comparing perceived stress, self-compassion, and coping strategies between individuals with autoimmune diseases and healthy controls offers meaningful insights into psychological and health outcomes. Despite prior studies, there is a lack of direct comparison in this context. Therefore, this research aims to fill this gap and identify effective ways to enhance patients' well-being.

Methods and Materials

This study was part of a cross-sectional research with practical purposes, a causal-comparative research methodology, and a specific research duration. The variables of interest were perceived stress, self-compassion, and coping strategies. The statistical population consisted of all individuals with autoimmune diseases in Tehran clinics from July to September 2023. The sampling method used in this research was purposeful, with a total sample size of 60 participants (30 in each group). The sample size adequacy was determined using G-Power software, with parameters set at α = 0.05, effect size = 0.25, power test = 0.80, and number of groups = 2 (Kang, 2021). Based on this analysis, 30 individuals were allocated to each group (Figure 1).
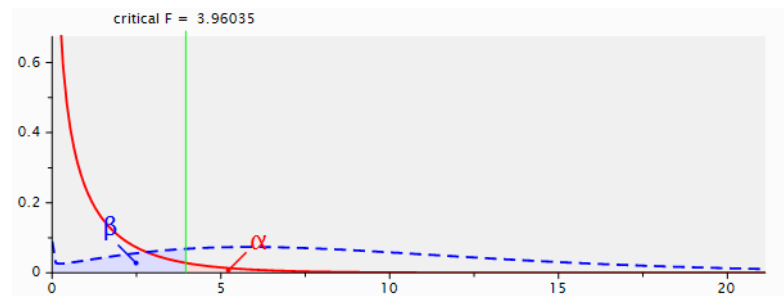

Figure 1

Sample size calculation with G-Power software

The prerequisites for participation in the study included being at least 20 years old, willing to take part in the research, possessing adequate literacy and understanding to respond to the questions, having been afflicted with an autoimmune disease for over two years, visiting the research site clinics, and having a consultation file. Individuals who did not complete the questionnaire with over eight questions, had physical or mental conditions hindering their involvement in the study, or declined to participate were excluded. To initiate the research, the researchers secured approvals from the university and relevant authorities, collaborated with psychology clinics, approached individuals seeking counseling for their autoimmune disease, provided information about the study's objectives and permissions, and established partnerships with willing participants. Counseling facilities were chosen in consultation with university professors, resulting in the selection of three clinics. Participants were guaranteed that their personal information would remain confidential in the research documents and that they could withdraw from the research at any point.

All participants faced limitations in cooperation, resulting in the research process and questionnaire completion in person taking three months. To randomly assign participants, they were divided into two groups of 30 each by flipping a coin. The control group consisted of individuals without autoimmune diseases who were clinic clients. Four individuals were excluded from the study for incomplete questionnaire responses or intentional errors. Before administering the questionnaires, participants signed a consent form acknowledging their willingness to participate voluntarily with the option to withdraw at any point. They received assurance that the surveys were anonymous.

Tools

Perceived Stress Questionnaire (PSQ): The self-report questionnaire developed by Cohen et al., (1983) is

used to assess stress and has been validated (Cohen et al., 1983). It consists of 16 items measured on a 5-point Likert scale (ranging from always to never) with a total score range of 16 to 80. The survey contains inquiries about feelings like stress, discomfort, and decreased productivity felt in the month prior, as well as the frequency of feeling overwhelmed by obstacles and frustrated by uncontrollable challenges. The questionnaire creators achieved a Cronbach's alpha of 0.87 to establish reliability. In Iran, in a 2014 study, the Persian version of the Perceived Stress Questionnaire (PSS) was examined on 155 cancer patients. Exploratory factor analysis (Skapinakis et al.) with Varimax rotation identified two factors: "perceived self-efficacy" and "perceived helplessness". Confirmatory factor analysis (CFA) also confirmed this two-factor structure. Cronbach's alpha coefficient was reported to be 0.80 and 0.60 for these two factors, respectively, and 0.76 for the total scale (Safaei & Shokri, 2014). Also, in another study in 2024, the 10-item version of the questionnaire was evaluated on patients after surgery. In this study, exploratory factor analysis (Skapinakis et al.) and confirmatory factor analysis (CFA) were conducted and the factor structure of the questionnaire was confirmed. The model fit indices were also reported to be appropriate (Sharif-Nia et al., 2024). In Iran, the Cronbach's alpha technique was used to determine that the questionnaire had a reliability of 0.72 (Khalili et al., 2017). The researcher of this study calculated the Cronbach's alpha coefficient for the scale to be 0.84.

