



Original Article

Association of the attachment styles with depression, anxiety, and quality of life in patients with psoriasis

Onur Okan Demirci^{1*}, Bilge Ates², Eser Sagaltici³, Zehra Gizem Ocak⁴, Ilknur Kivanc Altunay⁵

¹Department of Psychology, Istanbul Gelisim University, Istanbul, Turkey,

²Department of Dermatology, Estetik International Hospital, Istanbul, Turkey,

³Department of Psychiatry, Bagcilar Training and Research Hospital, Istanbul, Turkey,

⁴Department of Psychology, Support to Life Association, Istanbul, Turkey,

⁵Dermatology and Venereology Clinic, Sisli Hamidiye Etfal Teaching and Research Hospital, University of Health Sciences, Istanbul, Turkey

Abstract

Objectives: This is a cross-sectional study to investigate the attachment styles and their impact on depression, anxiety, and quality of life in people with psoriasis. **Methods:** All participants completed socio-demographic and illness specific questionnaires along with Dermatology Life Quality Index (DLQI), Hospital Anxiety and Depression Scale (HADS) and Adult Attachment Style Scale (AASS). 100 individuals with psoriasis and 130 individuals with no dermatological problems participated in the study. **Results:** HADS scores for depression (38% versus 15.4%, $P < .001$) and anxiety (28% versus 6.9%, $P < .001$) were higher in participants with psoriasis compared to the healthy participants in the control group. AASS scores of participants for anxious/ambivalent attachment (13.7±4.0 versus 13.3±3.9, $P = .465$), secure attachment (15.8±4.4 versus 16.2±3.9, $p = .510$), and avoidant attachment (11.0±3.6 versus 11.3±3.6, $P = .598$) did not differ significantly in two groups. There was a significant correlation between DLQI scores and anxious/ambivalent attachment scores of participants with psoriasis ($P < .05$, $r = .222$). HADS scores of participants with psoriasis were also found significantly correlated with insecure attachment styles; anxious/ambivalent attachment (depression, $P < .001$ / anxiety, $P < .001$), avoidant attachment (depression, $p < .001$ / anxiety, $p < .01$). **Conclusion:** This study demonstrates that there is a relationship between the insecure attachment styles and depression, anxiety and reduced quality of life in people with psoriasis and also support the idea that attachment insecurities can impair the physiological stress response by increasing the perceived stress in these patients.

Key words: Psoriasis, attachment, life quality, depression, anxiety

INTRODUCTION

Psoriasis is a chronic autoimmune skin disease which often presents psychosocial comorbidities.^[1] It has long been found to be associated with stress, depression, anxiety, and reduced quality of life.^[2] Although some studies have shown conflicting results,^[3] there is strong evidence that emotional stress plays an important role in the precipitation and aggravation of

psoriasis by affecting immune functions.^[4] Besides, the recent studies with larger samples have found higher frequency of schizophrenia in psoriatic patients compared to the general population, which strengthens the relationship between the immunomediated neuropsychiatric diseases and psoriasis.^[5,6]

Address for correspondence: Dr. Onur Okan Demirci,
Department of Psychology, Istanbul Gelisim University, Istanbul, Turkey.
E-mail: oodemirci@gelisim.edu.tr

Submitted: 24-Jun-2019 Revised: 02-Jan-2020 Accepted: 18-Sep-2020 Published: 29-May-2020

Access this article online

Quick Response Code:



Website:
www.dermisnica.org

DOI:
10.4103/ds.ds_35_19

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How to cite this article: Demirci OO, Ates B, Sagaltici E, Ocak ZG, Altunay IK. Association of the attachment styles with depression, anxiety, and quality of life in patients with psoriasis. *Dermatol Sin* 2020;38:81-7.

