Acta Derm Venereol 2016; Suppl 217: 78–82

INVESTIGATIVE REPORT

Differences Between Psoriasis Patients and Skin-healthy Controls Concerning Appraisal of Touching, Shame and Disgust

Theresa LAHOUSEN[1], Jörg KUPFER[2], Uwe GIELER[3], Angelika HOFER[4], M. Dennis LINDER[5] and Christina SCHUT[2]
University Clinics of [1]Psychiatry and [4]Dermatology, Medical University of Graz, Graz, Austria, [2]Institute of Medical Psychology, Justus-Liebig University, [3]Department of Dermatology, University Clinic, Gießen, Germany, and [5]Section of Biostatistics, University of Oslo, Oslo, Norway

Psoriasis is a chronic skin disease associated with high levels of psychological distress and considerable life impact. Feelings of shame and stigmatization can lead to avoidance of social activity and intimacy. In this study, the Touch-Shame-Disgust questionnaire (TSD-Q) was used to evaluate pleasure in touching oneself and in a partnership, parental touching during childhood and (skin-related) shame and disgust. Skin-related disgust and shame were significantly higher in psoriasis patients than in healthy controls. Moreover, psoriasis patients scored significantly lower than skin-healthy controls concerning appraisal of self-touching and parental touching. In contrast, psoriatic patients scored higher concerning appraisal of touching in a partnership. Due to the fact that low self-esteem might enhance the negative evaluation of touch and the feelings of shame and disgust, psychological interventions should be integrated in the treatment of psoriasis. ***Key words: psoriasis; shame; disgust; touching.***

Accepted Feb 16, 2016; Epub ahead of print Jun 9, 2016

Acta Derm Venereol 2016; Suppl 217: 78–82.

Theresa Lahousen, University Clinic of Psychiatry, Medical University of Graz, AT-8036 Graz, Austria. E-mail: theresa.lahousen@klinikum-graz.at

Psoriasis is a chronic inflammatory skin disease affecting 1–3% of the general world-wide population. It is characterized by keratinocyte hyperproliferation and neutrophil and lymphocytic infiltration of the skin and epidermis (1–3) and is described as a polygenic caused disease, which is triggered by a complex interaction of keratinocytes, dendritic cells and T cells (4, 5). The aetiopathogenesis of psoriasis is still not fully understood (6). The course is influenced both by endogenous and exogenous factors. In addition to mechanical stress of the skin, infectious diseases, certain medications such as beta-blockers and stress are the best-known trigger factors (7). Psoriasis can further be described as a chronic disease whose course is difficult to predict. Thus, the patients often feel helpless, so that quality of life can be severely limited (8). Additionally, psoriasis occurs on visible parts of the body like scalp, hands and nails and might provoke unpleasant reactions of others (9, 10).

Psoriasis can affect social aspects like sexual function, intimacy, partnership and social distress, which means an additional burden and leads to important clinical implications (11, 12). There are hints in the literature that patients suffering from affected skin often feel shame or the fear that the partner might be disgusted when noticing the affected skin, and the physical pleasure of being touched in an interpersonal partnership might be smaller because of feeling uncomfortable (13, 14). It can be assumed that physical pleasure being associated with touching oneself and/or being touched by someone else is decreased in patients suffering from a skin disease (13). The aim of the present study was to evaluate differences between psoriasis patients and skin healthy controls concerning appraisal of touching behaviour, skin-related shame and disgust.

METHODS

Sample characteristics

One hundred and seventy-one patients with psoriasis and 171 skin healthy controls were included in the study. Sex was stratified in both groups. Psoriasis patients were recruited at the TOMESA clinic in Bad Salzschlirf, Germany. They were asked at the beginning of their stay at the rehabilitation clinic whether they were willing to take part in the study and if accepting they then received the questionnaire. Out of 255 patients who were at the clinic during the time of the study, 171 were consecutively included in the study. The patients were diagnosed by their doctors and referred to the clinic in case they suffered from psoriasis. Their mean illness duration was 22.6 ± 14.2 years.

Healthy controls were selected from a representative sample of Germans, who took part in the validation study of the Touch-Shame-Disgust-Questionnaire (TSD-Q). During the study, they were visited by interviewers and were handed out the questionnaires personally. The representative study was conducted by the USUMA institute, which is an independent research institute conducting research.

