Journal Website

Article history:
Received 20 April 2024
Revised 15 May 2024
Accepted 10 October 2024
Published online 27 October 2024

Iranian Journal of Neurodevelopmental Disorders

Volume 3, Issue 3, pp 83-93

Journal of Neurodevelopmental Disorder

E-ISSN: 2980-9681

The Structural Relationship of Treatment Adherence Based on Illness Perception in Patients with Psoriasis: The Mediating Role of Body Image Concern

Amir. Yousefi[1], Mohsen. Jalali[2*], MohammadTaghi. Badelleh Shamshuki[3], LeilaSadat. Azizi Ziabari[4]

[1] Department of Health Psychology, Gorgan Branch, Islamic Azad University, Gorgan, Iran
[2] Assistant Professor, Department of Clinical Psychology, Faculty of Humanities and Social Sciences, Golestan University, Gorgan, Iran
[3] Assistant Professor, Department of Health Psychology, Psychiatry Research Center, Golestan University of Medical Sciences, Gorgan, Iran
[4] Assistant Professor, Department of Nursing, Gorgan Branch, Islamic Azad University, Gorgan, Iran

*** Corresponding author email address**: jalali.psycho@yahoo.com

A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Yousefi, A., Jalali, M., Badelleh Shamshuki, M. T., & Azizi Ziabari, L. S. (2024). The Structural Relationship of Treatment Adherence Based on Illness Perception in Patients with Psoriasis: The Mediating Role of Body Image Concern. *Iranian Journal of Neurodevelopmental Disorders*, *3*(3), 83-93.
https://doi.org/10.61838/kman.jndd.3.3.10

A B S T R A C T

Purpose: The present study examines the structural relationship of treatment adherence based on illness perception in patients with psoriasis, considering the mediating role of body image concern.

Methodology: This study employs a descriptive-correlational research method based on structural modeling. The statistical population consists of patients with psoriasis in Tehran. Based on the inclusion and exclusion criteria, 250 patients with psoriasis will be selected using a purposive convenience sampling method. The data collection tools include the Ziaei Treatment Adherence Questionnaire (2009), the Littleton Body Image Concern Inventory (2005), and the Broadbent et al. Illness Perception Questionnaire (2006). Data analysis is conducted using structural regression equation modeling. The collected data are analyzed using SPSS 18 and AMOS 23 software.

Findings: The findings indicate that illness perception has a direct effect on treatment adherence in individuals with psoriasis. Additionally, body image concern has a direct effect on treatment adherence in these patients. Moreover, illness perception indirectly affects treatment adherence through the mediating role of body image concern.

Conclusion: Thus, addressing psychological and social factors can enhance adherence, improving treatment outcomes and patients' quality of life.

Keywords: *Treatment adherence, illness perception, psoriasis, body image concern*

1. Introduction

Psoriasis is one of the most common autoimmune skin diseases with a psychophysiological origin and consequences, characterized by vulnerability to stress, emotional disturbances, and difficulty in expressing negative emotions (Hedemann et al., 2022). Many individuals with psoriasis struggle with the intensity of their anger experience as well as its expression and control. It appears that two components of Type D personality—negative affectivity and social inhibition—as well as alexithymia, play a significant role in psoriasis (Kleyn et al., 2020).

On the other hand, psoriasis itself can lead to significant psychological stressors, including a reduced illness perception, and can increase the prevalence of mood disorders and depression among affected individuals (Li et al., 2023). Psoriasis is often associated with emotional self-awareness issues, body image disturbances, and heightened stress vulnerability. Data from studies over recent decades indicate that 37% to 50% of psoriasis patients report disease flare-ups following emotional distress and feelings of depression (Adesanya et al., 2023). Furthermore, it has been found that 60% of patients attribute the cause of their disease to psychological stress among various possible factors, including genetic, nutritional, and behavioral influences, whereas 55% consider genetic factors to be influential (Quinto et al., 2022).

A quarter of individuals with psoriasis experience depression, and therefore, psychological preventive strategies are particularly crucial in severe cases of the disease (Lambert et al., 2020). Living with psoriasis can be challenging and negatively impact an individual's emotional, psychological, and social well-being. Those with visible lesions may feel embarrassed about their appearance, potentially leading to social withdrawal, depression, and anxiety. This can affect relationships, work life, and social interactions (Werner et al., 2022).

One of the critical behaviors associated with chronic diseases such as psoriasis that predicts successful treatment and mitigates adverse effects and disease severity is patient adherence (El Abdellati et al., 2020). Treatment adherence, also known as medical compliance, refers to the degree to which a patient follows prescribed medical instructions (Lippincott et al., 2022). Most commonly, this term refers to medication adherence, but it also applies to other health-related behaviors such as the use of medical devices, self-care routines, self-directed exercises, and therapy sessions (Chen et al., 2020). Both the patient and the healthcare provider influence adherence, and a strong patient-provider relationship is the most critical factor in enhancing adherence (Aardoom et al., 2020). The cost of prescribed medications is another factor affecting adherence (Wagnew et al., 2023).

