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Linguistic Validation of Impact of Skin Diseases on Daily Life (ISDL) Scale

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The psychosocial impact of skin conditions such as Eczema, Psoriasis, and Acne Vulgaris significantly affects individuals' overall quality of life (QoL). Visible skin issues can lead to stigma, and social withdrawal, associated with anxiety, depression, and body image dissatisfaction, influencing relationships, work performance, and overall mental well-being. Different standardized measures have been developed that assess the QoL and psychosocial issues of individuals with skin conditions. Evers et al (2007) designed a multidimensional scale entitled Impact of Skin Diseases on Daily Life (ISDL) that not just measures the psychosocial impact of skin conditions, also assesses the level of satisfaction with QoL simultaneously. Therefore, the present study aimed to translate ISDL scale into Urdu language for Pakistani population. This scale comprised of 32 items with subscales including skin status, physical symptoms (itching, pain, fatigue), scratching, impact of disease on daily life, stigmatization, psychological functioning (anxiety, negative mood, positive mood), social support and illness cognition (helplessness, acceptance, perceived benefits). A high reliability coefficient was found .72. The present study was validated on Pakistani population (N =315) with an age range of M=28.5, SD=3.60. A Factor analysis through Structural Equation Modeling SEM-AMOS, was carried out using the confirmatory approach and validated the factorial structure. Results revealed strong psychometric properties of the ISDL scale which align with previous studies. These findings imply that the ISDL scale is an acceptable psychometric tool and an appropriate scale to investigate the psychosocial impact of skin diseases and QoL in individuals with chronic skin conditions.

Keywords. Psychosocial Impact, Quality of Life, Skin Conditions, Structural Equation Modeling.

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Skin is the largest organ in the body that has a variety of roles, including those of a barrier, immune system controller, endocrine organ, and also a part in aesthetics. Skin problems and psychological disorders have a significant reciprocal impact on individual's overall quality of life (QoL). This relationship may have its roots in shared neurobiological, psychological and social factors. 12.4% of the disorders seen by general practitioners are skin problems (Verhoeven, 2008).

According to reports, 25% of dermatology outpatients have psychiatric morbidity (Picardi, 2000). Even though psychiatric illness is so common, it has received very little attention. Dermatological problems can raise the chance of having a poor QoL or making an already serious mental illness worse. Physicians, insurance companies, public and health policy makers frequently overlook the consequences of skin conditions in individual's lives. Since many chronic skin problems do not pose a threat to life, resources and attention may be allocated to diseases that are considered more serious.

The psychosocial issues of dermatological diseases are typically comparable to, if not greater than, that of other chronic medical problems. These detrimental impacts may eventually degrade overall QoL. Unfortunately, because there is no cure, people who have these skin conditions frequently struggle throughout their whole lives. According to Hong et al (2008)

although skin problems do not directly endanger life, they can seriously compromise one's QoL. Examples of these skin conditions include Psoriasis, Eczema and Acne Vulgaris.

Chronic skin conditions can severely impact an individual's physical health and emotional well-being. These conditions often disrupt various aspects of life, including education, personal relationships, career opportunities, social interactions, leisure activities, and even intimate relationships (Megari, 2013). The physical and psychological effects extend beyond the affected individuals, also influencing caregivers and family members. Common emotional and social challenges associated with skin conditions include stress, anxiety, anger, depression, shame, social withdrawal, negative body image, stigma, discrimination, strained marital relationships, low self-esteem, and embarrassment (Sampogna et al., 2006).

In addition to psychopharmacology, various psychotherapeutic approaches have been found effective in managing the psychosocial impacts of skin conditions. The illnesses that entail a connection between the mind and the skin are often referred to as psychophysiological disorders (Jafferany & Pastolero, 2018). Eczema, Psoriasis and Acne Vulgaris are examples of most frequent or prevalent skin conditions that have a physiological basis but can be made worse by stress and other emotional reasons (White Swan Foundation, 2017).

Around 2% of the world's population suffers from Psoriasis, and both men and women are affected equally (Raychaudhuri & Farber, 2001). In a poll conducted by the National Psoriasis Foundation (2006) about 75% of patients reported that their everyday activities had changed as a result of their skin condition. Similarly Atopic Dermatitis (AD), generally known as Eczema, is a chronic inflammatory condition marked by a variety of atopic and non-atopic comorbidities, which collectively can cause significant morbidity (Vakharia et al., 2017). Approximately 10% of adults are affected by this condition, which imposes a significant burden in terms of both health complications and financial costs for individuals and healthcare systems (Johanssan et al., 2004). The primary symptom of eczema is itching, which can cause excessive scratching, insomnia, and skin infections (Eichenfield et al., 2014).

However, literature indicated that Acne Vulgaris also had the potential to impair individual's QoL. It is a prevalent skin condition that develops when Propionibacterium acnes interacts with dehydroepiandrosterone, a hormone naturally present in the body. It results in the formation of both inflammatory and non-inflammatory skin lesions. (George et al., 2018). According to Zaenglein et al (2016) Acne Vulgaris affects 85% of teenagers and young adults, is the seventh most common disease in the globe (Tan & Bhate, 2015). Acne vulgaris is a frequent, unpleasant condition that can negatively impact all facets of an individual's QoL, including feelings and emotions, close relationships, sports, social life, and work prospects.

Numerous standardized tools exist to evaluate the impact of skin diseases on individuals' quality of life (QoL). In 2007, Evers et al. introduced a multidimensional scale called the "Impact of Skin Diseases on Daily Life" (ISDL), designed to assess the psychosocial effects of skin conditions. This scale not only highlights the psychosocial challenges associated with skin diseases but also evaluates skin-specific QoL. Urdu, the national language of Pakistan, is widely spoken and understood across the country. However, the ISDL has not yet been translated into Urdu.

Moreover, researches conducted on the impact of skin conditions within Pakistan, used other translated versions of scales that measure single construct at one point in time. However, ISDL is a multidimensional tool covering different psychosocial aspects including skin status, scratching, physical symptoms, psychological functioning, stigmatization and illness cognitions. Recognizing the need for an Urdu-translated version of the ISDL scale to advance research on the psychosocial effects of skin conditions and skin-specific QoL in Pakistan, this study aimed to create a reliable and valid Urdu translation of the ISDL.

LINGUISTIC VALIDATION OF ISDL SCALE

The objectives of the study included translating the ISDL using standard procedures, evaluating the psychometric properties of the translated version, examining its relationship with a comparative tool, and conducting criterion validation through known group validity. Additionally, construct validation was performed by examining the associations between the ISDL Urdu and English versions, analyzing item-level correlations, and determining the factor structure in a Pakistani sample. It was hypothesized that the Urdu version of the ISDL would demonstrate reliability and strong psychometric properties. ISDL both Urdu and English versions were expected to correlate positively with Dermatology Life Quality Index (DLQI).

Method

The scale measuring the Impact of skin diseases on daily life was translated and validated in Urdu language to be used in Pakistan. It was done in two phases. In the first part, the tool was translated from the original English version using MAPI guidelines (2014). The translated Urdu version was then administered on individuals (N= 315) with Psoriasis, Eczema and Acne Vulgaris. In order to determine the psychometric properties and statistical analysis was run using AMOS.

Instruments

Impact of Skin Disease on Daily Life (ISDL)

The scale included a total of 8 subscales: skin condition, physical symptoms (such as itching, pain, and fatigue), scratching behavior, disease's impact on daily life, stigmatization, psychological functioning, social support, and illness-related beliefs. It contained 32 items, assessed using a 4-point Likert scale. The theoretical range for each subscale was as follows: skin condition (9–36), itching (3–16), fatigue and pain (0–10), conscious and automatic scratching response (3–12), disease impact on daily life (10–40), stigmatization (6–24), anxiety (10–40), mood (both negative and positive, 0–24), helplessness, acceptance, and perceived benefits (6–24), and perceived support (5–20) (Ever et al., 2007).