Touch-Shame-Disgust-Questionnaire

The TSD-Q (13, 15) includes 30 items, which can be categorized into 5 scales measuring the appraisal of touching (3 scales) and (skin-related) shame and disgust. It can be used in healthy controls as well as in skin patients. Here are sample items of the 5 different scales:

1. Touching oneself: "I find it very pleasant to caress myself."
2. Touching in a partnership: "When my partner touches me gently, I often feel a pleasant tingle inside my skin."
3. Parental touching: "My parents often cuddled with me."

© 2016 The Authors. doi: 10.2340/00015555-2373
Journal Compilation © 2016 Acta Dermato-Venereologica. ISSN 0001-5555

4. Skin-related shame: “Sometimes I would rather not be in my own skin.”
5. Skin-related disgust: “When I look at dirty things, I get goose bumps.”

It is important to recognize that the scale “parental touching” assesses the remembered touching of the parents during childhood and not the appraisal of current parental touching. All items are answered on a 5-point Likert scale, which ranges from 0 (“absolutely disagree”) to 4 (“absolutely agree”).

Socio-demographic data

Besides the TSD-Q, all subjects also filled in a questionnaire assessing the socio-demographic variables age, sex, education and family status. Concerning the education, the subjects were asked to report whether they attended school for 9 or 10 years or whether they received a university entrance diploma. The family status was measured by asking the subjects whether they were married, single, engaged/with a partner, divorced, widowed. For the regression analyses, the family status was dichotomized into two categories “with partner” (married, engaged/with a partner) and “without partner” (all other possible answer categories).

Psoriasis Area and Severity Index

Severity of psoriasis was assessed by the widely used Psoriasis Area and Severity Index (PASI; 16). This instrument takes into consideration the affected area as well as the intensity of the symptoms (erythema, thickness and scaling). The PASI can range from 0–72, whereby higher scores indicate a more severe psoriasis.

Ethics

The sample survey of healthy controls was approved by the local ethics committee of the University of Leipzig, Germany. The study including the psoriasis patients was approved by the local ethics committee of the University of Gießen, Germany.

Statistical analyses

The statistical analyses were conducted using SPSS version 21.

Before the statistical analyses of the data were done, an analysis of missing data was conducted. This analysis showed that in 29 of the psoriasis patients, the PASI-score was missing. Moreover, two of the psoriasis patients did not report the beginning of their skin disease and their illness-duration. Additionally, 4 did not report their education level and their family status. The number of patients for whom the TSD-Q scores were missing was below 5 for all scales. In healthy controls, there was no missing data concerning the socio-demographic data. Besides, the number of missing data in healthy controls concerning the TSD-Q scales was also below 5 for all scales. Thus, there was a similar percentage of missing data for healthy controls and skin patients.

In order to compare psoriasis patients and healthy controls regarding age, education level and family status, *t*-tests for independent samples and χ^2-tests were computed. To compare the groups concerning their appraisal of touching behaviour, skin-related shame and disgust, *t*-tests for independent samples were used in case the scores for the TSD-Q were normally distributed. This was the case for every scale (all $p \geq 0.05$) except for one: The Kolmogorov-Smirnov Goodness of Fit Test indicated a violation of the normal distribution for the TSD-Q scale “skin-related shame” ($p=0.004$). Therefore, in this case the non-parametric Mann-Whitney *U*-test was used. In all cases a *p*-value of ≤ 0.05 was considered as statistically significant.

In order to analyse the relationship between socio-demographic data and the appraisal of touching behaviour, skin-related shame and disgust linear regression analyses were conducted using age, sex and family status as predictor variables and the TSD-Q scales as criterion variables. The regression analyses were conducted separately for psoriasis patients and skin-healthy controls. Moreover, for patients with psoriasis correlation analyses were conducted in order to investigate whether the PASI was related to appraisal of touching, skin-related shame and disgust.

RESULTS

In each group 96 (56.1%) of the participants were male and 75 (43.9%) were female. The mean age in the group of psoriasis patients was 50.6 (SD 13.3), while the mean age in the group of skin-healthy participants was 48.0 (SD 15.9). The age of the patients ranged from 18 to 83, and the age in the group of healthy controls ranged from 18 to 89 years. Groups did not differ concerning age [t (340) = –1.649; $p=0.100$], education level [χ^2 (2) = 2.798; $p=0.299$] or family status [χ^2 (4) = 6.452; $p=0.616$]. 59.6 % of the patients and 57.9% of the skin-healthy controls were married, while 16.4% of the patients and 20.5% of the controls were single. The mean illness-duration in patients was 22.6 years (SD 14.2; range: 0–62 years). The mean PASI was 16.3 (SD 11.2; range: 0–50.2; $n=142$).