The issue of treatment adherence has become a significant challenge for medical professionals and social scientists. Efforts to ensure that patients comply with medication regimens and treatment guidelines have often been ineffective. Although interventions targeting adherence have shown some success, it is estimated that approximately half of such interventions fail (Boughdady et al., 2024). Despite significant advancements in adherence interventions over the past decade, adherence rates have largely remained unchanged (Pan et al., 2021). Due to various challenges in adherence, many patients fail to fully benefit from medical interventions, resulting in poor treatment outcomes, lower quality of life, and increased healthcare costs (Fragoulis et al., 2020). The burden of non-adherence falls mainly on the patients themselves, leading to disease progression and chronicity worldwide. Chronic disease patients, in particular, require higher levels of adherence (Dwi Nur, 2021). It has been estimated that non-adherence to medication leads to more than $100 billion in healthcare costs annually. The prevalence of non-adherence to medication and treatment ranges between 18% and 71%, accounting for approximately 10% of hospitalizations (Costantino et al., 2021).

Body image is a complex concept encompassing biological, psychological, internal, and external social factors (Ahmadi, 2024; Arıkan et al., 2024; Oliveira-Kumakura et al., 2019). In psoriasis, body image perception is influenced by the disease's visible symptoms, leading to heightened sensitivity regarding one's body and increased vulnerability to negative social evaluations (Lee & Jang, 2021; Li et al., 2023). Body image is the internal representation of an individual's external appearance, encompassing physical, perceptual, and attitudinal dimensions (Sampasa-Kanyinga et al., 2017).

Like other psychological aspects, body image perception is an intrinsic part of an individual's identity, evolving over time and fluctuating during different life stages (van den Brink et al., 2018). As individuals transition from youth to adulthood, they often perceive a decline in their physical capabilities and pay less attention to aspects that were previously significant (Kavehzadeh et al., 2016). Body image is not exempt from this pattern, and it undergoes a process of gradual decline. In reality, body image—

E-ISSN: 2980-9681

encompassing evaluations of facial appearance, body proportion, and perceived weight—directly influences one's level of body satisfaction or dissatisfaction (Lee & Jang, 2021). The term "body image concern" refers to anxiety related to an imagined or exaggerated physical flaw. This construct has both perceptual and attitudinal dimensions, wherein individuals experience persistent anxiety about their appearance and are continuously aware of social evaluations regarding their bodies (Yew, 2019).

Kavehzadeh et al. (2020) found that dermatological conditions significantly impact body image. Li and Jang (2021) demonstrated that body image, self-insight, and confidence in mental health influence medication adherence in young adult women with psychological disorders (Kavehzadeh et al., 2016). Yew (2019) found a correlation between body image satisfaction and adherence to physical activity among college students (Yew, 2019).

Illness perception refers to patients' structured cognitive representations or beliefs about their disease. These perceptions have been identified as key determinants of behavior and are associated with several important outcomes, including treatment adherence and functional improvement (Boughdady et al., 2024). Additionally, illness perception is defined as a patient's cognitive evaluation and personal understanding of a medical condition and its potential consequences. It shapes how individuals experience and mentally structure their lives around their disease. These perceptions may include both positive and negative beliefs about the illness, which can influence coping strategies and the perceived controllability or severity of the disease (Hooshmandi et al., 2024; Rasha Abed et al., 2022).

Illness perception is a subjective viewpoint that focuses on an individual's experience and condition due to a disease, offering insights into how chronic patients can maintain health-related behaviors. This perception is influenced by cognitive and emotional factors, including the expected disease timeline, life consequences of the illness, approaches to disease control or treatment, disease identity and cause, and associated emotions such as fear or anxiety (Chong et al., 2020; Pour Asmail Niazi et al., 2021). An individual's perception of their illness serves as a driving force and starting point for coping strategies and action plans for managing the disease and is associated with psychosocial and clinical outcomes in patients.

Illness perception also varies across different socio-cultural contexts and age groups. Younger patients tend to have greater confidence in their ability to manage their disease but may still harbor fears related to their condition. In contrast, older individuals adhere to treatment only when they perceive a direct need for self-care and exhibit less frustration related to their illness (Chong et al., 2020).

The present study aims to examine the structural relationship of treatment adherence based on illness perception in patients with psoriasis, considering the mediating role of body image concern.

2. Methods and Materials

2.1. Study Design and Participants

The present study employs a descriptive-correlational research design using structural modeling. The statistical population consists of patients diagnosed with psoriasis in Tehran. Based on the inclusion and exclusion criteria, 250 patients with psoriasis will be selected using a purposive convenience sampling method. After selecting the sample, participants will be invited to the study and provided with comprehensive and honest explanations regarding the study's objectives, duration, and methodology. Additionally, they will be assured of the confidentiality of their personal information, and informed consent will be obtained in writing. Participants will be assured that all collected information will remain strictly confidential and that the study results will be published in aggregate form without mentioning any identifying details.