Translation of ISDL in Urdu Language

This part describes translation procedure of the ISDL. Additionally, this part was divided into various steps. To determine whether the scale is adequate and whether professional translation is necessary, Step-I was created. In Step II, the scale underwent translation. Step III involved testing the questionnaire items from the pilot study. Step IV focused on performing confirmatory factor analysis to ensure the linguistic validation of the scale.

Step-I: Assessing Scale Appropriateness and Evaluating the Need for Translation

Expert Review of Instruments. The translated version was thoroughly reviewed by experts in the field of health psychology, dermatology, and psychometrics to ensure that the instrument is both psychometrically robust and appropriate for the target population.

Method. The subject experts assessed the scale to determine its face and content validity. Based on their informed opinions, the ISDL scale is deemed to be a valid measure of evaluating the psychosocial impact of skin conditions.

Participants. The panel of experts from the field of psychology included an Assistant Professor and PhD candidate, a Health Psychologist and a Certified Dermatologist. Each expert ensured that the tool is user friendly and a valid measure.

Procedure. To evaluate the face validity, content validity, and necessity for translation of the selected psychometric measure, experts were given the questionnaire accompanied by a brief overview of the scale. These experts were asked to carefully review the symbolic language, sentence construction, and the suitability of the content for the intended population's comprehension level.

Results. The experts' feedback indicated no further modifications and major revisions in the instrument. They found it a must needed instrument for the target population. The procedure for translating ISDL scale was as follows.

Step II: Forward Translation

Two independent translations from Original English (OE) were done by two Bilingual psychologists. The translation process ensured that the scale is grammatically correct, and the language used is understandable for most Pakistani Urdu speaking Individuals.

Reconciliation of Forward Translation. To reconcile the two independent forward translations of the scale, a meeting was convened. The translations were compared and evaluated for their conceptual equivalence, clarity, and comprehensibility in relation to the original questionnaires. The participants in the reconciliation process documented their evaluations for each item. They either selected the best translation or suggested a new one if neither was satisfactory. Special attention was given to cultural and linguistic differences that could complicate the translation of the English version into the target language. Ultimately, a consensus on the forward translations was reached under the supervisor's guidance. Several discussions led to the final version of the Urdu translation, chosen for its suitability.

Backward Translation. The final forward translation was presented to two English language experts, unfamiliar with the original and indigenous versions of the scale. They eligible to translate the scale back into English. Reconciliation of backward translated versions was done by expert panel. They noticed the similarities and discrepancies between the two back translated versions and the original instrument with the assistance of the research supervisor.

Review of the Forward and Backward Translations. The review aimed to evaluate the entire forward-backward translation process to ensure the final version was accurate. Two Dermatologists carefully reviewed and jointly finalized the translated scale. The backward translation was then compared to the original scale, with particular attention paid to any conceptual differences. The dermatologists examined each item by comparing the back-translated version to the original English items. The translation was intended to be simple, clear, and concise, with no conceptual discrepancies between the original and final versions. The primary goal was to achieve both conceptual equivalence and clarity, using language that was familiar and accessible.

Proof Reading. To ensure that the translation was error-free, grammatically correct, and accurately captured the original meaning, proofreading was done. Thus, the final translation into Urdu was finished.

Step III: Pilot Testing or Try Out

The third phase of the translation process involved conducting a pilot test to evaluate the psychometric properties of the translated questionnaire on a small sample. A total of 15 individuals with (n=5) Psoriasis, (n=5) Eczema, and (n=5) Acne Vulgaris were purposefully selected from a government hospital. The aim of this step was to determine whether the participants could comprehend the translated version of the ISDL and provide accurate responses. Each participant was asked to identify any words, phrases, or expressions they found difficult to understand. No significant ambiguities were reported by the participants.

Step IV: Linguistic Validation of ISDL Scale

In this step, the assessment measure was evaluated for its validity and reliability. Psychometric properties including convergent validity and criterion validation process called known group validity was done. Confirmatory Factor Analysis was also run on individual subscales of ISDL scale, in order to assess the factor structure.

Sample and Sampling Strategy. The sample was selected using a purposive sampling technique, which is a non-probability method. The sample was comprised of total N=315 individuals with Psoriasis (n=100), Eczema (n=105) and Acne Vulgaris (n=110). Age range of the participants was from 18 to 35 years (M = 28.5, SD = 3.60). Participants were recruited as referrals from dermatologists during their OPD visits from different government and private hospitals located in Lahore and Rawalpindi. Google forms were also circulated to get the sufficient amount of data through different social media platforms.

Inclusion Criteria

- Individuals diagnosed with Psoriasis, Eczema and Acne Vulgaris as screened and referred by dermatologists.
- Participants with contact dermatitis, atopic dermatitis, hand eczema and stasis eczema were recruited as these are the most common types reported in Pakistan specifically in Punjab Province.
- Individuals with all types of Psoriasis.
- Individuals with acne vulgaris having a minimum grade 2 (Dermatologists Grading Scheme) level of diagnosis.
- Duration of skin conditions for at least more than six months.
- Both men and women were included.

Exclusion Criteria

- Any other physical ailment or psychological comorbidity.
- Skin conditions other than Eczema, Psoriasis and Acne Vulgaris such as Allergy, Fungal Infection, Urticaria, Gangrene, Vitiligo and so on.
- Participants with no formal education (who could not read and write).
- Pregnant women were excluded from the study as pregnancy itself caused a lot of hormonal imbalances that might trigger skin conditions for shorter period.

Assessment Measures

Following assessment measures were used in the validation study along with the translated version of ISDL scale.

Demographic Information Sheet. A demographic information questionnaire developed by the researcher was used to get the personal, educational, occupational and familial information of the participants

Clinical Information Sheets for Skin Conditions. A self-constructed clinical information sheet was used to gather knowledge about the exclusive medical information of individuals with different skin conditions (Psoriasis, Eczema & Acne Vulgaris).

Dermatology Life Quality Index (DLQI). When evaluating different skin problems, the Dermatology Life Quality Index (DLQI) is frequently used. It has ten items that assess how skin conditions have affected important facets of daily life throughout the previous seven days. Each question has four possible answers: (1) a little, (2) a lot, (3) very much, and (0) not relevant at all. Higher ratings indicate greater impairment in quality of life, with 30 being the highest attainable score. The following are the scoring ranges: According to Finlay and Khan (1994), 0–1 denotes no impact on the patient's life, 2–5 a slight effect, 6–10 a mild effect, 11–20 a severe effect, and 21–30 an extreme impact.

Procedure

The ISDL scale's Urdu translation was first administered with official permission from the appropriate authorities. The goals and aim of the study were explained to the participants. They gave their agreement, were reassured that their answers would be kept private, and disclosed pertinent details concerning their skin condition prior to filling out the questionnaire.

After being briefed on the purpose of the study, the volunteers spent forty to forty-five minutes filling out the questionnaires. They were encouraged to finish the assessment protocol immediately, and any questions they had about the questionnaires were answered thoroughly. Throughout the process, all ethical guidelines were adhered to in interacting with the research participants.

Results

Determining Psychometric Properties of the Impact of Skin Disease on Daily Life (ISDL) Scale

This method was used to validate the ISDL questionnaire subscales. ISDL is a multidimensional tool and encompasses distinct concepts. A comprehensive factor analysis may be of limited value. However, as suggested by the original author that an overall factor analysis of all ISDL subscales is not advisable due to its multidimensional nature, so the factor analysis was conducted on the individual subscales. Later on, the scale's reliability and validity were evaluated. The demographic and clinical characteristics of participants with skin conditions is depicted in table 1.