Differences between psoriasis patients and skin-healthy controls concerning appraisal of touching

The *t*-tests indicated highly significant differences between psoriasis patients and skin-healthy controls concerning the first 3 scales of the TSD-Q. Psoriasis patients scored significantly lower than skin-healthy controls concerning appraisal of self-touching [t (332)=3.782; $p \leq 0.001$] and parental touching [t (324.427)=3.970; $p \leq 0.001$]. In contrast, patients suffering from psoriasis scored higher concerning appraisal of touching in a partnership [t (317.626)=–4.955; $p \leq 0.001$]. The means and SD for these 3 scales are illustrated in Fig. 1.

Differences between psoriasis patients and skin-healthy controls concerning disgust and shame

The *t*-test for independent samples indicated that patients with psoriasis and skin-healthy controls significantly differed in skin-related disgust in that the patients with psoriasis scored higher on this scale than skin-healthy controls [t (336) = –2.297; $p=0.022$] (Fig. 2). Also, skin-related shame in patients with psoriasis (median 2.00) significantly differed from skin-related shame in controls (median 1.50; U=11216.000; z = –3.574; $p \leq 0.001$).

Relationship between socio-demographic data and appraisal of touching, skin-related disgust and shame

The regression analyses revealed that in skin-healthy controls, age was a significant predictor of the apprai-

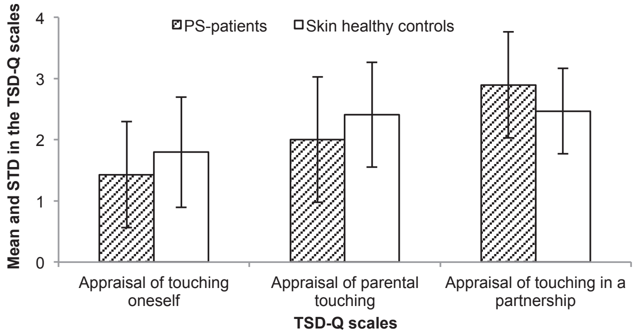

Fig. 1. Differences in the appraisal of touching behaviour between psoriasis patients and skin-healthy controls (means ± SD). The number of participants per group ranged from 167–169. These sample sizes occurred because of some missing data.

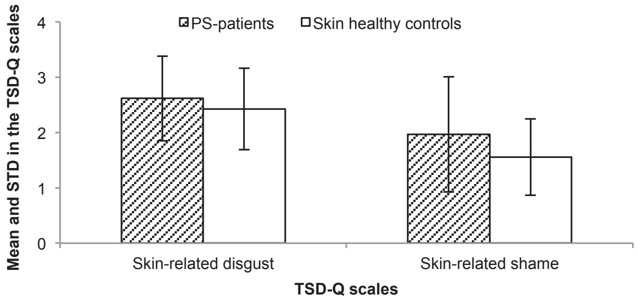

Fig. 2. Differences in skin-related disgust and shame between psoriasis patients and skin-healthy controls (means ± SD). The number of participants per group differed between 169–171. These sample sizes occurred because of some missing data.

sal of touching oneself accounting for 8.8 % of the variance in this scale [F (3/166) = 6.356; $p \leq 0.001$]. Furthermore, age was also a significant predictor of the appraisal of parental touching [F (3/168) = 6.282; $p \leq 0.001$] and touching in a partnership [F (3/166) = 3.360; $p = 0.020$]. Age accounted for 8.6% of the variance in the scale "appraisal of parental touching" and for 4.1% of the variance in the scale "appraisal of touching in a partnership". In all 3 cases, being younger was associated with a more positive appraisal of touching. In contrast, the family status and gender were not significantly related to sex appraisal of touching oneself, parental touching or touching in a partnership in skin-healthy controls. Moreover, in skin-healthy controls, age and sex were found to be significant predictors of skin-related disgust [F (3/168) = 6.342; $p \leq 0.001$] accounting for 8.7% of the variance in this scale: Being female and younger was linked to scoring higher on this scale. In addition, gender was a significant predictor of skin-related shame in this group [F (3/168) = 5.232; $p = 0.002$]. It accounted for 7.0% of the variance in skin-related shame: Being female was associated with higher scores on this scale (Table I).