2.2. Measures

2.2.1. Treatment Adherence

The Treatment Adherence Questionnaire was developed by Ziaei (2009) and consists of 26 items. This questionnaire measures three dimensions of adherence: dietary adherence (13 items), medication adherence (6 items), and activity pattern adherence (7 items). The response format varies, with some items having a 4-point Likert scale (scored 0-3) and others using a 5-point Likert scale (scored 0-4). Certain items (11, 12, and 13) are scored in reverse. The medication adherence subscale consists of 6 items on a 5-point Likert scale, with a total possible score of 24. In this subscale, the final item is scored directly, while the remaining items are reverse-scored. The activity pattern adherence subscale consists of 7 multiple-choice items, of which 4 items use a 4-point scale and 3 items use a 3-point scale, with a total score of 18. All questions in this subscale are scored directly. The construct validity and content validity of the questionnaire were confirmed, and its reliability, measured

E-ISSN: 2980-9681

using Cronbach's alpha, ranged between 0.86 and 0.95 (Afshari, 2018; Ghasempour et al., 2022).

2.2.2. *Body Image Concern*

The Body Image Concern Inventory was developed by Littleton (2005) and consists of 19 items. It includes two subscales: Dissatisfaction and embarrassment about appearance (items: 1, 3, 5, 8, 9, 14, 15, 16, 17, 18, 19). Checking and concealing perceived defects (items: 2, 4, 6, 7, 10, 11, 12, 13). The total score ranges from 19 to 95, where a higher score indicates a more negative body image and greater concern about body appearance. Responses are rated on a 5-point Likert scale (1–5). The construct validity and content validity of the inventory were confirmed by the original developer, with a Cronbach's alpha reliability coefficient of 0.87. In Iran, Besaknejad and Ghaffari (2007) translated and adapted the inventory, renaming it as the Fear of Body Deformity Scale, and administered it to 263 male and female university students in Ahvaz. The Cronbach's alpha for male students, female students, and the total sample was reported as 0.93, 0.95, and 0.95, respectively (Kavehzadeh et al., 2016).

2.2.3. *Illness Perception*

The Illness Perception Questionnaire was developed by Broadbent et al. (2006) and consists of 9 items. The first 8 items are scored on a scale ranging from 0 to 80, while item 9 is an open-ended question, asking participants to list the three primary causes they attribute to their illness. The construct validity and content validity were confirmed by Broadbent et al. (2006), and its Cronbach's alpha reliability was reported as 0.86. In Iran, Bazazian et al. (2010) translated and validated the questionnaire, reporting a Cronbach's alpha reliability of 0.80 and a test-retest reliability coefficient of 0.75 over a six-week interval (Boughdady et al., 2024; Pour Asmail Niazi et al., 2021).

2.3. *Data Analysis*

For data analysis, both descriptive and inferential statistical methods will be used. In the descriptive analysis, measures such as frequency, mean, and standard deviation will be utilized. To analyze the collected data, structural regression equation modeling will be employed. Data analysis will be conducted using SPSS 18 and AMOS 23 software.

3. Findings and Results

Table 1 presents the descriptive data, including the mean and standard deviation of the study variables and subscales.

Table 1

Descriptive Statistics for Illness Perception

Variable	Minimum	Maximum	Mean	Standard Deviation
Illness Perception	8	64	33.19	4.27
Dietary Adherence	9	34	21.69	3.43
Medication Adherence	5	17	11.04	2.16
Activity Pattern	7	20	13.32	2.59
Treatment Adherence	21	71	46.05	6.77
Dissatisfaction	11	48	29.82	4.24
Concern	8	35	20.54	2.32
Body Image Concern	19	83	50.36	7.65

When examining the normality of the data, the researcher tested the hypothesis that the data distribution is normal at a 0.05 error level. If the test statistic is greater than or equal to 0.05, there is no reason to reject the null hypothesis, which suggests that the data is normally distributed.

E-ISSN: 2980-9681

Table 2

Kolmogorov-Smirnov Test for Data Normality

Variable	Kolmogorov-Smirnov Test	Significance Level (p-value)
Illness Perception	2.634	0.000
Dissatisfaction	1.190	0.117
Concern	1.563	0.015
Body Image Concern	2.307	0.000
Dietary Adherence	2.094	0.000
Medication Adherence	1.578	0.014
Activity Pattern	1.539	0.018
Treatment Adherence	1.921	0.001

Overall, as shown in Table 2, the Kolmogorov-Smirnov test for identifying data normality indicates that the data is not normally distributed.

Table 3

Correlation Matrix for Illness Perception, Body Image Concern, and Treatment Adherence

Variable	1	2	3	4	5	6	7	8
Illness Perception	1							
Dissatisfaction	-0.26	1						
Concern	-0.25	0.61	1					
Body Image Concern	-0.29	0.77	0.70	1				
Dietary Adherence	0.24	-0.16	-0.20	-0.24	1			
Medication Adherence	0.26	-0.19	-0.21	-0.22	0.68	1		
Activity Pattern	0.25	-0.17	-0.19	-0.26	0.57	0.75	1	
Treatment Adherence	0.28	-0.20	-0.22	-0.28	0.73	0.81	0.72	1

$p < 0.01$ for all correlations.

The results in Table 3 indicate a significant correlation between illness perception and body image concern with treatment adherence. Specifically, there is a significant positive correlation between body image concern (dissatisfaction and concern) and treatment adherence (dietary adherence, medication adherence, and activity pattern) among participants. Additionally, there is a significant positive correlation between illness perception and treatment adherence.