Self-Compassion Scale–Short Form (SCS-SF): The original self-compassion questionnaire was created in 2011 by Raes, Pommier, Neff, (2003), and Van Gucht to assess and explore self-compassion (Raes et al., 2011). In 2003, a 12-item scale and a 26-item scale were developed. The questionnaire consists of 6 factors: self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification. Scores are totaled to calculate the individual's overall score. The questionnaire uses a 5-point Likert scale rating from "not at all" (1) to "always" (5). The high scores reflect greater self-compassion, while lower scores indicate low self-compassion. The results of this survey may range from 26 to 130. The Persian version of the SCS-SF was translated by Khanjani et al., (2016) in accordance with scientific principles. In the study by Khanjani et al., confirmatory factor analysis (CFA) was conducted to examine the factor structure of the Persian version of the SCS-SF. The results showed that the factor structure of the instrument is appropriate in the Iranian sample and the model fit indices are acceptable. Convergent and divergent validity with related scales such as external shame, negative affect, and perfectionism showed significant correlations, indicating appropriate convergent validity. Also, negative correlations with these scales indicate desirable divergent validity (Khanjani et al., 2016). In Iran, the reliability of this survey was confirmed with Cronbach's alpha scores ranging from 0.73 to 0.85 (Mahmoudi Hamidi et al., 2023). The Cronbach's alpha score for this survey in this study was 0.71.

Coping Strategies Questionnaire (CSQ): In 1981, Billings and Moss created a questionnaire to assess how individuals cope with problems (Billings & Moos, 1984). The questionnaire consists of 32 questions that measure five coping strategies: problem-solving, emotional control, cognitive evaluation, physical restraint, and gaining social support. Each question is answered on a four-point Likert scale ranging from never to always. A study in Iran found that the scale had a retest reliability coefficient of 0.79 (Soltani et al., 2013). The Persian version of the CSQ was translated by Iranian researchers in accordance with scientific principles. This process included direct translation, back-translation, and review by psychologists to ensure conceptual and cultural equivalence. In a study conducted by Seydi et al., (2021), confirmatory factor analysis (CFA) was conducted to examine the factor structure of the Persian version of the CSQ in Iranian patients with chronic neck pain. Cronbach's alpha coefficients for the subscales ranged from 0.75 to 0.93. The "Catastrophizing" subscale showed significant correlations with related scales such as the Pain Catastrophizing Scale, the Fear of Movement Scale, the Fear Avoidance Beliefs Questionnaire, and the Neck Disability Index, indicating good convergent validity. Also, the negative correlation with the SF-12 health scale indicates good divergent validity (Seydi et al., 2021). The researcher also calculated Cronbach's alpha coefficient for each component of the scale: Problem-Solving (0.786), Emotional Control (0.741), Cognitive Evaluation (0.759), Physical Restraint (0.711), and Gaining Social Support (0.784).

Analysis

The study utilized ANOVA and MANOVA to analyze the data and compare the group scores. At first, it was crucial to verify that all criteria for the analysis were met. After checking for outliers, none were detected. Additionally, the two groups were confirmed to be independent of each other. The Kolmograph Smirnov test results indicated that the score distribution was normal. The variance equality of the groups was assessed, with Levene's Test showing no significant differences in error variance equality. Descriptive analysis was conducted using SPSS-27 software, with a significance level established at 0.05.