Table 1

Demographic & Clinical Information of the Participants (N=315)

Variables	*f(%)*	*M(SD)*
Age		28.5(3.60)
Gender		
Men	143(45.4%)	
Women	172(54.6%)	
Occupation		
Working	171(54.3%)	
Non-Working	144(45.7%)	
Family System		
Nuclear	202(64.1%)	
Joint	113(35.9%)	
Type of Skin Condition		
Psoriasis	100(31.7%)	
Eczema	105(33.3%)	
Acne Vulgaris	110(34.9%)	
Part of Body Affe cted (Psoriasis)		
Exposed	36(11.4%)	
Unexposed	21(6.7%)	
Both	43(13.7%)	
Part of Body Affe cted (Eczema)		
Exposed	48(15.2%)	
Unexposed	13(4.1%)	
Both	44(14.0%)	
Part of Body Affected (Acne Vulgaris)		
Exposed	88(27.9%)	
Unexposed	-	
Both	22(7.0%)	

Confirmatory Factor Analysis of ISDL Subscale (Scratching)

Using IBM SPSS AMOS (Analysis of Moment Structure) version 25.0, Confirmatory Factor Analysis (CFA) was done on individual subscales of ISDL to validate the factor structure of psychosocial impact or skin specific QoL. Derived models and figures are presented in table 2.

Table 2

Fit Indices of Confirmatory Factor Analysis of the ISDL Subscale Scratching (N = 315)

Model	χ^2	*df*	χ^2/df	*GFI*	*CFI*	*NFI*	*RMSEA*	*SRMR*
Initial Model	71.842	9	7.982	.931	.911	.900	.149	.067
Model Fit	14.417	7	2.060	.986	989	.980	.058	.021

Note. GFI= Goodness of fit index, CFI=comparative fit index, NNFI = non-normed fit index, RMSEA= root mean square error of approximation, SRMR = Standardized root mean square.

Depicted in table 2 and figure 1, χ^2 (7) = 2.060, p <.05. was the model fit for the absolute CFA model. According to the model assessment, the sample variance-covariance and population variance-covariance are consistent, indicating an excellent fit. The RMSEA and SRMR values obtained from the model fit evaluation were.058 and.012, respectively. In addition, the chi-square to degrees of freedom ratio (χ^2/df) was 2.060, and the GFI, CFI, and NNFI were .986, .989, and .980, respectively. Therefore, the model fit met the established criteria for adequate fit.

Figure 1

Confirmatory Factor Analysis of Scratching for Individuals with Skin Conditions (N = 315).

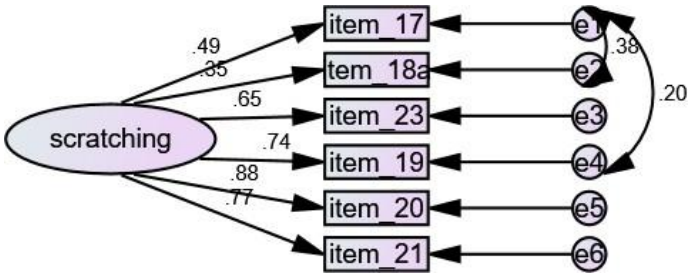

Table 3

Psychometric Properties of Scratching for Individuals with Skin Conditions (N = 315)

Factors	α	*CR*	*AVE*	λ
Scratching	.82	.85	0.51	
Item_1				0.64
Item_2				0.31
Item_3				0.74
Item_4				0.83
Item_5				0.85
Item_6				0.79

Note. CR = Composite reliability, AVE = Average variance extracted, λ = Standardized factor loading, α = Cronbach's alpha.

Composite reliability and average variance extracted (AVE) were used to evaluate the psychometric characteristics of scratching in people with skin problems, including validity and reliability. Reliability coefficients like Cronbach's alpha and composite reliability should be at least 0.70, per Henseler et al. (2016) and Hair et al. (2010). Additionally, to confirm that the factors have converged, the AVE index must be 0.50 or higher. Shown in table 3, it was observed that each item's factor loading exceeded 0.64 (Hair et al., 2010), and with the variance for scratching at 54%, this indicates strong convergent validity. The reliability coefficients, which ranged from 0.82 to 0.85, were likewise quite good. These included composite reliability and Cronbach's alpha.

Table 4

Fit Indices of Confirmatory Factor Analysis of the ISDL on Daily Life (N = 315)

Model	χ^2	*df*	χ^2/df	*GFI*	*CFI*	*NNFI*	*RMSEA*	*SRMR*
Initial Model	720.97	54	13.351	.743	.366	.355	.19	.14
Model Fit	130.71	46	2.842	.938	.919	.883	.07	.07

Note. GFI = Goodness of fit index, CFI = Comparative fit index, NNFI = Non-normed fit index, RMSEA = Root mean square error of approximation, SRMR = Standardized root mean square.

The fit of the CFA absolute model, as shown in table 4 and figure 2, was assessed with χ^2 (46) = 130.71, $p < .05$, indicating a strong model fit. This suggests that the variance-covariance between the sample and the population is consistent. The model's fit evaluation yielded RMSEA and SRMR values of .07 and .07, respectively. Additionally, the GFI, CFI, and NNFI were .93, .91, and .88. Overall, these results meet the criteria for a good model fit.

Figure 2

Confirmatory Factor Analysis of the Psychosocial Impact of Skin Conditions (N =315)

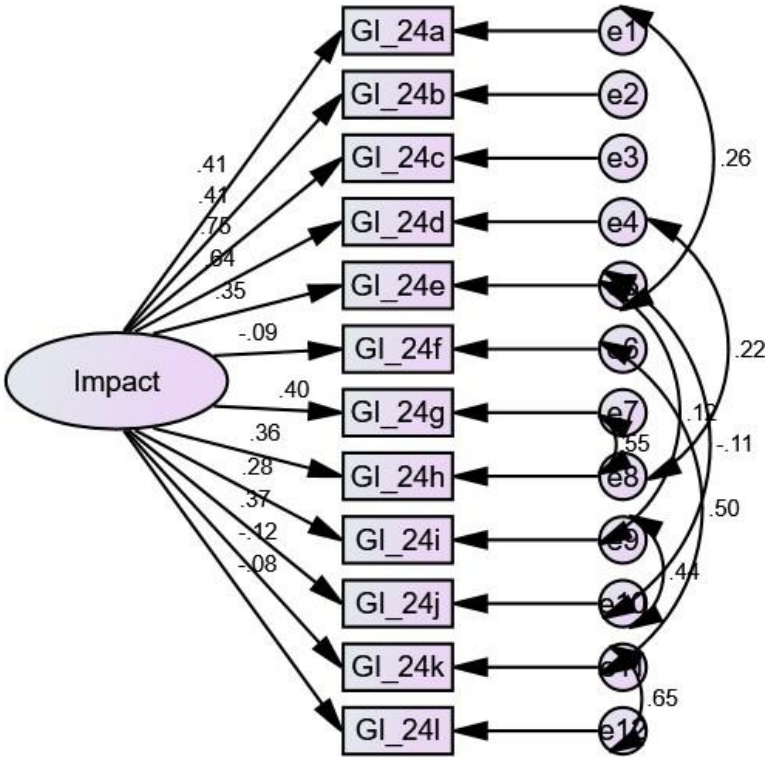

Table 5

Psychometric Properties of Psychosocial Impact of Skin Diseases on Daily Life (N = 315)

Factors	α	*CR*	*AVE*	λ
Impact of Skin Diseases	.60	0.89	0.41	
Item_1				0.63
Item_2				0.49
Item_3				0.57
Item_4				0.59
Item_5				0.47
Item_6				0.60
Item_7				0.68
Item_8				0.72
Item_9				0.69
Item_10				0.58

Factors	α	*CR*	*AVE*	λ
Item_11				0.90
Item_12				0.68

Note. CR = Composite reliability, AVE = Average variance extracted, λ = Standardized factor loading, α = Cronbach's alpha.