Table 4

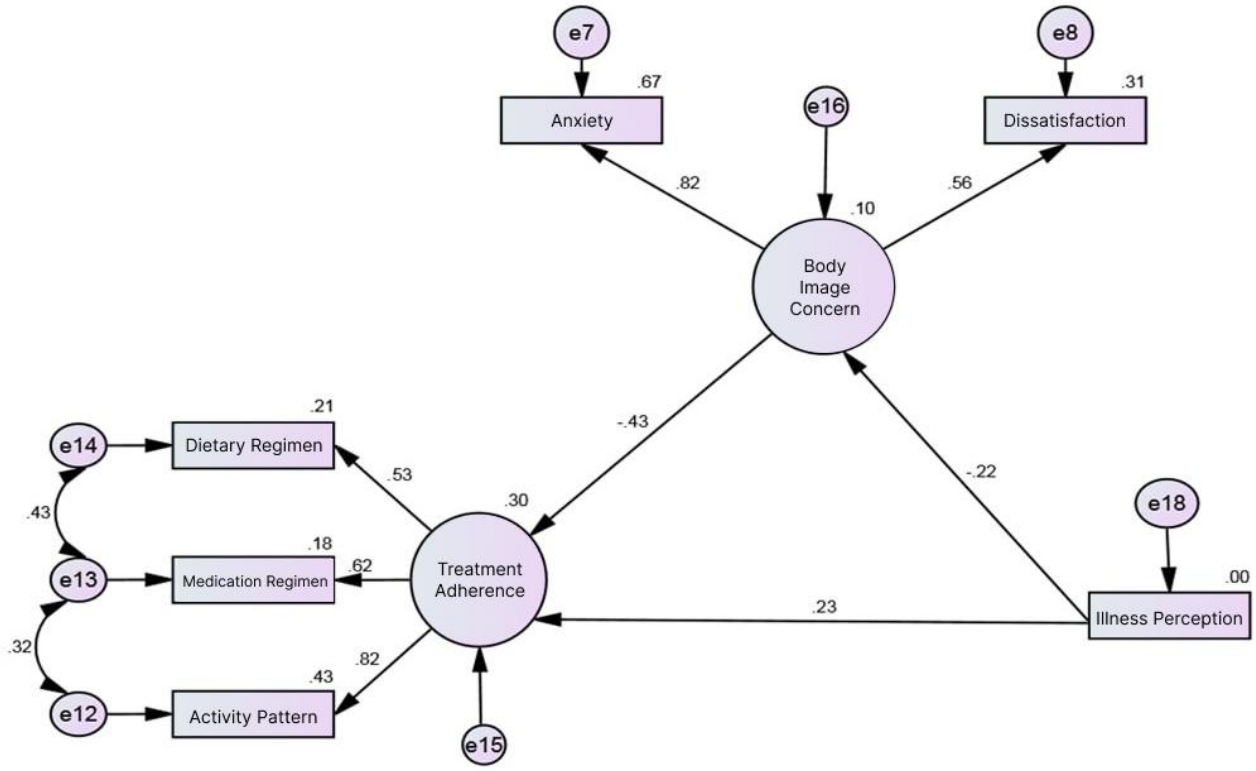
Indirect Pathway Estimation Using the Bootstrap Method

Variable	B	R^2	Lower Bound	Upper Bound	Significance Level (p-value)
Illness Perception → Treatment Adherence via Body Image Concern	-0.451	0.380	-0.597	-0.446	0.01

E-ISSN: 2980-9681

Figure 1

Model of Illness Perception on Treatment Adherence with the Mediating Role of Body Image Concern



As seen in Table 4, the indirect pathways considered in the model, based on the standardized coefficients (β), confirm the indirect effect of illness perception on treatment adherence through the mediating role of body image concern. The bootstrap estimation method confirms the significance of this pathway.

Table 5

Goodness-of-Fit Indices from Data Analysis and Variables

Type of Index	Goodness-of-Fit Indices	Acceptable Values	Pre-Modification Values	Conclusion
Absolute	Chi-Square Goodness-of-Fit Test (χ^2)	Nil	1177.256	-
	Goodness-of-Fit Index (GFI)	≥ 0.90	0.995	Acceptable Fit
	Adjusted Goodness-of-Fit Index (AGFI)	≥ 0.90	0.989	Acceptable Fit
Comparative	Normed Fit Index (NFI)	≥ 0.90	0.991	Acceptable Fit
	Comparative Fit Index (CFI)	≥ 0.90	0.989	Acceptable Fit
	Tucker-Lewis Index (TLI)	≥ 0.90	0.995	Acceptable Fit
	Relative Fit Index (RFI)	≥ 0.90	0.990	Acceptable Fit
Parsimonious	Parsimonious Normed Fit Index (PNFI)	≤ 0.50	0.495	Unacceptable Fit
	Root Mean Square Error of Approximation (RMSEA)	≤ 0.08	0.081	Unacceptable Fit
	Chi-Square/Degrees of Freedom Ratio (χ^2/df)	≤ 3.00	3.131	Unacceptable Fit
	Degrees of Freedom (df)	≤ 0	376	-
	p-value	≥ 0.05	0.001	Acceptable Fit

E-ISSN: 2980-9681

Based on Table 5, the obtained goodness-of-fit statistics from the three categories of indices (absolute, comparative, and parsimonious) indicate that the initial model does not have an acceptable fit. The model requires modifications to account for error variances and improve fit indices. These modifications were implemented using two methods: fixing parameters and freeing parameters, leading to an improved fit.