Findings and Results

"In this study, 56 individuals took part, with two groups consisting of 27 individuals with an autoimmune disease and 29 individuals in the Control group. The participants were grouped based on their educational attainment into three categories: Diploma, Bachelor's degree, and Master's degree. In addition, they were separated into three different age groups. The researcher utilized the Kruskal-Wallis H test to compare the demographic characteristics of the two groups (refer to Table 1). There were no significant differences in age and education between the two groups (P>0.05)."
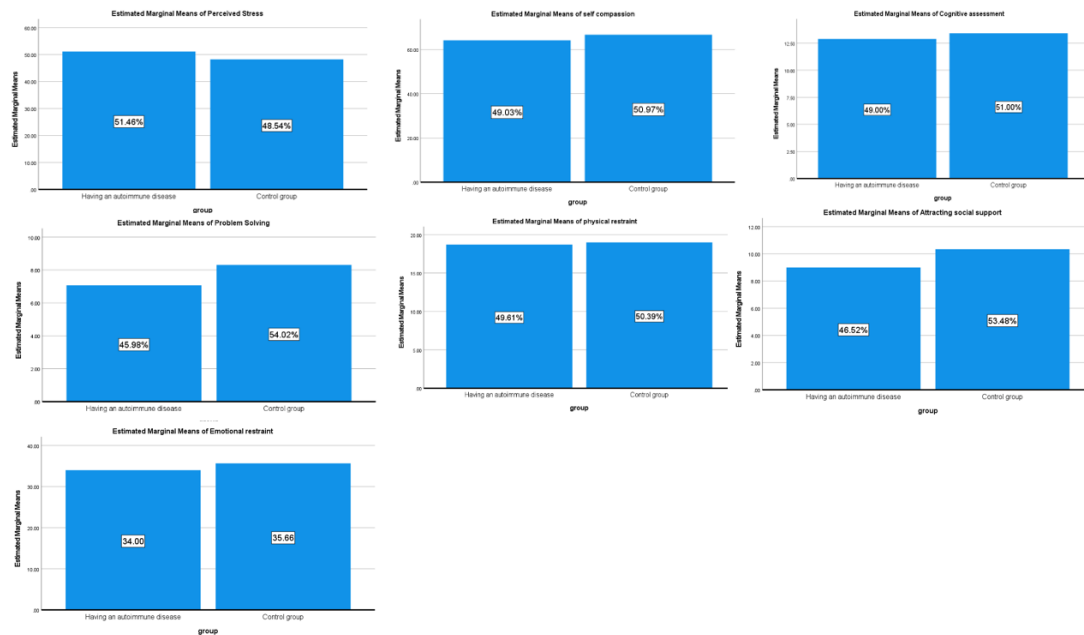
Table 1

Demographic Characteristics

Demographic Information		Having an Autoimmune Disease	%	Control Group	%	Total	%	Kruskal-Wallis Test	P value
Age	20 to 30 years	12	44.4%	14	48.3%	26	46.4%	0.295	0.587
	31 to 40 years	11	40.7%	13	44.8%	24	42.9%		
	40+ years	4	14.8%	2	6.9%	6	10.7%		
Education	Diploma	5	18.5%	9	31.0%	14	25.0%	1.891	0.169
	Bachelor's Degree	5	18.5%	7	24.1%	12	21.4%		
	Master's degree	17	63.0%	13	44.8%	30	53.6%		

Table 2 displays the summary statistics regarding the study variables.