Interestingly, in psoriasis-patients the scores of the TSD-Q scales were not significantly related to age, sex and family status (Table I for results). Moreover, also the PASI score was not significantly related to appraisal of touching, skin-related shame and disgust (all $p > 0.05$).

DISCUSSION

The results of the current study indicate that patients with psoriasis score significantly lower than healthy controls concerning the appraisal of touching oneself

Table I. *Results of the linear regression analyses for healthy controls and psoriasis patients*

		Healthy controls				Psoriasis patients			
Criteria	Model	Unstandard-ized B	Standardized ß	*p*-value	95 % CI for B	Unstandard-ized B	Standardized ß	*p*-value	95 % CI for B
Appraisal of touching oneself	Constant	2.656		<0.001	1.871 to 3.441	2.152		<0.001	1.187–3.117
	Age	–0.020	–0.342	<0.001	–0.029 to –0.010	–0.011	–0.164	0.073	–0.022–0.001
	Sex	0.184	0.102	0.175	–0.083 to 0.451	–0.055	–0.031	0.709	–0.343–0.234
	Family status	–0.196	–0.142	0.104	–0.434 to 0.041	–0.109	–0.076	0.418	–0.375–0.157
Appraisal of parental touching	Constant	3.277		<0.001	2.528 to 4.025	1.900		0.001	0.783–3.018
	Age	–0.019	–0.346	<0.001	–0.028 to –0.010	–0.005	–0.072	0.426	–0.019–0.008
	Sex	0.116	0.067	0.369	–0.138 to 0.369	0.155	0.075	0.361	–0.180–0.491
	Family status	–0.135	–0.102	0.240	–0.361 to 0.091	0.167	0.098	0.293	–0.146–0.480
Appraisal of touching in a partnership	Constant	2.876		<0.001	2.251 to 3.500	3.500		<0.001	2.534–4.465
	Age	–0.011	–0.240	0.008	–0.018 to –0.003	–0.005	–0.083	0.365	–0.017–0.006
	Sex	0.088	0.062	0.417	–0.125 to 0.300	–0.163	–0.093	0.263	–0.449–0.124
	Family status	–0.029	–0.027	0.764	–0.218 to 0.160	–0.091	–0.063	0.502	–0.359–0.176
Skin related shame	Constant	0.914		0.003	0.308 to 1.521	1.689		0.004	0.544–2.835
	Age	0.002	0.050	0.572	–0.005 to 0.010	0.005	0.059	0.511	–0.009–0.018
	Sex	0.398	0.287	0.000	0.193 to 0.603	0.039	0.018	0.823	–0.304–0.382
	Family status	–0.034	–0.032	0.715	–0.217 to 0.149	–0.012	–0.007	0.943	–0.331–0.308
Skin related disgust	Constant	2.711		<0.001	2.069 to 3.354	2.637		<0.001	1.798–3.475
	Age	–0.012	–0.258	0.003	–0.020 to –0.004	–0.001	–0.019	0.830	–0.011–0.009
	Sex	0.308	0.208	0.006	0.091 to 0.526	0.109	0.070	0.395	–0.143–0.360
	Family status	–0.153	–0.135	0.122	–0.347 to 0.041	–0.135	–0.107	0.253	–0.368–0.098

CI: confidence interval.

and parental touching. In addition, this study showed that patients with psoriasis scored significantly higher than healthy controls concerning skin-related shame and disgust. These findings are not only in line with our assumptions, but also in line with the literature on stigmatization feelings in patients with psoriasis: There are hints that psoriasis patients feel stigmatized because of their visible lesions and have feelings of social exclusion and devaluation (17, 18). Moreover, it is known that patients with psoriasis avoid certain social activities such as swimming or using a sauna to restrict potentially stigmatizing situations (19). This avoidance behavior might result from skin-related shame and disgust. According to the literature (20,21) and also the results of this study, skin-related disgust and shame are significantly higher in psoriasis patients than in healthy controls. It is reasonable to postulate that a more negative evaluation of touching oneself and parental touching is linked to skin-related shame and disgust. Supporting this idea, a significant negative relationship between the appraisal of parental touching and skin-related disgust occurred in this study: The more the patients felt disgusted, the less positive they evaluated being touched by their parents as a child. Of course, at this point one has to keep in mind that the TSD-Q measures the appraisal of "remembered" parental touching and thus might be biased by the current relationship with the parents.