Table 6

Goodness-of-Fit Indices After Two-Step Model Modification

Type of Index	Goodness-of-Fit Indices	Acceptable Values	Post-Modification Values	Conclusion
Absolute	Chi-Square Goodness-of-Fit Test (χ^2)	Nil	1041.964	-
	Goodness-of-Fit Index (GFI)	≥ 0.90	0.999	Acceptable Fit
	Adjusted Goodness-of-Fit Index (AGFI)	≥ 0.90	0.996	Acceptable Fit
Comparative	Normed Fit Index (NFI)	≥ 0.90	0.998	Acceptable Fit
	Comparative Fit Index (CFI)	≥ 0.90	0.995	Acceptable Fit
	Tucker-Lewis Index (TLI)	≥ 0.90	0.998	Acceptable Fit
	Relative Fit Index (RFI)	≥ 0.90	0.998	Acceptable Fit
Parsimonious	Parsimonious Normed Fit Index (PNFI)	≤ 0.50	0.523	Acceptable Fit
	Root Mean Square Error of Approximation (RMSEA)	≤ 0.08	0.049	Acceptable Fit
	Chi-Square/Degrees of Freedom Ratio (χ^2/df)	≤ 3.00	2.786	Acceptable Fit
	Degrees of Freedom (df)	≤ 0	374	-
	p-value	≥ 0.05	0.001	Acceptable Fit

Following the initial model assessment, it was determined that some indices required modifications to achieve an acceptable fit within the standard thresholds. After evaluating the final model and applying parameter constraints and adjustments in the second step, the fit indices obtained in Table 6 for the absolute, comparative, and parsimonious indices reached an acceptable level, confirming that the final model has a good fit.

4. Discussion and Conclusion

The first finding of the present study indicates that illness perception has a direct effect on treatment adherence in individuals with psoriasis.

Based on the results of the analysis, the third hypothesis of the study, which stated that illness perception has a direct effect on treatment adherence in individuals with psoriasis, was confirmed. These results align with the prior findings (Boughdady et al., 2024; Oliveira-Kumakura et al., 2019; Pour Asmail Niazi et al., 2021).

To explain these findings, it can be stated that individuals who have a better understanding of the severity and effects of their illness are generally more inclined to adhere to prescribed treatments. This awareness can contribute to skin protection and prevention of disease-related complications. Individuals who have experienced severe consequences or complications from psoriasis are more likely to recognize the importance of treatment adherence and follow medical recommendations. Accurate and comprehensive information about the disease and treatment methods can increase patients' confidence in their treatment choices, encouraging them to adhere to their regimen (Sampasa-Kanyinga et al., 2017).

Receiving support from family and friends can also influence an individual's perception of the disease and treatment, creating a greater sense of responsibility for following treatment plans. Individuals with a positive perception of themselves and their ability to manage their illness are generally more committed to treatment adherence. Illness perception can also influence an individual's mental health (Chong et al., 2020). Those who feel in control of their disease tend to have a more positive outlook on treatment and adherence.

E-ISSN: 2980-9681

Illness perception includes factors such as an individual's understanding of the causes of the disease, its severity, its impact on daily life, and associated emotions. In other words, how a person perceives their condition can significantly influence their treatment-related behaviors. Individuals who have a clearer understanding of the causes and symptoms of psoriasis may be more likely to adhere to treatment programs. This awareness can help them recognize the importance of treatment and its effects on their quality of life (Boughdady et al., 2024).

A correct understanding of the disease and its effects can lead individuals to realize that treatment is essential and must be followed. When individuals feel that they have a good understanding of their illness, they tend to have greater control over their condition, which in turn can serve as a motivator for treatment adherence (Tarighi & Kiani, 2017). Individuals with a positive perception of their illness may set specific goals for improving their condition, ultimately increasing their treatment adherence. Moreover, those with a better understanding of their disease tend to ask informed questions to their physician, leading to better communication and a deeper understanding of treatment methods (Sofia et al., 2018).

Effective communication between patients and healthcare providers can improve patients' understanding of treatments and their importance in managing their condition. A positive illness perception can facilitate the acceptance of medical recommendations and adherence to them. In summary, a positive and informed perception of illness can lead to more effective treatment behaviors, thereby enhancing treatment adherence (Oliveira-Kumakura et al., 2019). Illness perception can directly influence treatment adherence in individuals with psoriasis. A proper understanding of the disease, a sense of control, effective communication with healthcare providers, and improved mental health are all factors that can contribute to better treatment adherence.

The second finding indicates that body image concern has a direct effect on treatment adherence in individuals with psoriasis.