The factor loading for each item in the table was found to be around 0.47 or higher, indicating that the variance explained by each item was substantial (Hair et al., 2010). The variance percentages for each factor support strong convergent validity, with the psychosocial impact factor explaining 63% of the variance. Additionally, the reliability coefficients, including composite reliability and Cronbach's alpha, ranged from 0.60 to 0.89, which are considered to be within the range of good reliability estimates.

Table 6

Fit Indices of Confirmatory Factor Analysis of the Negative Mood (N = 315)

Model	χ^2	*df*	χ^2/df	*GFI*	*CFI*	*NNFI*	*RMSEA*	*SRMR*
Initial Model	70.995	9	7.888	.938	.950	.943	.14	.04
Model Fit	7.825	7	1.118	.992	.999	.994	.01	.01

Note. GFI = Goodness of fit index, CFI = Comparative fit index, NNFI = Non-normed fit index, RMSEA = Root mean square error of approximation, SRMR = Standardized root mean square.

The absolute model had a χ^2 (7) value of 1.118, with a *p*-value greater than 0.05. The evaluation of the current model fit, shown in table 6 and figure 3, revealed an RMSEA of 0.01 and an SRMR of 0.01. Similarly, for the negative mood, the GFI, CFI, and NNFI values were .992, .999, and .994, respectively. Thus, the model fit evaluation met the required fit criteria.

Figure 3

Confirmatory Factor Analysis of the Negative Mood (N =315)

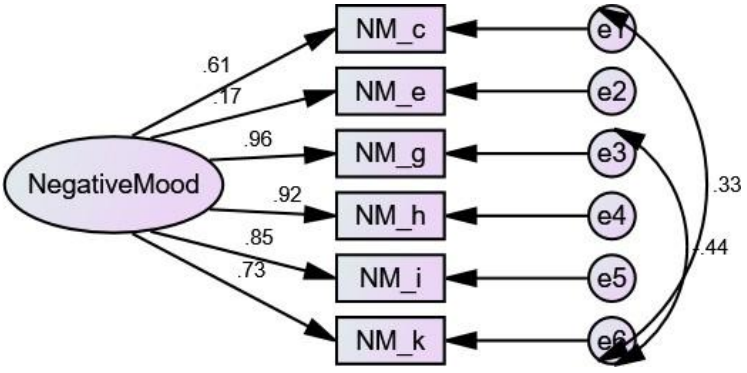

Table 7

Psychometric Properties of Negative Mood (N = 315)

Factors	α	CR	AVE	λ
Negative Mood	.81	0.85	0.50	
Item_1				0.57
Item_2				0.53
Item_3				0.84
Item_4				0.83
Item_5				0.77
Item_6				0.66

Note. CR = Composite reliability, AVE = Average variance extracted, λ = Standardized factor loading, α = Cronbach's alpha.

The factor loading for each item of negative mood, as shown in table 7, was found to be around .53 or higher, indicating that the variance explained by each item was substantial. The variance explained by negative mood was 62%. Additionally, the reliability coefficients, including composite reliability and Cronbach's alpha, ranged from .81 to .85, both of which are considered excellent reliability estimates.

Table 8

Fit Indices of Confirmatory Factor Analysis of the Positive Mood (N = 315)

Model	χ^2	*df*	χ^2/df	*GFI*	*CFI*	*NNFI*	*RMSEA*	*SRMR*
Initial Model	156.05	9	17.33	.886	.934	.930	.22	.02
Model Fit	26.898	6	4.483	.972	.991	.988	.10	.01

Note. GFI = Goodness of fit index, CFI = Comparative fit index, NNFI = Non-normed fit index, RMSEA = Root mean square error of approximation, SRMR = Standardized root mean square.

The chi-square statistic for the model was $\chi^2(6) = 4.483$, $p < .05$, as shown in table 8 and figure 4. The model fit assessment revealed an RMSEA of 0.10 and an SRMR of 0.01. Additionally, the GFI, CFI, and NNFI values for positive mood were 0.972, 0.991, and 0.988, respectively. Thus, the model fit met the required criteria. The revised model is shown below.

Figure 4

Confirmatory Factor Analysis of the Positive Mood (N =315)

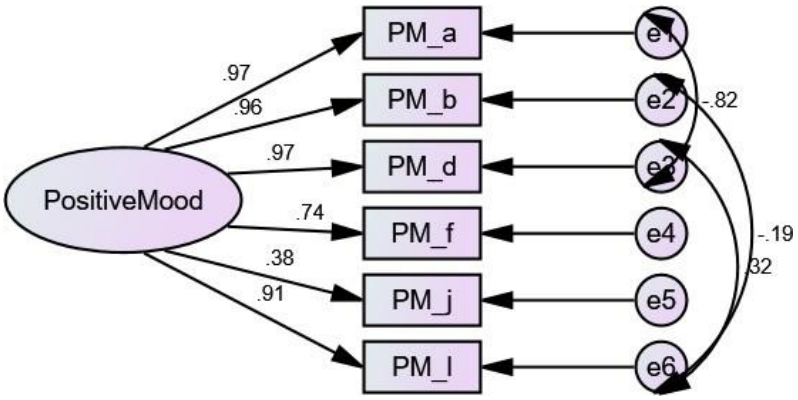

Table 9

Psychometric Properties of Positive Mood (N = 315)

Factors	α	*CR*	*AVE*	λ
Positive Mood	.92	.94	0.73	
Item_1				0.95
Item_2				0.95
Item_3				0.96
Item_4				0.80
Item_5				0.46
Item_6				0.92

Note. CR = Composite reliability, AVE = Average variance extracted, λ = Standardized factor loading, α = Cronbach's alpha.

The lambda values for each item of positive mood, shown in table 9, were found to be around 0.46 or higher, indicating that the variance explained by each item was nearing the expected level (Haire et al., 2010). The proportion of variance explained by each factor provides strong evidence of good convergent validity, with the variance for positive mood being 0.74. Moreover, reliability coefficients, including composite reliability and Cronbach's alpha, ranged from 0.92 to 0.94, which fall within the range of excellent reliability estimates.

Table 10

Fit Indices of Confirmatory Factor Analysis of the Stigmatization (N = 315)

Model	χ^2	*df*	χ^2/df	*GFI*	*CFI*	*NNFI*	*RMSEA*	*SRMR*
Model Fit	19.146	9	2.127	.981	.987	.976	.06	.02

Note. GFI = Goodness of fit index, CFI = Comparative fit index, NNFI = Non-normed fit index, RMSEA = Root mean square error of approximation, SRMR = Standardized root mean square.

The absolute model fit was $\chi^2(9) = 2.127$, $p < .05$, shown in table 10 and figure 5. The evaluation of the model fit revealed an RMSEA of .06 and an SRMR of .02. Additionally, the GFI, CFI, and NNFI values for the positive mood were .981, .987, and .976, respectively. Therefore, the model fit met the required criteria. The optimal model fit is shown below.