Attachment is the emotional bond between the infant and the caregiver, characterized by specific behaviors in children, such as seeking proximity to the caregiver when distressed or threatened.^[7,8] Secure or insecure attachment styles are established in childhood and continue to function lifelong. According to the attachment theory, the infant's thoughts and feelings on self and others are formed through the relationship between the infant and the caregiver, which referred as “*internal working models*.”^[8] The internal working model is a template for later attachments, which maintains attachment insecurities and influences adult relationships. Bowlby defines secure attachment type with involved and caring parent and insecure attachment type with an inconsistent, neglectful, and interfering parent. Securely attached individuals develop well-organized internal working models of self in which they feel being loved and adequate, build close relationships without fear of abandonment, and they are able to cope with negative affect. On the other hand, insecurely attached individuals tend to have negative expectations from their interactions, avoid close relationships to prevent loss and rejection, and feel inadequate in regulating their emotions.^[7-9] Insecure attachment styles are known as “avoidant” and “anxious/ambivalent.”^[10] Individuals with avoidant attachment style have negative thoughts on others, and therefore, they avoid close relationships, while individuals with anxious/ambivalent attachment style have negative thoughts on self yet value others which results with constant need of love and approval from others.^[11] Besides, people with anxious/ambivalent attachment styles are found to have involuntary and recurring thoughts following a negative experience,^[12] and people with avoidant attachment styles are thought to perceive a higher threat in case of a stressful event.^[13] Inadequate early attachment experiences lead to attachment insecurities and consequently impair individuals' stress responses, help-seeking behaviors, and hypothalamus–pituitary–adrenal (HPA) axis that mediates involuntary stress regulation.^[14] A number of scientific reports exist regarding the relationship between attachment styles and dermatological psychosomatic diseases, such as atopic dermatitis, psoriasis, alopecia areata, vitiligo, and chronic urticaria, with a general consensus that attachment insecurities are more common in patients with dermatological problems compared to control subjects.^[4]

The type of attachment relationship has recently become a more important guide to understand the underlying mechanisms of chronic autoimmune diseases and psychosomatic illnesses. However, there is still a lack of studies that have directly investigated its impact on psoriasis.^[4,15] In fact, the etiopathogenesis of psoriasis remains unclear until today, although it has existed since Hippocrates' days.^[1]

There is also a research gap in the existing literature concerning the link between psoriasis and attachment insecurities. Therefore, the present study aimed to investigate the attachment styles and their impact on depression, anxiety, and quality of life in people with psoriasis.

MATERIALS AND METHODS

The study took place between July 2012 and December 2012. Participants consisted of 100 patients diagnosed with psoriasis, registered in the Department of Dermatology, Sisli Etfal Hospital, 130 healthy controls from hospital personnel, and patient relatives with no skin problem who are matched to the psoriasis patients with regard to age, gender, and education level. The study was conducted in accordance with the Helsinki Declaration, with the approval of the Ethics Review Board of Istanbul Sisli Etfal Research and Training Hospital (Approval no. 116 obtained on October 23rd, 2012). Written informed consent was obtained from each participant.

Participants

Inclusion criteria were as follows: age between 19 and 80 years, a diagnosis of psoriasis, a minimum education of the elementary school, and voluntary participation in the study. Participants were checked for the following exclusion criteria: additional skin problems, mental retardation, and current major psychiatric or medical problems. All participants completed sociodemographic and illness-specific questionnaires along with the Dermatology Life Quality Index (DLQI), Hospital Anxiety and Depression Scale (HADS), and Adult Attachment Style Scale (AASS). Psoriasis patients also completed the Psoriasis Area and Severity Index (PASI) and Visual Analogue Scale (VAS).

Tools

Sociodemographic questionnaire

This form provides general questionnaire covering age, gender, education level, marital status, and socioeconomic status, additional systemic diseases (diabetes mellitus, hypertension, heart diseases, and thyroid diseases), illness-specific information including the area, severity, and duration of psoriasis, and stressful life events in the past 3 months.

Psoriasis area and severity index

The PASI was developed in 1978 by Fredriksson *et al.* as a tool to measure the severity and treatment efficacy of psoriasis. It combines assessments of the skin affected by psoriasis in four body areas: the head, the upper limbs, the trunk, and the lower limbs. For each area, the percentage of skin affected by psoriasis is represented with a numerical score from 0 to 6. Within each area, the severity is estimated by three psoriatic plaque signs: erythema, thickness/induration, and desquamation/scaling and scored on a 5-point scale of 0 (none) to 4 (very severe).^[16] The final PASI score of 10 and more indicates moderate and severe psoriasis.^[17]

Visual analog scale

The VAS is a self-report measure consisting of a 10 cm horizontal or vertical line with a statement at each end representing the extremes of feeling. The participants mark on the line the point that represents their perception of their current state. In this study, VAS scores were used to assess the severity of the itchiness. The scores were determined by measuring the distance (mm) between the word descriptors of “no itch” and “extreme itch.”^[18]

Dermatology life quality index

The linguistic validation of the Turkish version of the DLQI was performed by Oztürkcan *et al.*^[19] It was designed to be used in dermatology patients over the age of 16 years. It consists of 10 questions concerning aspects such as symptoms and feelings, daily activities, leisure, work or school, personal relationships, and treatment. Each question is scored from 0 to 3 and added to yield a total score between 0 and 30. Higher scores indicate a greater impairment of the patient's quality of life and 10 and more indicates moderate or severe psoriasis. The Cronbach's alpha was 0.85.^[19,20] In this study, Cronbach's alpha was found as 0.82.