It should also be emphasized that touching oneself and other people, is more than just establishing contact. Touching represents a very special kind of communication, which can be used to show feelings and thoughts (13, 22). It is e.g. possible to distinguish between different emotions just by the way someone touches ones' own skin (13, 23). Keeping this in mind, it is necessary for psoriasis patients to learn a 'normal' handling of their skin disease in order to be able to communicate in an unrestricted way. If a normal handling of ones' own skin and others' skin is not possible, conflicts could occur and make the communication with others difficult. We suppose that patients with psoriasis could profit from psychological exercises like role-plays, which might help to strengthen their self-confidence.

Interestingly, this study also revealed that patients with psoriasis evaluated touching in a partnership as more pleasant than healthy controls. Due to the fact that patients suffering from affected skin often feel shame or are afraid that the partner might be disgusted when noticing the affected skin (14), our assumption was that patients with psoriasis compared to healthy controls would score lower on the scale "appraisal of touching in a partnership". The opposite was the case. One explanation for this unexpected result might be that psoriasis patients, who are in a relationship, tend to idealize their relationship, because they are thankful for having found a partner, who accepts him/her despite the affected skin. Future studies should investigate this interesting finding more deeply and consider being in a partnership as important influencing factor.

Moreover, this study also investigated the relationship between socio-demographic variables and appraisal of touching, shame and disgust. Here, it turned out that in psoriasis patients, age, sex and family status were no significant predictors of the TSD-Q scores, while in healthy controls several correlations occurred: Being younger was associated with a more positive evaluation of touching; being female was related to more feelings of shame and being younger and female was associated with more feelings of disgust in healthy controls. The findings regarding shame and disgust support what has already been shown in other studies (e.g. 24, 25). It is remarkable though that in psoriasis patients not even the PASI was related to appraisal of touching. It is possible that in the group of skin patients, other psychological factors are related to the appraisal of touching. Future studies could e.g. test whether the acceptance of the skin disease and self-rated skin impairment are linked to skin satisfaction. Here, it is important to keep in mind that self-rated impairment due to the skin disease and the severity of the skin disease measured by the doctor, are not always significantly associated (e.g. 26). Moreover, the self-esteem might also play an important role for the appraisal of touching in skin patients. It would therefore be of interest to explore appraisal of touching, shame and disgust, before and after a psychological intervention aiming to improve patients' self-esteem and acceptance of the skin disease.

In the last 15 years, the treatment of psoriasis could be revolutionized by the introduction of biologic therapy for moderate and severe forms of psoriasis (27). Despite the development of drug interventions in the last years, the psychosocial aspects of the disease must not be underestimated. The results of the present study emphasize the importance of an individualized biopsychosocial therapy. Thus we should focus on a multidimensional therapy including a broad focus on pharmaceutical and psychotherapeutical interventions. According to the present results we should also consider aspects of touching and being touched as well as skin-related shame and disgust in the treatment of psoriasis in order to improve the quality of life in psoriasis patients.

REFERENCES

1. Pacan P, Szepietowski JC, Jiejna A. Stressful life events and depression in patients suffering from psoriasis vulgaris. Dermatol Psychosom 2003; 4: 142–145.
2. Christophers E. The immunopathology of psoriasis. Int Arch Allergy Immunol 1996; 110: 199–206.
3. Griffiths CEM, Voorhees JJ. Psoriasis, T cell and autoimmunity. J R Soc Med 1996; 89: 315–319.
4. Kim J, Krueger JG. The immunopathogenesis of psoriasis. Dermatol Clin 2015; 33: 13–33.