Figure 5

Confirmatory Factor Analysis of Stigmatization (N =315)

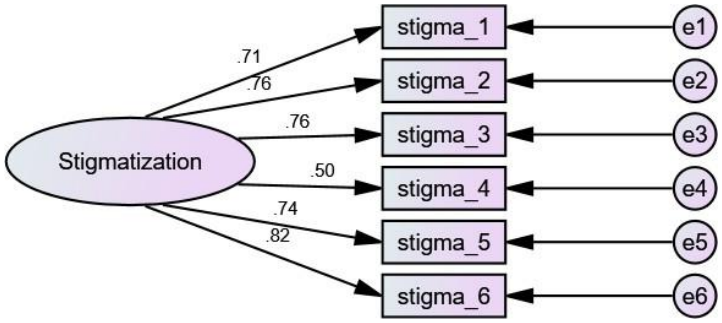

Table 11

Psychometric Properties of Stigmatization (N = 315)

Factors	α	*CR*	*AVE*	λ
Stigmatization	.86	.89	.59	
Item_1				0.76
Item_2				0.81
Item_3				0.81
Item_4				0.58
Item_5				0.78
Item_6				0.84

Note. CR = Composite reliability, AVE = Average variance extracted, λ = Standardized factor loading, α = Cronbach's alpha.

The factor loadings for each item of stigmatization, in table 11, were found to be at least 0.58, suggesting that each item accounted for a significant portion of the variance (Haire et al., 2010). The factor variance, with stigmatization accounting for 59%, provides strong evidence of convergent validity. Furthermore, reliability coefficients, including composite reliability and Cronbach's alpha, ranged from 0.86 to 0.89, indicating excellent reliability.

Table 12

Fit Indices of Confirmatory Factor Analysis of the Anxiety (N = 315)

Model	χ^2	*df*	χ^2/df	*GFI*	*CFI*	*NNFI*	*RMSEA*	*SRMR*
Initial Model	343.34	35	9.810	.791	.582	.561	.16	.14
Model Fit	86.735	27	3.212	.948	.919	.889	.08	.06

Note. GFI = Goodness of fit index, CFI = Comparative fit index, NNFI = Non-normed fit index, RMSEA = Root mean square error of approximation, SRMR = Standardized root mean square.

The absolute model showed a χ^2 (27) = 3.212, $p < .05$, shown in table 12 and figure 6. The model fit assessment revealed RMSEA and SRMR values of .08 and .06, respectively.

Similarly, the GFI, CFI, and NNFI for the positive mood were .948, .919, and .889. Therefore, the model fit evaluation met the criteria for an acceptable fit to a certain degree.

Figure 6

Confirmatory Factor Analysis of the Anxiety (N =315)

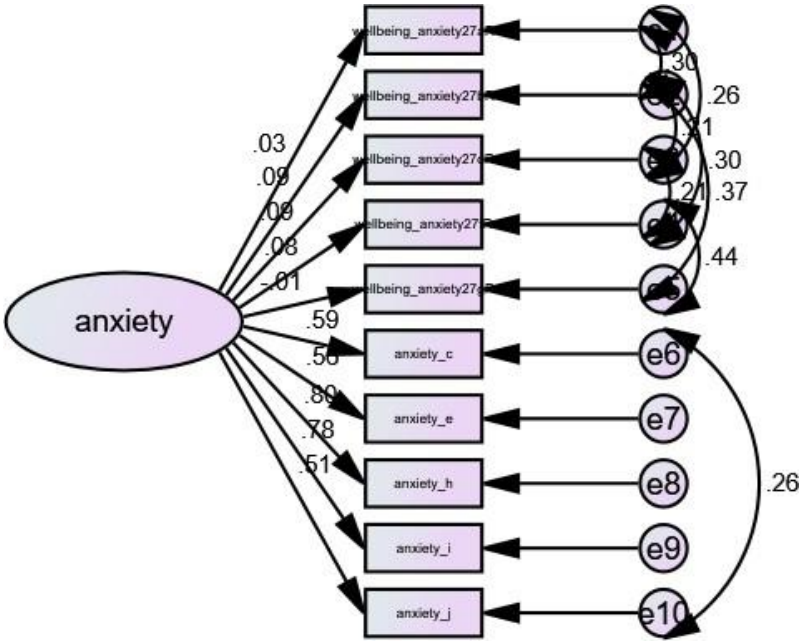

Table 14

Psychometric Properties of Anxiety (N = 315)

Factors	α	*CR*	*AVE*	λ
Anxiety	.71	.78	0.27	
Item_1				0.37
Item_2				0.56
Item_3				0.57
Item_4				0.43
Item_5				0.48
Item_6				0.55
Item_7				0.47
Item_8				0.63
Item_9				0.61
Item_10				0.47

Note. CR = Composite reliability, AVE = Average variance extracted, λ = Standardized factor loading, α = Cronbach's alpha.

The factor loading for each item of anxiety, shown in table 14, was found to be around 0.37 or higher, indicating that the variance explained by each item was significant (Haire et al., 2010). The variance explained by anxiety was 0.50. Additionally, the reliability coefficients, including composite reliability and Cronbach's alpha, ranged from 0.71 to 0.78, which are considered to be excellent reliability estimates.

Validation of the ISDL Urdu Translation

Initially, Urdu translation of ISDL was administered on small sample (N=15) to assess the accuracy and appropriateness of the translated version. Later on, criterion validation process including convergent or construct validity and group known validity were assessed. Group differences were examined using Independent Sample t-Test and One Way ANOVA.

Table 15

Item Level Correlation and Mean Differences between ISDL English and ISDL Urdu Versions (N=315)

Items	URDU VERSION M(SD)	ENGLISH VERSION M(SD)	R
ISDL_1	3.00(.698)	3.00(.935)	.86***
ISDL_2	3.84(.796)	3.84(.884)	.73***
ISDL_3A	1.80(1.04)	1.81(1.05)	.97***
ISDL_3B	1.09(.349)	1.11(.387)	.74***
ISDL_3C	1.23(.609)	1.23(.609)	.76***
ISDL_3D	1.26(.680)	1.25(.666)	.61***
ISDL_3E	1.05(.304)	1.04(.289)	.91***
ISDL_3F	1.19(.565)	1.18(.562)	.68***
ISDL_3G	1.17(.531)	1.16(.525)	.72***
ISDL_3H	1.12(.456)	1.12(.459)	.65***
ISDL_3I	1.42(.842)	1.41(.837)	.84***
ISDL_4	2.70(.458)	2.71(.450)	.90***
ISDL_5	2.19(.884)	2.17(.887)	.83***
ISDL_6	1.48(.779)	1.51(.799)	.84***
ISDL_7	3.16(.748)	3.16(.745)	.86***
ISDL_8	3.19(.769)	3.18(.762)	.86***
ISDL_9	3.19(.766)	3.19(.766)	.87***
ISDL_10	3.14(.734)	3.13(.739)	.86***
ISDL_11A	2.90(.696)	2.88(.693)	.80***
ISDL_11B	1.37(.563)	1.45(.735)	.79***
ISDL_12	3.14(.715)	3.12(.724)	.83***
ISDL_13	3.11(.709)	3.10(.723)	.81***
ISDL_14	3.12(.684)	3.13(.676)	.83***
ISDL_15	3.15(.716)	3.14(.715)	.83***
ISDL_16	2.76(.867)	2.76(.879)	.83***
ISDL_17A	3.29(.631)	3.26(.640)	.90***
ISDL_17B	2.93(.672)	2.95(.677)	.92***
ISDL_17C	2.96(.662)	2.98(.665)	.88***
ISDL_17D	3.05(.670)	3.06(.668)	.88***
ISDL_17E	3.49(.692)	3.51(.683)	.87***
ISDL_17F	1.42(.907)	1.40(.887)	.79***
ISDL_17G	3.29(.596)	3.31(.591)	.86***
ISDL_17H	3.39(.605)	3.41(.598)	.84***
ISDL_17I	3.20(.638)	3.22(.635)	.89***
ISDL_17J	3.18(.643)	3.20(.649)	.93***
ISDL_17K	806.1(394.0)	815.6(386.0)	.88***
ISDL_17L	866.1(339.1)	875.6(328.6)	.90***
ISDL_18A	3.00(.686)	3.02(.690)	.86***
ISDL_18B	2.96(.743)	2.98(.752)	.84***
ISDL_18C	3.01(.704)	3.04(.710)	.76***
ISDL_18D	3.36(.707)	3.37(.700)	.82***
ISDL_18E	2.98(.688)	3.00(.693)	.82***
ISDL_18F	2.99(.731)	3.01(.735)	.84***
ISDL_18G	2.35(.965)	2.34(.975)	.79***
ISDL_19A	2.04(.473)	2.04(.470)	.86***
ISDL_19B	1.90(.480)	1.90(.479)	.84***
ISDL_19C	3.22(.637)	3.23(.641)	.80***