Hospital anxiety and depression scale

The HADS is a self-rating scale developed to detect the presence and severity of depression and anxiety in primary care patients and the general medical population of patients.^[21] The validity and reliability study for the Turkish version of the HADS was performed by Aydemir *et al.*^[22] The HADS questionnaire consists of 14 questions divided equally between two subscales, anxiety (odd numbered items) and depression (even numbered items), with a 4-point Likert scale for each item. Two subscales are scored separately, and the total score ranges between 0 and 21 for either anxiety or depression. The Turkish version of HADS data identified a cutoff point of 10/11 for anxiety subscale and 7/8 for depression subscale. Scores higher than the cutoff points on either subscale indicate a risk group. Cronbach's alpha coefficient for HADS anxiety subscale was 0.85 and for depression subscale was 0.77. In this study, Cronbach's alpha coefficient for anxiety subscale was found as 0.70, and for depression subscale, it was found as 0.84.

Adult attachment style scale

The AASS consists of two parts. The first part developed by Hazan and Shaver is formed by three sets of statements, each describing the general behavior patterns of the three adult attachment styles; secure, ambivalent, and avoidant.^[23] The second part developed by Mikulincer includes 15 items that represent each attachment style with 5 items to identify the attachment style with the highest value on the scale.^[24] The translation validity and reliability study for the Turkish version of the AASS were performed by Kesebir *et al.*^[25] The scale was reorganized by decomposing the original items into a series of 18 items, with 6 items representing each attachment style, scored on a 5-point Likert scale (5 - totally agree and 1 - totally disagree) to identify three adult attachment styles; secure, anxious/ambivalent, and avoidant. The highest scores determine individuals' attachment styles. Therefore, using the average scores was found to be more efficient for making evaluations and especially comparisons with this scale. Three independent factors were obtained in factor analysis; the AASS demonstrated a Cronbach's alpha of 0.72 for secure, 0.82 for avoidant, and 0.85 for anxious/ambivalent. In this study, Cronbach's alpha was found 0.72 for secure, 0.78 for avoidant, and 0.77 for anxious/ambivalent.

Statistical analysis

Mean values, standard deviations (SDs), ratio levels, and frequency distributions were calculated for descriptive

statistics. Kolmogorov–Smirnov was performed to see if the data are normally distributed. The analysis of the quantitative data was carried out by independent samples *t*-test and Mann–Whitney U-test. Chi-square test was used for the analysis of the qualitative data. Pearson's correlation coefficient was calculated between quantitative variables that satisfied the conditions of normality, as determined by the Kolmogorov–Smirnov test. Otherwise, Spearman's correlation coefficient was preferred. All data from the study were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20.0 (SPSS Inc., Chicago, IL, USA).

RESULTS

Psoriatic patients and controls did not significantly differ on gender, age, education level, marital status, socioeconomic status, the presence of stressful life events in the past 3 months, and additional systemic diseases ($P > .05$) [Table 1].

Patients' duration of illness varied from 15 days to 40 years and has a mean of 82 ± 84.2 months. The participants scored between 1 and 34.8 (mean = 8.1, SD = 6.9) on PASI, and 22% of the scores were 10 or more (moderate or severe psoriasis). DLQI scores ranged between 0 and 25 (mean = 8.7, SD = 6.0), and 41% of the scores were 10 or more (moderate or severe psoriasis). 69% of the patients experienced itch, and VAS scores had a mean of 4.4 (SD = 3.6) for the severity of the itchiness. Psoriatic lesions were mostly

Table 1: Comparison of the sociodemographic attributes of patients and controls

Variables	Patient group (n=100)	Control group (n=130)	P
Age (years), mean±SD	38.8±13.7	36.1±10.5	0.098
Gender, n (%)			
Female	61 (61.0)	78 (60.0)	0.878
Male	39 (39.0)	52 (40.0)	
Marital status, n (%)			
Single	27 (27.0)	41 (31.5)	0.264
Married	57 (57.0)	79 (60.8)	
Divorced	8 (8.0)	5 (3.8)	
Widowed	8 (8.0)	5 (3.8)	
Level of education, n (%)			
Elementary	59 (59.0)	58 (44.6)	0.058
Secondary	14 (14.0)	18 (13.8)	
College	27 (27.0)	54 (41.5)	
Socioeconomic status, n (%)			
Low	20 (20.0)	22 (16.9)	0.075
Mid	43 (43.0)	75 (57.7)	
High	37 (37.0)	33 (25.4)	
Stressor factor, n (%)			
None	37 (37.0)	63 (48.5)	0.082
Exist	63 (63.0)	67 (51.5)	
Systemic disease, n (%)			
None	74 (74.0)	108 (83.1)	0.093
Exist	26 (26.0)	22 (16.9)	