5. Monteleone G, Pallone F, MacDonald T, Chimenti S, Costanzo A. Psoriasis: from pathogenesis to novel therapeutic approaches. Clin Sci 2011; 120: 1–11.
6. Szepietowski JC, Bielicka E, Nockowski P, Noworolska A, Wasik F. Increased interleukin-7 levels in the sera of psoriasis patients: lack of correlations with interleukin-6 levels and disease intensity. Clin Exp Dermatol 2000; 25: 643–647.
7. Basavaraj KH, Navay MA, Rashmi R. Stress and quality of life in psoriasis: an update. Int J Dermatol 2011; 50: 783–792.
8. Ghajarzadeh M, Ghiasi M, Kheirkhah S. Associations between skin diseases and quality of life: a comparison of psoriasis, vitiligo and alopecia areata. Acta Med Iran 2012; 50: 511–515.
9. Schmid-Ott G, Schallmayer S. Psychosoziale Konsequenzen der Psoriasis. Aktuelle Dermatologie 2006; 32: 221–225.
10. Krueger G, Koo J, Lebwohl M, Meuter A, Stern RS, Rolstad T. The impact of psoriasis on quality of life: Results of a 1998 National Psoriasis foundation patient-membership survey. Arch Dermatol 2001; 137: 280–284.
11. Feldman SR, Malakouti M, Koo JY. Social impact of the burden of psoriasis: effects on patients and practice. Dermatol Online J 2014; 17: 20.
12. Dalgard F, Gieler U, Tomas-Aragones L, Lien L, Poot F, Jemec GB, et al. The psychological burden of skin disease: A cross-sectional multicenter study among dermatological out-patients in 13 European countries. J Invest Dermatol 2015; 135: 984–991.
13. Schut C, Linder D, Burkhard B, Niemeier V, Ermler C, Madejski K, et al. Appraisal of touching behavior, shame and disgust: a cross-cultural-study. Int J Cult Ment Health 2011; 4: 1–15.
14. Dalgard F, Gieler U, Holm JØ, Bjertness E, Hauser S. Self-esteem and body satisfaction among late adolescents with acne: Results from a population survey. J Am Acad Dermatol 2008; 59: 746–751.
15. Kupfer, J, Brosig, B, Niemeier, V, Gieler, U. Zur Validität des Hautzufriedenheitsbogens (Hautzuf) – Validity of the Touch-Shame-Disgust-Questionnaire (TSD-Q). Psychother Psychosom Med Psychol 2005; 55: 139.
16. Fredrikkson T, Petersson U. Severe psoriasis – oral therapy with a new retinoid. Dermatologica 1978; 157: 238–244.
17. Schmid-Ott G, Malewski P, Kreiselmaier I, Mrowietz U. Psychosoziale Folgen der Psoriasis. Hautarzt 2005; 56: 466–472.
18. Hrehorów E, Salomon J, Matusika L, Reich A, Szepietwoski JC. Patients with psoriasis feel stigmatized. Acta Derm Venereol 2012; 92: 67–72.
19. Schmid-Ott G. Stigmatisierung von Hauterkrankten. In: Petermann F, Warschburger P, editors. Neurodermitis. Göttingen: Hogrefe, 1999; p. 157–174.
20. Sampogna F, Tabolli S, Abeni D; IDI Multipurpose Psoriasis research on vital experiences (IMPROVE) investigators. Living with psoriasis: prevalence of shame, anger, worry, and problems in daily activities and social life. Acta Derm Venereol 2012; 92: 299–303.
21. Shah R, Bewley A. Psoriasis: “The badge of shame”. A case report of a psychological intervention to reduce and potentially clear chronic skin disease. Clin Exp Dermatol 2014; 39: 600–603.
22. Hertenstein MJ, Verkamp JM, Kerestes AM, Holmes RM. The communicative functions of touch in humans, nonhuman primates and rats: A review and synthesis of the empirical research. Genet Soc Gen Psychol Monogr 2006; 132: 5–94.
23. Hertenstein MJ, Keltner D, App B, Bulleit BA, Jaskolka AR. Touch communicates distinct emotions. Emotion 2006; 6: 528–533.
24. Benetti-McQuoid J, Bursik K. Individual differences in experiences of and responses to guilt and shame: Examining the lenses of gender and gender role. Sex Roles 2005; 53: 133–142.
25. Rohrmann S, Hopp H, Quirin M. Gender differences in psychophysiological responses to disgust. J Psychophysiol 2008; 22: 65–75.
26. Schut C, Felsch A, Zick C, Hinsch K-D, Gieler U, Kupfer J. Role of illness representations and coping in patients with atopic dermatitis: a cross-sectional study. J Eur Acad Dermatol Venereol 2014; 28: 1566–1571.
27. Nast A, Boehncke WH, Mrowietz U, Ockenfels HM, Philipp S, Reich K, et al. S3 Guidelines on the treatment of psoriasis vulgaris. Update. Deutsche Dermatologische Gesellschaft (DDG); Berufsverband deutscher Dermatologen (BVDD). J Deutch Dermatol Ges 2012; 10 (Suppl 2): S1–S95.