Table 2

Descriptive Statistics of the Variables

Variables	Groups	N	Mean ± SD	Min	Max	Skewness	Kurtosis
Perceived Stress	Having an Autoimmune Disease	27	51.111±2.276	44	55	-0.002	-0.431
	Control Group	29	48.207±2.596				
Self-Compassion	Having an Autoimmune Disease	27	64.148±4.470	58	72	-0.191	-1.439
	Control Group	29	66.69±4.856				
Problem Solving	Having an Autoimmune Disease	27	7.074±1.207	5	10	-0.167	-0.342
	Control Group	29	8.310±1.004				
Emotional Control	Having an Autoimmune Disease	27	34.00±1.901	30	37	-0.636	-0.104
	Control Group	29	35.655±1.143				
Cognitive Evaluation	Having an Autoimmune Disease	27	12.889±1.396	10	15	-0.482	-0.551
	Control Group	29	13.414±1.296				
Physical Restraint	Having an Autoimmune Disease	27	18.704±1.613	16	21	-0.246	-1.180
	Control Group	29	19.000±1.558				
Gaining Social Support	Having an Autoimmune Disease	27	9.000±1.359	7	12	-0.239	-0.682
	Control Group	29	10.345±1.203				

Figure 2

Bar chart for comparing groups

Bar chart for comparing groups is presented in Figure 2. According to Table 2, it is evident that the mean perceived stress level in the group with an autoimmune disease is higher compared to the control group. However, the mean scores for cognitive evaluation and physical restraint did not show significant differences between the two groups. Additionally, the mean scores for self-compassion, problem-solving, emotional control, and gaining social support were higher in the control group than in the group with an autoimmune disease. The analyst examined the results of Levene's test in

Table 3 and confirmed that the assumption was satisfied. According to Levene's test, if the significance level of the test is greater than 0.05 and the test is not significant, it can be confirmed that the variance between the groups is equal. The only variable that displayed a notable difference in this test was emotional control, prompting the analyst to proceed with Welch's test to explore this variable further. The researcher used variance analysis to compare the groups in Table 4.

Table 3

Test for Equality of Variances (Levene's)

Variables	F	df1	df2	p
Perceived Stress	0.407	1	54	0.526
Self-Compassion	1.128	1	54	0.293
Problem-Solving	0.011	1	54	0.917
Emotional Control	4.125	1	54	0.047
Cognitive Evaluation	0.313	1	54	0.578
Physical Restraint	0.280	1	54	0.599
Gaining Social Support	0.242	1	54	0.625

Table 4

ANOVA and MANOVA to Check the Difference between Groups

Variables		Sum of Squares	df	MS	F	p	Effect sizes
Perceived Stress	Group	117.932	1	117.932	19.690	< .001	0.267
Self-Compassion	Group	90.314	1	90.314	4.134	0.047	0.071
Problem Solving	Group	21.370	1	21.370	17.469	< .001	0.244
Emotional Control (Welch)	Group	38.305	1	38.305	15.312	< .001	0.227
Cognitive Evaluation	Group	3.852	1	3.852	2.129	0.150	0.038
Physical Restraint	Group	1.228	1	1.228	0.489	0.487	0.009
Gaining Social Support	Group	25.288	1	25.288	15.421	< .001	0.222
Multivariate Tests							
Effect	Value	F		Hypothesis df	Error df		p
Pillai's Trace	0.602	10.370		7	48		< .001
Wilks' Lambda	0.398	10.370		7	48		< .001
Hotelling's Trace	1.512	10.370		7	48		< .001
Roy's Largest Root	1.512	10.370		7	48		< .001

Based on the findings in Table 4, there were significant differences among the groups for all research variables except for Cognitive evaluation and Physical restraint (P<0.05). According to the results, Perceived Stress had a significant difference between the groups (P<0.001 , F=19.690) and based on the effect size obtained, it can be confirmed that this difference shows a small effect (η^2p =0.267). Effect sizes between 0.2 and 0.5 are considered small, between 0.5 and 0.8 are considered medium, and greater than 0.8 are considered large. The Self-Compassion variable had a significant difference between the groups (P=0.047 , F=4.134) and based on the effect size obtained, it can be confirmed that this difference shows a very small effect (η^2p =0.071). Given that the effect size of this difference was small, but due to the significant difference between the groups, the researcher continued the study by confirming or rejecting the difference between the groups based on a

post hoc test. The post hoc test provides a significantly more rigorous and accurate measure of the level of significance between the groups. Also, Problem Solving variable had a significant difference between the groups (p<0.001 , F=17.469) and based on the effect size obtained, it can be confirmed that this difference shows a small effect (η^2p =0.244). At the same time, the Emotional Control variable had a significant difference between the groups (p<0.001 , F=15.312) and based on the effect size obtained, it can be confirmed that this difference shows a small effect (η^2p =0.227). Similarly, the Gaining Social Support variable had a significant difference between the groups (p<0.001, F=15.421) and based on the effect size obtained, it can be confirmed that this difference shows a small effect (η^2p =0.222). The researcher also analyzed the pairs between the research groups in Table 5.