Independent samples *t*-test, Chi-square test. SD: Standard deviation

Table 2: Clinical characteristics of patients with psoriasis (n=100)

Clinical characteristics	Patient
Duration of disease (months), mean±SD	82.0±84.2
Body parts, n (%)	
Corpus	73 (73.0)
Hairy skin	51 (51.0)
Hands	49 (49.0)
Face	8 (8.0)
Other	73 (73.0)
Arthritis, n (%)	12 (12.0)
Pruritus, n (%)	69 (69.0)
Pruritus VAS Score, mean±SD	4.4±3.6
PASI Score, mean±SD	8.1±6.9
DLQI total score, mean±SD	8.7±6.0
DLQI cutoff score, n (%)	
DLQI score <10	59 (59.0)
DLQI score ≥10	41 (41.0)

SD: Standard deviation, VAS: Visual Analogue Scale, PASI: Psoriasis Area and Severity Index, DLQI: Dermatology Life Quality Index

Table 3: Comparison of the Hospital Anxiety and Depression Scale anxiety and depression scores in patients and controls

Variables	Patient group (n=100)	Control group (n=130)	P
HADS-Anxiety score, mean±SD	7.5±3.9	5.7±2.7	<0.001**
HADS-Anxiety cut-off score, n (%)			
Anxiety score <10	72 (72.0)	121 (93.1)	<0.001**
Anxiety score ≥10	28 (28.0)	9 (6.9)	
HADS-Depression score, mean±SD	5.8±4.4	4.6±2.9	0.015*
HADS-Depression cutoff score, n (%)			
Depression score <7	62 (62.0)	110 (84.6)	<0.001**
Depression score ≥7	38 (38.0)	20 (15.4)	

Independent samples *t*-test, Chi-square test, **P*<0.05, ***P*<0.001. SD: Standard deviation, HADS: Hospital Anxiety and Depression Scale

found on the trunk (73%), followed by scalp (51%) and hands (49%) [Table 2].

Psoriatic patients had significantly higher scores on the anxiety subscale of the HADS (mean = 7.5, SD = 3.9) compared to controls (mean = 5.7, SD = 2.7 (*P* < 0.001)). There was also a significant difference in the number of participants who scored 10 or more on the anxiety subscale between psoriatic patients (28%) and controls (6.9%) (*P* < 0.001) [Table 3].

Psoriatic patients had significantly higher scores on the depression subscale of the HADS (mean = 5.8, SD = 4.4) compared to controls (mean = 4.6, SD = 2.9 (*P* = 0.015)). There was also a significant difference in the number of participants who scored 7 or more on the depression subscale between psoriatic patients (38%) and controls (15.4%) (*P* < 0.001) [Table 3].

There was a significant positive correlation between VAS and depression (HADS) (*P* < 0.01), as well as VAS and PASI scores (*P* < 0.01). DLQI scores were also significantly and positively correlated with anxiety scores (*P* < 0.05), depression scores (*P* < 0.01), itch severity (*P* < 0.001), and PASI scores (*P* < 0.001) [Table 4].

AASS scores for secure, anxious/ambivalent, and avoidant attachment styles did not differ significantly between psoriatic patients and controls (*P* > 0.05) [Table 5].

There was no correlation between AASS scores for secure, anxious/ambivalent and avoidant attachment styles and PASI and VAS (*P* > 0.05). Anxious/ambivalent attachment style was significantly correlated with DLQI scores (*P* < 0.05), while there was no correlation between secure and avoidant attachment styles and DLQI scores (*P* > 0.05) [Table 6]. Anxious/ambivalent attachment styles had a greater impact on psoriatic patients' quality of life.

Psoriatic patients' HADS scores for anxiety subscale were significantly positively correlated with AASS scores for anxious/ambivalent (*P* < 0.001) and avoidant attachment styles (*P* < 0.01) and significantly negatively correlated with AASS scores for secure attachment style (*P* < 0.01) [Table 6]. Anxiety scores were higher for psoriatic patients with insecure attachment styles (anxious/ambivalent and avoidant).