ISDL_19D	1.93(.446)	1.93(.442)	.84***
ISDL_19E	3.21(.596)	3.21(.596)	.83***
ISDL_19F	1.85(.493)	1.84(.500)	.83***
ISDL_19G	1.85(.498)	1.85(.496)	.83***
ISDL_19H	3.19(.632)	3.20(.634)	.74***
ISDL_19I	3.27(.587)	3.26(.592)	.83***
ISDL_19J	3.21(.635)	3.21(.638)	.75***
ISDL_20A	2.40(.681)	2.40(.680)	.82***
ISDL_20B	2.43(.712)	2.42(.715)	.71***
ISDL_20C	3.88(.827)	3.91(.830)	.76***
ISDL_20D	2.43(.726)	2.43(.725)	.75***
ISDL_20E	3.31(1.06)	3.33(1.07)	.90***
ISDL_20F	2.37(.748)	2.36(.747)	.83***
ISDL_20G	3.97(.708)	3.99(.711)	.76***
ISDL_20H	4.01(.691)	4.03(.687)	.76***
ISDL_20I	3.96(.713)	3.98(.715)	.72***
ISDL_20J	2.32(.626)	2.32(.624)	.82***
ISDL_20K	4.02(.697)	4.04(.701)	.75***
ISDL_20L	2.40(.695)	2.40(.695)	.87***
ISDL_21	2.56(1.09)	2.56(1.09)	1.00***
ISDL_22A	2.09(.644)	2.08(.635)	.85***
ISDL_22B	2.29(.895)	2.29(.887)	.89***
ISDL_22C	2.00(.709)	2.01(.704)	.86***
ISDL_22D	2.63(.861)	2.64(.856)	.89***
ISDL_22E	2.14(.684)	2.14(.680)	.85***
ISDL_23A	3.45(.618)	3.45(.618)	.83***
ISDL_23B	1.59(.563)	1.58(.565)	.81***
ISDL_23C	1.45(.570)	1.46(.570)	.83***
ISDL_23D	1.35(.511)	1.34(.509)	.82***
ISDL_23E	3.45(.648)	3.47(.639)	.83***
ISDL_23F	1.67(.520)	1.66(.513)	.82***
ISDL_23G	3.48(.588)	3.48(.588)	.77***
ISDL_23H	1.87(.878)	1.92(.927)	.84***
ISDL_23I	3.51(.614)	3.53(.603)	.83***
ISDL_23J	1.36(.494)	1.35(.493)	.90***
ISDL_23K	1.17(.377)	1.17(.377)	.79***
ISDL_23L	3.43(.627)	3.45(.618)	.84***
ISDL_23M	1.27(.447)	1.27(.446)	.84***
ISDL_23N	1.19(.395)	1.19(.393)	.82***
ISDL_23O	3.52(.554)	3.53(.554)	.81***
ISDL_23P	3.15(.838)	3.15(.839)	.78***
ISDL_23Q	1.26(.439)	1.25(.435)	.83***
ISDL_23R	1.16(.368)	1.15(.363)	.88***
ISDL_24	1.83(.858)	1.82(.837)	.83***

Note. ***p<.001

Table 15 showed item level correlations between ISDL English and Urdu versions. Results indicated highly significant and positive correlations between all the items of English and Urdu versions. These significant correlation coefficients underscore a substantial and consistent linear relationship between the English and Urdu versions of the scale. Overall, the findings point to a robust concordance between the two language versions for all scale items.

Convergent Validity

Convergent validity refers to the extent to which a test designed to measure a specific construct is related to other tests that evaluate the same or similar constructs (Nikolopoulou, 2022). To ensure the convergent validity, DLQI was used as it also measures the impact of skin conditions on overall QoL (Finlay & Khan, 1994). It was hypothesized that ISDL both English and Urdu versions are likely to be positively correlated with DLQI. Pearson Product Moment Correlation was done using SPSS. Findings are presented in table 16.

Table 16

Correlation between Original ISDL, Urdu ISDL and DLQI (N=315)

Variables	ISDL-Urdu	ISDL-English	DLQI
ISDL-Urdu	-	.996***	.175**
ISDL-English		-	.165**
DLQI			-

Note. ISDL=Impact of Skin Diseases on Daily Life Scale, DLQI= Dermatology Life Quality Index, **p<.01, ***p<.001.

Table 16 showed positive correlation between ISDL Urdu, English and DLQI that was used as a comparative questionnaire. Findings reflected that DLQI was positively correlated with both English and Urdu versions of ISDL, determining accuracy of the translated tool. Size of correlation of DLQI with both Urdu and English Versions of ISDL is comparable. Furthermore, as per the scoring procedure of the above mentioned scales, it is interpreted that higher psychosocial impact of skin conditions tend to have greater impact on individual's life resulting in poor QoL.

Known Groups Validity

Known group validity, also referred to as criterion validation, is a type of construct validation. It involves assessing the validity of an instrument based on how effectively it produces different scores for groups that are known to differ on the variables being measured. In order to assess the various group differences, t-test and one way ANOVA were run.

Table 17

Gender Comparison in terms of Psychosocial Impact of Skin Conditions & QoL (N=315)

	Men (n=143)		Women (n=172)				*95% CI*		
Variable	*M*	*SD*	*M*	*SD*	*t(313)*	*p*	*LL*	*UL*	*Cohen's d*
Skin Status	11.33	1.26	11.36	1.02	-.237	.813	-.284	.223	-
Physical Symptoms									
Itching	12.94	2.30	11.68	2.53	4.56	.000***	.716	1.79	0.52
Pain	2.20	.862	2.18	.904	.237	.813	-.173	.221	-
Fatigue	1.41	.706	1.54	.832	-1.44	.150	-.300	.046	-
Scratching									
Conscious Scratching	9.24	1.48	8.47	1.83	4.05	.000***	.398	1.14	0.46
Automatic Scratching	9.76	1.67	9.06	1.88	3.41	.001**	.293	1.09	0.39
Scratching at Night	3.31	.665	3.02	.733	3.66	.000***	.134	.447	0.41
Scratching with Object	1.46	.566	1.29	.550	2.61	.009**	.040	.289	0.30
Impact on Daily Life									