Table 5

Post Hoc Comparisons - Group

Variables	Group (I)	Group (J)	MD	95% CI for Mean Difference		SE	t	p$_{tukey}$
				Lower	Upper			
Perceived Stress	Having an Autoimmune Disease	Control Group	2.904	1.592	4.216	0.654	4.437	< .001
Self-Compassion	Having an Autoimmune Disease	Control Group	-2.542	-5.047	-0.036	1.250	-2.033	0.047
Problem-Solving	Having an Autoimmune Disease	Control Group	-1.236	-1.829	-0.643	0.296	-4.180	< .001
Emotional Control	Having an Autoimmune Disease	Control Group	-1.655	-2.509	-0.802	0.423	-۳,۹۱۳	**< .001
Cognitive Evaluation	Having an Autoimmune Disease	Control Group	-0.525	-1.246	0.196	0.360	-1.459	0.150
Physical Restraint	Having an Autoimmune Disease	Control Group	-0.296	-1.146	0.553	0.424	-0.699	0.487
Gaining Social Support	Having an Autoimmune Disease	Control Group	-1.345	-2.031	-0.658	0.342	-3.927	< .001

Note:

*MD means mean difference between groups.

*Ptukey means Tukey post hoc test.

**Games-Howell Post Hoc

Based on the data in Table 5, it was found that there was a significant difference (p<0.001) in the level of Perceived Stress between the group with autoimmune disease and the Control group. The group with autoimmune disease showed higher levels of Perceived Stress compared to the Control group. Additionally, there was a significant difference (p=0.047) in the level of Self-compassion between the two groups, with the group

Discussion and Conclusion

This study primarily aimed to compare perceived stress, self-compassion, and coping strategies between individuals with autoimmune diseases and healthy controls. The results revealed that participants with autoimmune conditions exhibited elevated perceived stress alongside reduced self-compassion, problem-solving skills, emotional regulation, and social support relative to the control group. These findings are consistent with prior correlational research demonstrating higher stress and diminished adaptive coping in autoimmune populations compared to healthy individuals (Afshar-Zanjani et al., 2021; Bookwalter et al., 2020; Gedik & Idiman, 2020; Knowles et al., 2020; Medovic et al., 2022; Prentice et al., 2021; Wilski et al., 2021). One study found that oxidative stress can contribute to inflammation in patients with autoimmune diseases through various signaling pathways (Medovic et al., 2022). Additionally, research suggests that stress disorders can disrupt the immune system and lead to autoimmune diseases, putting individuals with PTSD, including military personnel, at risk for various health issues regardless of combat experience (Bookwalter et al., 2020). Another study revealed a negative correlation between self-compassion and distress among both healthy youth and adults with chronic illnesses (Prentice et al., 2021). Furthermore, patients with autoimmune diseases and depression were found to have significantly lower levels of self-compassion (Gedik & Idiman, 2020). Knowles et al., (2020) demonstrated that perceptions of illness directly impact the quality of life and Coping strategies (Knowles et al., 2020). Lastly, a study noted a positive relationship between emotional coping and the impact of multiple sclerosis, an autoimmune disease (Wilski et al., 2021).