Psoriatic patients' HADS scores for depression subscale were significantly positively correlated with AASS scores for anxious/ambivalent and avoidant attachment styles (*P* < 0.001) and significantly negatively correlated with AASS scores for secure attachment style (*P* < 0.001) [Table 6]. Depression scores were higher for psoriatic patients with insecure attachment styles (anxious/ambivalent and avoidant).

DISCUSSION

Psoriasis is known for its strong associations with psychological and psychosomatic factors. This association creates a vicious cycle in which psoriasis is precipitated by an underlying psychological factor and aggravated by the psychiatric comorbidities, such as anxiety and depression, resulting from the psychosocial impact of having a chronic skin disease.^[26] The prevalence of depression and anxiety in patients with psoriasis is 20%–30% and 35%–45%, respectively.^[27] Looking at the HADS scores, we found that psoriatic patients had higher rates of than depression (38% vs. 15.4%) and anxiety (28% vs. 6.9%) subscales in comparing with the controls.

The attachment styles predict individuals' defensive reactions to threats and danger, thus affect their autonomic and endocrine responses to stressors.^[28] Securely attached individuals manage to maintain a sense of self-worth and respond to stress by seeking support from others to regulate stress in challenging situations. On the other hand, the attachment insecurity causes alterations in HPA axis (impaired cortisol response to stressors), increases in inflammatory cytokine levels, disrupts the activity of immune system cells and immune response, and thus,

Table 4: Effects of Hospital Anxiety and Depression Scale anxiety and depression scores on clinical findings and life quality in patients with psoriasis (n=100)

	Anxiety score	Depression score	Duration of disease (months)	Pruritus VAS	PASI	DLQI Score
Anxiety score	-	0.666***	0.014	0.054	-0.005	0.205*
Depression score		-	0.033	0.266**	0.046	0.269**
Duration of disease (months)			-	-0.129	0.179	-0.002
Pruritus VAS				-	0.287**	0.490***
PASI Score					-	0.340***
DLQI Score						-

Pearson correlation analysis, *P<0.05, **P<0.01, ***P<0.001. VAS: Visual Analog Scale, PASI: Psoriasis Area and Severity Index; DLQI: Dermatology Life Quality Index

Table 5: Adult Attachment Style Scale scores in patients and controls

Attachment styles (mean±SD)	Patient group (n=100)	Control group (n=130)	P
Anxious/ambivalent	13.7±34.0	13.3±3.9	0.465
Secure	15.8±4.4	16.2±3.9	0.510
Avoidant	11.0±3.6	11.3±3.6	0.598

Independent samples t-test, Mann–Whitney U-test. SD: Standard deviation

Table 6: Effects of Adult Attachment Style Scale scores on clinical findings, life quality, anxiety, and depression scores in patients with psoriasis (n=100)

	Anxious/ambivalent	Secure	Avoidant
Duration of disease (months)	0.116	-0.145	0.000
Pruritus VAS score	0.190	-0.079	0.134
PASI score	0.028	-0.195	-0.030
DLQI score	0.222*	-0.120	0.192
Anxiety score	0.248***	-0.207**	0.177**
Depression score	0.333***	-0.288***	0.201***

Pearson correlation analysis, *P<0.05, **P<0.01, ***P<0.001. VAS: Visual Analog Scale, PASI: Psoriasis Area and Severity Index, DLQI: Dermatology Life Quality Index

creates a predisposition to autoimmune skin diseases.^[4,15,28] In fact, previous studies pointed out that attachment insecurity was more common in patients with autoimmune skin diseases including atopic dermatitis, psoriasis, alopecia areata, vitiligo, and chronic urticaria compared to controls.^[4,15]

In this study, we found that psoriatic patients and controls had relatively similar AASS scores for secure, anxious/ambivalent, and avoidant attachment styles. Moreover, we did not found a significant correlation between AASS scores for secure, anxious/ambivalent and avoidant attachment styles and PASI and VAS. Not all studies supported the attachment styles' association with psoriasis. Picardi *et al.* investigated the impact of psychosomatic factors on precipitation and aggravation of psoriasis and failed to find a relationship between them. However, subgroup analysis indicated that psychosomatic factors might play a role in guttate and diffuse plaque psoriasis.^[15] Picardi *et al.* further investigated the role of psychosomatic factors in 33 patients with diffuse plaque

psoriasis who experienced aggravation in the past 3 months and found that avoidant attachment style and lack of social support might increase susceptibility to the aggravation of diffuse plaque psoriasis, through impaired emotional regulation. Furthermore, Janković *et al.* compared the role of psychosomatic factors in psoriatic patients experiencing aggravation during the last 6 months and controls and found greater number of stressful life events, less social support, and insecure attachment styles in psoriatic patients.^[4] It is believed that attachment insecurity leads to some skin conditions through increased susceptibility to stress and reduced social support and self-worth.^[3,4]