General Impact	30.68	2.94	29.91	3.67	2.02	.043*	.023	1.52	0.23
Impact on Activities	16.01	1.83	15.54	2.39	1.93	.054	-.007	.953	-
Impact Sexual Function	1.62	1.07	1.25	.693	3.76	.000***	.181	.577	0.41
Impact on Eating & Sleeping	6.59	1.03	6.76	1.10	-1.42	.156	-.412	.066	-
Impact on Relationships	6.44	1.01	6.35	1.18	.740	.460	-.153	.339	-
Impact on the Partner	.790	1.49	.540	1.28	1.59	.112	-.058	.557	-
Impact on the Family	.384	1.04	.383	1.00	.008	.994	-.227	.229	-
Stigmatization	18.51	3.27	18.19	3.27	.860	.391	-.410	1.04	
Psychological Functioning									
Anxiety	21.84	2.07	21.87	1.93	-.115	.909	-.471	.419	-
Negative Mood	23.44	3.39	22.97	3.50	1.18	.236	-.305	1.23	-
Positive Mood	14.64	3.75	14.17	3.42	1.15	.247	-.327	1.26	-
Social Support									
Social Network	2.52	1.07	2.59	1.11	-.599	.550	-.318	.170	-
Potential Social Support	11.60	2.72	10.82	2.92	2.41	.016*	.144	1.40	0.27
Illness Cognitions									
Helplessness	18.65	2.20	18.43	2.29	.867	.386	-.280	.723	-
Acceptance	7.92	1.79	8.33	2.08	-1.84	.067	-.844	.028	-
Perceived Benefits	10.41	1.62	10.37	1.76	.247	.805	-.330	.425	-
ISDL Total Score	243.80	13.80	237.17	15.75	3.93	.000***	3.31	9.94	0.45
DLQI	22.51	4.15	23.02	4.34	-1.07	.283	-1.46	.430	-

*Note. I*SDL= Impact of Skin Disease on Daily Life, DLQI= Dermatology Life Quality Index, *$p < .05$, ** $p < .01$, *** $p < .001$.

As depicted in table 17, the findings of the independent sample t-test revealed that men reported itching, conscious scratching, automatic scratching, scratching at night and scratching with object as most commonly occurring symptoms as compared to women, which reflects poor physical functioning. In addition, men also reported greater impact of skin conditions on their daily life resulting in adverse effects on their sexual functioning. Interestingly, it was found that men tend to experience greater social support from family, friends and peers as compared to women, which might help them to manage their skin condition. As per the total scores of ISDL scale, men tend to experience higher psychosocial impact of skin conditions resulting in poorer QoL.

Table 18

Comparison of Working Status for Psychosocial Impact of Skin Conditions & QoL (N=315)

	Working (n=171)		Non-Working (n=144)				*95% CI*		
Variable	*M*	*SD*	*M*	*SD*	*t(313)*	*p*	*LL*	*UL*	Cohen's d
Skin Status	11.43	1.19	11.25	1.06	1.36	.173	-.077	.429	-
Physical Symptoms									
Itching	12.59	2.53	11.85	2.42	2.64	.009**	.189	1.29	0.29

Pain	2.24	.873	2.13	.897	1.06	.287	-.090	.303	-
Fatigue	1.50	.777	1.47	.783	.348	.728	-.142	204	-
Scratching									
Conscious Scratching	8.92	1.65	8.70	1.80	1.13	.256	-.161	.607	-
Automatic Scratching	9.59	1.78	9.13	1.84	2.26	.024*	.061	.867	0.25
Scratching at Night	3.26	.682	3.02	.738	2.93	.004**	.077	.393	0.33
Scratching with Object	1.43	.613	1.29	.488	2.11	.035*	.009	.258	0.25
Impact on Daily Life									
General Impact	30.57	3.23	29.88	3.51	1.81	.071	-.059	1.43	-
Impact on Activities	15.96	2.05	15.50	2.28	1.87	.062	-.022	.938	-
Impact Sexual Function	1.50	1.00	1.32	.773	1.72	.086	-.024	.377	-
Impact on Eating & Sleeping	6.67	1.05	6.70	1.10	-.294	.769	-.275	.203	-
Impact on Relationships	6.43	1.07	6.34	1.14	.729	.467	-.155	.338	-
Impact on the Partner	.801	1.50	.479	1.22	2.06	.040*	.014	.629	0.23
Impact on the Family	.444	1.10	.312	.911	1.14	.255	-.095	.359	-
Stigmatization	18.36	3.31	18.29	3.23	.188	.851	-.659	.799	
Psychological Functioning									
Anxiety	22.02	1.96	21.65	2.02	1.64	.102	-.073	.812	-
Negative Mood	23.41	3.65	22.91	3.19	1.27	.203	-.269	1.26	-
Positive Mood	14.52	3.46	14.22	3.71	.751	.453	-.492	1.10	-
Social Support									
Social Network	2.54	1.12	2.58	1.06	-.271	.787	-.277	.210	-
Potential Social Support	11.45	2.85	10.84	2.82	1.89	.059	-.023	1.24	0.27
Illness Cognition									
Helplessness	18.71	2.24	18.32	2.24	1.52	.129	-.113	.887	-
Acceptance	7.83	1.90	8.51	1.98	-3.08	.002**	-1.10	-.245	0.35
Perceived Benefits	10.32	1.68	10.47	1.71	-.821	.412	-.535	.220	-
ISDL Total Score	242.61	15.68	237.29	14.21	3.12	.002**	1.97	8.66	0.35
DLQI	22.57	4.01	23.05	4.53	-1.00	.318	-1.43	.465	-

Note. ISDL= Impact of Skin Disease on Daily Life, DLQI= Dermatology Life Quality Index, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 18 identifies differences between working and non-working individuals via independent sample t-test. Results indicated that working individuals tend to report more severe symptoms of itching and scratching as compared to non-working individuals. Similarly, findings suggested that working individuals who were married tend to report dissatisfied relationship with spouse. In addition, working individuals tend to receive greater social support from family, friends and peers that may have significant positive impact on QoL. Moreover, findings revealed that non-working individuals tend to accept their skin conditions as

compared to working individuals. This finding suggested that skin conditions tend to have greater impact on work related QoL that might increase the psychosocial impact of skin conditions in working individuals. This might be a significant cause that working individuals didn't accept or adjust with their skin conditions. In the present study, working individuals tend to report higher psychosocial impact of skin conditions on their overall QoL as compared to non-working group.

Table 19

Comparison of Family Systems for Psychosocial Impact of Skin Conditions & QoL (N=315)

	Nuclear (n=202)		Joint (n=113)				*95% CI*		
Variable	*M*	*SD*	*M*	*SD*	*t(313)*	*p*	*LL*	*UL*	Cohen's d
Skin Status	11.32	.997	11.40	1.36	-.636	.525	-.348	.178	-
Physical Symptoms									
Itching	11.99	2.60	12.73	2.26	-2.54	.011*	-1.31	-.169	0.15
Pain	2.16	.885	2.25	.884	-.897	.370	-.297	.111	-
Fatigue	1.45	.760	1.54	.812	-1.01	.309	-.273	.086	-
Scratching									
Conscious Scratching	8.63	1.78	9.15	1.56	-2.61	.009**	-.921	-.129	0.31
Automatic Scratching	9.21	1.83	9.69	1.76	-2.24	.026*	-.896	-.058	0.26
Scratching at Night	3.11	.716	3.22	.716	-1.21	.224	-.268	.063	-
Scratching with Object	1.35	.591	1.39	.509	-.631	.528	-.172	.088	-
Impact on Daily Life									
General Impact	30.09	3.40	30.56	3.32	-1.19	.235	-1.25	.308	-
Impact on Activities	15.74	2.26	15.77	1.98	-.142	.887	-.538	.465	-
Impact Sexual Function	1.32	.811	1.59	1.04	-2.51	.012*	-.474	-.058	0.28
Impact on Eating & Sleeping	6.66	1.08	6.73	1.06	-.562	.574	-.320	.177	-
Impact on Relationships	6.36	1.10	6.46	1.11	-.759	.449	-.355	.157	-
Impact on the Partner	.460	1.18	1.00	1.64	-3.36	.001**	-.855	-.223	0.37
Impact on the Family	.272	.875	.584	1.22	-2.61	.009**	-.546	-.077	0.29
Stigmatization	18.27	3.24	18.45	3.34	-.465	.642	-.936	.578	-
Psychological Functioning									
Anxiety	21.84	1.92	21.89	2.12	-.222	.824	-.514	.409	-
Negative Mood	23.04	3.42	23.43	3.50	-.946	.345	-1.18	.414	-
Positive Mood	14.56	3.45	14.07	3.78	1.17	.241	-.333	1.32	-
Social Support									
Social Network	2.59	1.09	2.51	1.10	.627	.531	-.172	.334	-
Potential Social Support	11.03	2.84	11.43	2.86	-1.19	.235	-1.05	.260	-