People with autoimmune diseases experience higher levels of stress compared to those without such

with autoimmune disease displaying lower levels of Self-compassion than the Control group. Furthermore, significant differences (p<0.001) were also observed in the variables of Problem Solving, Emotional Control, and Gaining Social Support between the two groups, indicating that the group with autoimmune disease had lower levels of Problem Solving, Emotional Control, and Gaining Social Support compared to the Control group. conditions. The chronic and unpredictable nature of these diseases can negatively affect mental well-being. Contributing factors include physical symptoms, uncertainty about disease progression, financial burdens, and social-psychological impacts. These challenges often make emotional regulation more difficult (Besar et al., 2024). The observed differences in perceived stress, self-compassion, and coping strategies between individuals with autoimmune diseases and healthy controls align with established theoretical frameworks. For example, the Transactional Model of Stress and Coping Folkman, (2013) emphasizes the role of cognitive appraisal and coping resources in stress responses. The Self-Compassion model Neff, (2003) highlights how self-kindness versus self-criticism influences emotional regulation and adaptation to chronic illness. Additionally, physiological models involving dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis provide a biological basis linking chronic stress to autoimmune pathology (Montero-López et al., 2024). Additionally, individuals with autoimmune diseases often report lower self-compassion, which may be linked to the physical and emotional challenges they face. Self-compassion, self-care, and self-acceptance, and reducing self-criticism. Research suggests that individuals with higher levels of self-compassion are better equipped to handle life challenges and chronic illnesses, experiencing lower stress levels. However, individuals with autoimmune diseases struggle to maintain self-compassion due to the physical and mental toll of their conditions, leading to increased stress and difficulties in coping with disease-related challenges (Halamová et al., 2022; Hughes et al., 2021).Additionally, individuals with autoimmune diseases often face heightened emotional difficulties due to ongoing physical symptoms and illness-related concerns, which reduce their ability to cope effectively. They tend to use coping strategies such as problem-solving, emotional control, and seeking social support

less frequently. Emotional control is impaired as chronic illness can intensify anxiety and depression, while social support is often underutilized due to feelings of vulnerability or reluctance to share concerns (Liu et al., 2021). Interestingly, no significant differences emerged in cognitive appraisal and physical restraint between groups, suggesting some coping components remain stable despite illness status. This may reflect that chronic disease reduces reliance on immediate behavioral control strategies, though further research is needed to clarify whether this pattern is due to sample characteristics or measurement limitations (Wróbel et al., 2023). Overall, these findings underscore the need for tailored psychosocial interventions addressing stress reduction, enhancing self-compassion, and promoting effective coping in autoimmune populations.

One key limitation of this study is its reliance on self-reported data, which may introduce response bias, especially social desirability effects on sensitive constructs like self-compassion and emotional coping. Potential sampling bias is another concern, as volunteers may differ from non-participants, limiting generalizability. The relatively small sample size and cross-sectional design restrict causal inferences and the examination of changes over time. Additionally, illness type and severity were not controlled, complicating the distinction between stable traits (e.g., chronic stress) and transient states related to disease progression. Cultural interpretations of stress may also affect outcomes. Future research should address these limitations by incorporating larger, stratified samples, controlling for illness characteristics, and using longitudinal or interventional designs to clarify causality and temporal dynamics. Collaborations with medical centers and offering incentives may improve representation. Comparative studies with other chronic illness groups and intervention trials aimed at enhancing self-compassion and coping are also warranted.

Conclusion

The present study indicates that individuals with autoimmune diseases experience significantly higher perceived stress and reduced self-compassion and coping abilities compared to healthy controls. Clinically, these findings highlight the need for integrating tailored psychosocial interventions—such as psychoeducation, counseling, and compassion-focused therapies—within standard medical treatment to better address patients' psychological and emotional needs. Implementing such programs may improve adaptive coping and overall well-being. From a research standpoint, further investigation is needed into how cultural and social factors moderate coping strategies and stress responses in this population. Additionally, developing culturally sensitive self-care models and exploring the integration of psychological support with medical treatment protocols are important future directions. Together, these insights provide practical guidance for clinicians and researchers aiming to enhance holistic, multidisciplinary care and improve quality of life in individuals with autoimmune diseases.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Authors' Contributions

All authors equally contribute to this study.

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