Based on the results of the analysis, the third hypothesis, which stated that body image concern has a direct effect on treatment adherence in individuals with psoriasis, was confirmed. These findings are consistent with the prior results (Kavehzadeh et al., 2016; Lee & Jang, 2021; Sampasa-Kanyinga et al., 2017).

From a social perspective, it can be explained that damaged skin due to psoriasis may lead to feelings of embarrassment or shame. These emotions can result in reduced self-confidence and a tendency to avoid public settings, which in turn may lead to non-adherence to recommended treatments (Sampasa-Kanyinga et al., 2017).

Body image refers to how an individual perceives and feels about their body. This perception can be influenced by factors such as culture, media, and personal experiences. For individuals suffering from conditions like psoriasis, body image may become highly negative. Concerns about body image and its psychological impact can contribute to anxiety or depression, which may further influence treatment adherence and lead to treatment discontinuation or rejection.

If an individual feels dissatisfied with their skin condition, they may lack the motivation to follow their treatment plan and may not fully adhere to medical recommendations (Lee & Jang, 2021). Individuals with heightened concerns about body image may be highly sensitive to social judgments regarding their condition. This sensitivity can lead to avoiding medical visits or treatment use.

Body image concern may also reduce an individual's focus on the benefits of treatment and its importance, as their attention may be primarily directed toward their appearance and negative experiences related to their skin. Individuals with psoriasis may feel ashamed of their skin's appearance, leading to reduced willingness to seek medical care or adhere to treatment (Yew, 2019).

Fear of social judgment can prevent individuals from engaging in social activities, pushing them toward isolation. Body image concern can also lower self-confidence, which may further affect an individual's motivation to adhere to treatment regimens, as they may feel that the treatment will not significantly improve their appearance.

Patients may become more focused on negative emotions and worries rather than their treatment and overall improvement (Kavehzadeh et al., 2016). If individuals believe that treatments will not improve their body image, they may lose motivation to continue the treatment. Media portrayals and advertisements may create unrealistic expectations of treatment outcomes, leading to disappointment and demotivation if those expectations are not met.

Body image concern can influence multiple psychological and social factors, ultimately leading to reduced treatment adherence in individuals with psoriasis (Sampasa-Kanyinga et al., 2017). Feelings of shame, low self-confidence, negative mental health impacts, and uncertainty about treatment efficacy can serve as significant

E-ISSN: 2980-9681

barriers to treatment adherence. Therefore, addressing the psychological and social dimensions of psoriasis and providing psychological support systems can significantly help patients adhere to their treatment.

The third finding of the study indicates that illness perception affects treatment adherence indirectly through the mediating role of body image concern in individuals with psoriasis.

Based on the results of the analysis, the seventh hypothesis, which stated that illness perception affects treatment adherence indirectly through the mediating role of body image concern in individuals with psoriasis, was confirmed. These findings align with the prior results (Kavehzadeh et al., 2016; Oliveira-Kumakura et al., 2019; Pan et al., 2021; Pour Asmail Niazi et al., 2021; Quinto et al., 2022; Sampasa-Kanyinga et al., 2017; Yew, 2019).

From a cognitive perspective, individuals who are concerned about their body image may avoid treatment due to the physical changes associated with psoriasis. These concerns can lead to feelings of shame or dissatisfaction, which may negatively impact their motivation and mental state for following treatment.

A negative perception of body image can lower self-confidence, making individuals more skeptical about the effectiveness of treatments (Sampasa-Kanyinga et al., 2017). If individuals have had negative treatment experiences in the past, this may influence their illness perception and adherence to treatment (Chong et al., 2020).

In conclusion, illness perception can indirectly influence treatment adherence through increased body image concerns, highlighting the importance of addressing both psychological and social aspects in psoriasis treatment to improve adherence and quality of life.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We hereby thank all individuals for participating and cooperating us in this study.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

References

Aardoom, J. J., Loheide-Niesmann, L., Ossebaard, H. C., & Riper, H. (2020). Effectiveness of eHealth interventions in improving treatment adherence for adults with obstructive sleep apnea: meta-analytic review. *Journal of medical Internet research*, *22*(2), e16972. https://doi.org/10.2196/16972

Adesanya, E. I., Matthewman, J., Schonmann, Y., Hayes, J. F., Henderson, A., Mathur, R., Mulick, A. R., Smith, C. H., Langan, S. M., & Mansfield, K. E. (2023). Factors associated with depression, anxiety and severe mental illness among adults with atopic eczema or psoriasis: a systematic review and meta-analysis. *British Journal of Dermatology*, *188*(4), 460-470. https://doi.org/10.1093/bjd/ljac132

Afshari, A. (2018). Predicting medication adherence in diabetic patients based on self-compassion, emotional regulation, and spiritual well-being. *Behavioral Sciences Research*, *16*(4), 466-475. https://doi.org/10.52547/rbs.16.4.466

Ahmadi, A. (2024). Predictors of Impulsiveness: The Roles of Sleep Quality and Body Image Dissatisfaction in Physically Disabled Adolescent Girls. *Psychological Research in Individuals with Exceptional Needs*, *2*(2), 28-35. https://journals.kmanpub.com/index.php/prien/article/view/3343