Interestingly, both studies that found a positive correlation between attachment insecurity and psoriasis were conducted with a sample of patients who experienced aggravation in the last 3–6 months. However, we recruited psoriatic patients without such inclusion criteria. Although the attachment styles are formed in early childhood, they develop throughout the lifespan.^[29] It is believed that stressful life events may result with changes in attachment styles.^[30,31] Therefore, it is possible that the anxious/ambivalent and avoidant patterns in the attachment styles might be increased due to recent aggravations in psoriatic symptoms. In addition, both these studies and ours used a self-report questionnaire to identify the attachment styles, which might affect the validity of the results. The clinical interview is, in fact, the most reliable way to identify attachment styles.^[32]

We found a positive correlation between DLQI scores of psoriatic patients and anxious/ambivalent attachment style, which indicates that anxious/ambivalent attachment styles had a greater impact on psoriatic patients' quality of life. To the best of our knowledge, no studies have investigated attachment styles' impact on the quality of life in psoriatic patients. Securely attached individuals' ability to either rely on their internal resources to cope with stressful situations or seek support from others to regulate their stress increases their quality of life, whereas anxious/ambivalent individuals' quality of life reduces by their exaggerated anxiety when facing the illness.^[33] Among 100 individuals with physical disabilities, Hwang *et al.* found that securely attached participants' quality of life was less affected by their condition since they have a greater life satisfaction and self-worth and respond to stress

by seeking support from others.^[34] Rabung *et al.*'s study with 124 patients with atopic dermatitis showed that securely attached participants' quality of life was less affected by the severity of their disease and perceived social support was higher.^[35] In Dieris-Hirche *et al.*'s study with 62 patients with atopic dermatitis, reduced quality of life was found correlated with attachment insecurities.^[36]

Psoriatic patients' HADS scores for anxiety and depression were significantly positively correlated with AASS scores for anxious/ambivalent and avoidant attachment styles. There is no any study that investigated the attachment styles' impact on psychiatric comorbidities, such as depression and anxiety in psoriatic patients.

Previous findings showed that anxious/ambivalent attachment style was related to a negative view of self, feelings of hostility, and predisposition to depression.^[37] The relationship between attachment insecurity and depression is affected by low self-esteem and dysfunctional attitudes.^[38] Moreover, it is believed that seeking approval from others is a pattern of anxious/ambivalent attachment style, and it predicts predisposition for depression.^[39,40] In other words, attachment anxiety evokes a constant need for attention, love and safety, and extreme sensitivity to negative evaluations by others.^[33-35] As for the avoidant attachment style, it might be thought that avoidance protects the individual from depression by decreasing the risk of sensitivity to negative evaluations of others. However, the existing literature demonstrates mixed results on this subject. There are findings proving that avoidance is in fact related to rejection sensitivity and predisposition to depression.^[40,32]

There is also a relationship between attachment insecurities and anxiety disorders. Warren *et al.* suggested that children and adolescents with anxious/ambivalent attachment style are under high risk of developing anxiety disorders.^[41] Individuals with avoidant attachment style are more likely to develop social phobia since they avoid relationships with others.^[42]

Overall, we did not find a significant difference between psoriasis patients and controls, regarding attachment styles. However, in line with our expectation, psoriasis patients with insecure attachment styles were more affected by anxiety, depression, and reduced quality of life compared to controls. The limitation of this study was its cross-sectional design, due to which we may not draw conclusions about the direction of causality. To the best of our knowledge, this is the first study that investigated the association between attachment styles and depression, anxiety, and quality of life in people with psoriasis; these data warrant further replication studies.

CONCLUSION

This study confirms the relevance of attachment styles in the course of psoriasis. Although the attachment styles are formed in early childhood and remain consistent, they still develop with interaction. Therefore, these findings may contribute

to the doctor–patient relationship and the treatment plan with psychosocial and psychopharmacologic interventions for underlying psychosocial factors and treat psoriasis more effectively.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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