Arıkan, F., Kartöz, F., Karakuş, Z., Altınışık, M., Özer, Z., & Korcum Şahin, A. F. (2024). Body image and social appearance anxiety in patients with cancer undergoing radiotherapy: Across-sectional study. *BMC Psychol*, *12*(1), 363. https://doi.org/10.1186/s40359-024-01856-w

Boughdady, A. M., Ghazi, H. A., Elmawla, A., Abd Elhameed, D., & Ali, S. M. (2024). Effect of Illness Perception and Medication Adherence on Self-Care Ability of Elderly Patients with Hypothyroidism. *NILES journal for Geriatric and Gerontology*, *7*(1), 127-151. https://doi.org/10.21608/niles.2024.320452

Chen, X., Du, L., Wu, R., Xu, J., Ji, H., Zhang, Y., Zhu, X., & Zhou, L. (2020). The effects of family, society and national policy support on treatment adherence among newly diagnosed tuberculosis patients: a cross-sectional study. *BMC Infectious Diseases*, *20*(1), 1-11. https://doi.org/10.1186/s12879-020-05354-3

E-ISSN: 2980-9681

Chong, Y. Y., Chien, W. T., Cheng, H. Y., Chow, K. M., Kassianos, A. P., Karekla, M., & Gloster, A. (2020). The role of illness perceptions, coping, and self-efficacy on adherence to precautionary measures for COVID-19. *International journal of environmental research and public health*, *17*(18), 6540. https://doi.org/10.3390/ijerph17186540

Costantino, F., Bahier, L., Tarancón, L. C., Leboime, A., Vidal, F., Bessalah, L., Breban, M., & D'Agostino, M. A. (2021). COVID-19 in French patients with chronic inflammatory rheumatic diseases: clinical features, risk factors and treatment adherence. *Joint Bone Spine*, *88*(1), 105095. https://doi.org/10.1016/j.jbspin.2020.105095

Dwi Nur, R. (2021). Jurnal-Self Awareness as a mediator for self-directed learning and goal setting on students. https://repo-dosen.ulm.ac.id/handle/123456789/21050

El Abdellati, K., De Picker, L., & Morrens, M. (2020). Antipsychotic treatment failure: a systematic review on risk factors and interventions for treatment adherence in psychosis. *Frontiers in Neuroscience*, *14*, 531763. https://doi.org/10.3389/fnins.2020.531763

Fragoulis, G. E., Evangelatos, G., Arida, A., Bournia, V. K., Fragiadaki, K., Karamanakos, A., Kravvariti, E., Laskari, K., Panopoulos, S., Pappa, M., Tektonidou, M. G., & Sfikakis, P. P. (2020). Treatment adherence of patients with systemic rheumatic diseases in COVID-19 pandemic. *Annals of the Rheumatic Diseases*. https://doi.org/10.1136/annrheumdis-2020-217935

Ghasempour, H., Darzi Azadbani, M., Mirzaian, B., Sangani, A., & Shakarian, S. (2022). Modeling the effect of early maladaptive schemas on treatment adherence with the mediating role of emotional regulation and resilience in coronary heart disease patients. *Nursing Education*, *11*(4), 13-24. https://jne.ir/article-1-1360-en.html

Hedemann, T. L., Liu, X., Kang, C. N., & Husain, M. I. (2022). Associations between psoriasis and mental illness: An update for clinicians. *General Hospital Psychiatry*, *75*, 30-37. https://doi.org/10.1016/j.genhosppsych.2022.01.006

Hooshmandi, R., Aljaberi, M. A., Hammadi, F., & Ma, J. (2024). The Impact of Interoceptive Awareness on Pain Catastrophizing and Illness Perception. *Journal of Personality and Psychosomatic Research (JPPR)*, *2*(2), 4-10. https://doi.org/10.61838/kman.jppr.2.2.2

Kavehzadeh, A., Big Rezai, S., Nilforoushzadeh, M. A., Heydari, A., & Hosseini, S. M. (2016). Comparing body image perception in dermatology patients and healthy individuals. *Skin and Beauty*, *7*(4), 213-219. https://journals.tums.ac.ir/jdc/article-1-5218-en.html

Kleyn, C. E., Talbot, P. S., Mehta, N. N., Sampogna, F., Bundy, C., Ashcroft, D. M., Kimball, A. B., van de Kerkhof, P. C. M., ´Griffiths, C. E. M., Valenzuela, F., van der Walt, J. M., Aberra, T., & Lluís, P. U. I. G. (2020). Psoriasis and mental health workshop report: exploring the links between psychosocial factors, psoriasis, neuroinflammation and cardiovascular disease risk. *Acta dermato-venereologica*, *100*(1). https://doi.org/10.2340/00015555-3375

Lambert, J. L. W., Segaert, S., Ghislain, P. D., Hillary, T., Nikkels, A., Willaert, F., Lambert, J., & Speeckaert, R. (2020). Practical recommendations for systemic treatment in psoriasis according to age, pregnancy, metabolic syndrome, mental health, psoriasis subtype and treatment history (BETA-PSO: Belgian Evidence-based Treatment Advice in Psoriasis; part 1). *Journal of the European Academy of Dermatology and Venereology*, *34*(8), 1654-1665. https://doi.org/10.1111/jdv.16684

Lee, E., & Jang, M. H. (2021). The influence of body image, insight, and mental health confidence on medication adherence in young adult women with mental disorders. *International journal of environmental research and public health*, *18*(8), 3866. https://doi.org/10.3390/ijerph18083866

Li, F., Zhang, Y. L., Chen, X., Zhang, J. Y., Fu, L., Chai, B., & Chen, H. X. (2023). Mental stress affects the occurrence and development of psoriasis through neuroendocrine-immune regulation: a narrative review. *International Journal of Dermatology and Venereology*, *6*(02), 87-95. https://doi.org/10.1097/JD9.0000000000000317

Lippincott, C. K., Perry, A., Munk, E., Maltas, G., & Shah, M. (2022). Tuberculosis treatment adherence in the era of COVID-19. *BMC Infectious Diseases*, *22*(1), 800. https://doi.org/10.1186/s12879-022-07787-4

Oliveira-Kumakura, A. R. D. S., Bezutti, L. M., Silva, J. L. G., & Gasparino, R. C. (2019). Functional and self-care capacity of people with multiple sclerosis. *Revista latino-americana de enfermagem*, *27*. https://doi.org/10.1590/1518-8345.3068.3183

Pan, J., Hu, B., Wu, L., & Li, Y. (2021). The effect of social support on treatment adherence in hypertension in China. *Patient Preference and Adherence*, 1953-1961. https://doi.org/10.2147/PPA.S325793

Pour Asmail Niazi, M., Farshbaf Mani Safat, F., Khademi, A., & Mashgi, S. (2021). The mediating role of coping strategies in the relationship between illness perception, perceived social support, and treatment adherence in cardiovascular patients. *Nursing Psychology*, *9*(6), 98-108. https://ijpn.ir/browse.php?a_code=A-10-1922-1&sid=1&slc_lang=en

Quinto, R. M., De Vincenzo, F., Graceffa, D., Bonifati, C., Innamorati, M., & Iani, L. (2022). The relationship between alexithymia and mental health is fully mediated by anxiety and depression in patients with psoriasis. *International journal of environmental research and public health*, *19*(6), 3649. https://doi.org/10.3390/ijerph19063649

Rasha Abed, H., Dhyaaldian, S. M. A., Merriam Ghadhanfar, A., Mohammed Wafqan, H., Abeer Ameen, B., Muneam Hussein, A., Safa, K. H., Zahraa Tariq, S., Huda Takleef, A., Bahaa Aldin Fawzi, S., & Shaker Holh, S. (2022). Psychometric Evaluation of the Brief Illness Perception Questionnaire among Iraqi Patients with Type II Diabetes. *International Journal of Body, Mind and Culture*, *9*(2), 77-86. https://doi.org/10.22122/ijbmc.v9i2.400

Sampasa-Kanyinga, H., Hamilton, H. A., Willmore, J., & Chaput, J. P. (2017). Perceptions and attitudes about body weight and adherence to the physical activity recommendation among adolescents: the moderating role of body mass index. *Public Health*, *146*, 75-83. https://doi.org/10.1016/j.puhe.2017.01.002

Sofia, S. A., Lysaker, P. H., Smith, E., Celesia, B. M., & Dimaggio, G. (2018). Therapy adherence and emotional awareness and regulation in persons with human immunodeficiency virus. *The Journal of Nervous and Mental Disease*, *206*(12), 925-930. https://doi.org/10.1097/NMD.0000000000000901

Tarighi, S., & Kiani, Q. (2017). Predicting treatment adherence in type 2 diabetic patients based on emotional regulation, anxiety disorders, sleep issues, and social performance. 6th Congress of the Iranian Psychological Association, Tehran.

van den Brink, F., Vollmann, M., Smeets, M. A., Hessen, D. J., & Woertman, L. (2018). Relationships between body image, sexual satisfaction, and relationship quality in romantic couples. *Journal of Family Psychology*, *32*(4), 466. https://doi.org/10.1037/fam0000407

Wagnew, F., Gray, D., Tsheten, T., Kelly, M., Clements, A. C., & Alene, K. A. (2023). Effectiveness of nutritional support to improve treatment adherence in patients with tuberculosis: a

E-ISSN: 2980-9681

systematic review. *Nutrition Reviews*. https://doi.org/10.1093/nutrit/nuad120

Werner, M. C. F., Wirgenes, K. V., Shadrin, A., Lunding, S. H., Rødevand, L., Hjell, G., Ormerod, M. B. E. G., Haram, M., Agartz, I., Djurovic, S., Melle, I., Aukrust, P., Ueland, T., Andreassen, O. A., & Steen, N. E. (2022). Immune marker levels in severe mental disorders: associations with polygenic risk scores of related mental phenotypes and psoriasis. *Translational psychiatry*, *12*(1), 38. https://doi.org/10.1038/s41398-022-01811-6

Yew, W. J. (2019). *Relationship between Body Image Satisfaction and Physical Activity Adherence among College Students* Tunku Abdul Rahman University College]. https://eprints.tarc.edu.my/14528/

E-ISSN: 2980-9681