Illness Cognitions									
Helplessness	18.61	2.29	18.39	2.18	.814	.416	-.305	.736	-
Acceptance	8.05	2.00	8.30	1.89	-1.10	.270	-.709	.199	-
Perceived Benefits	10.30	1.66	10.54	1.72	-1.21	.226	-.633	.149	-
ISDL Total Score	238.50	15.07	243.18	15.13	-2.64	.009**	-8.17	-1.19	0.30
DLQI	22.79	4.03	22.78	4.65	.019	.985	-.977	.995	-

Note: ISDL= Impact of Skin Disease on Daily Life, DLQI= Dermatology Life Quality Index, **p* < .05, ***p* < .01, ****p* < .001.

Results of t test shown in table 19 indicated that individuals living in joint family system tend to report more severe symptoms of itching and scratching as compared to individuals with nuclear family system. It was also suggested that individuals in joint families tend to report poor sexual functioning due to their skin condition. In addition, individuals living in joint families tend to report negative impact of skin condition on their marital and family life which may have significant negative influence on QoL. Moreover, t-test revealed that individuals living in joint families tend to experience greater psychosocial impact of skin conditions. This can be a significant reason that individuals living in joint families tend to have a daily interaction with other family members that might trigger their psychosocial issues and cause adverse impact on QoL.

Table 20

One Way ANOVA Comparing Individuals with Different Types of Skin Conditions for Psychosocial Impact of Skin Disease (N=315)

Variable	Eczema (n=105)		Psoriasis (n=100)		Acne Vulgaris (n=110)		*F* (2,312)	*p*	Partial η^2
	M	*SD*	*M*	*SD*	*M*	*SD*			
ISDL	241.3	14.11	243.9	13.35	235.6	16.78	8.65	.000***	.053
DLQI	24.00	4.25	22.16	3.62	22.21	4.58	6.53	.002**	.040

Note. ISDL= Impact of Skin Disease on Daily Life, DLQI= Dermatology Life Quality Index, η^2= Eta Square, ***p*<.01, ****p*<.001.

Table 20 revealed that individuals with psoriasis tend to report higher psychosocial impact of skin condition on their daily lives as compared to individuals with eczema and acne vulgaris. On the other hand, it was found that individuals with eczema tend to report poorer QoL as compared to individuals with psoriasis and acne.

Table 21

One Way ANOVA Comparing Individuals with Exposed, Unexposed and Both Types of Psoriasis in terms of Psychosocial Impact and QoL (N=315)

Variable	Exposed (n=36)		Unexposed (n=21)		Both (n=43)		*F* (2,97)	*p*
	M	*SD*	*M*	*SD*	*M*	*SD*		
ISDL	239.8	15.75	242.3	12.32	248.1	10.34	4.27	.017**
DLQI	23.50	3.73	22.09	2.80	21.06	3.56	4.75	.011*

Note. ISDL= Impact of Skin Disease on Daily Life, DLQI= Dermatology Life Quality Index, **p*<.05, ***p*<.01.

Table 21 indicates that individuals affected by psoriasis on both exposed and unexposed body parts tend to perceive higher psychosocial impact of skin condition on their daily lives as compared to those who got psoriasis patches on exposed and unexposed body parts only. On the other hand, it was found that individuals with exposed psoriasis tend to report poorer QoL as compared to other individuals.

Table 22

One Way ANOVA Comparing Individuals with Exposed, Unexposed and Both Types of Eczema in terms of Psychosocial Impact and QoL (N=315)

Variable	Exposed (n=48)		Unexposed (n=13)		Both (n=44)		*F* (2,102)	*p*
	M	*SD*	*M*	*SD*	*M*	*SD*		
ISDL	241.1	14.84	238.5	8.87	242.3	14.68	.377	.687
DLQI	24.10	5.04	24.84	3.15	23.63	3.58	.427	.654

Note. ISDL= Impact of Skin Disease on Daily Life, DLQI= Dermatology Life Quality Index, **p*<.05, ***p*<.01.

Surprisingly, findings of table 22 revealed no significant mean differences among individuals having eczema on exposed and unexposed body parts, in terms of psychosocial impact and QoL. Individuals with exposed and unexposed eczema are equally affected by the psychosocial impact of their skin condition resulting poorer QoL.

Discussion

The purpose of this study was to translate and validate the Impact of Skin Diseases on Daily Life (ISDL) Scale into the Urdu language. Much of the existing research on the psychosocial effects of skin conditions has utilized the English version of the ISDL, primarily conducted in English-speaking countries. Given the need for an Urdu version of the full-length scale, this study aimed to translate and validate the ISDL to support research on the psychosocial impact of skin conditions using a multidimensional approach in Urdu-speaking populations, both within Pakistan and internationally. A series of analyses were performed on a total of N=315 individuals with psoriasis, eczema, and acne vulgaris to assess the translation and evaluate the psychometric properties.

To guarantee translation accuracy and conceptual meaning transmission, a conventional forward and backward translation approach was used. For approval on the translation of the items, a committee approach was implemented at each stage. This process resulted in a high-quality translation of the instrument, with both the English and Urdu versions showing strong correlation, demonstrating the effectiveness of the translation. Individuals with different skin conditions are reported to experience significant psychosocial consequences. Asian residents are especially prone to skin-related psychological morbidity because of the stark contrast that their darker skin tones cause (Gupta et al., 2014). It has a severe social stigma attached to it, causes psychological discomfort, and has an impact on interpersonal interactions. Many individuals with skin conditions such as psoriasis, eczema and acne vulgaris, believe they are the targets of discrimination and rude remarks because of their skin disease. Due to widespread gender inequality in society, Indian women likely have the worst QoL impairment compared to men (Parsad et al., 2003).

Interestingly, the current study observed that men typically experience psychosocial impact of skin conditions than women. In general, men are given less attention than women

even though they may experience similar conflicts or problems in life. Gender roles and responsibilities are shaped by societal or cultural influences and can evolve over time. These roles establish the behaviors, attitudes, and expectations associated with masculinity and femininity within a community. The majority of the time, people are expected to conform to these positions and exhibit these conventional behaviors. Living within the boundaries of these linked behaviors, however, may be uncomfortable, challenging, and stressful for many men (Adil et al., 2017). Additionally, skin conditions such as acne vulgaris significantly impact the psychosocial well-being of individuals in Pakistan, including men. Research indicates that acne is prevalent among Pakistani youth and adversely affects their QoL. A study assessing the impact of acne on young Pakistani adults found a significant correlation between acne severity and QoL impairment, with male participants reporting notable psychosocial challenges (Naveed et al., 2021). Moreover, a study on the psychosocial impact of acne vulgaris in Pakistani adolescents reported that men experienced moderate to severe effects on their QoL, highlighting the need for comprehensive care that addresses both physical and psychological aspects of skin conditions (Khan et al., 2023).

Similarly, psoriasis significantly impacts the psychosocial well-being of individuals, including men, in Pakistan. Studies have shown that psoriasis is associated with psychiatric disorders such as depression and anxiety, which can affect various aspects of life, including professional and social interactions (Khawaja et al., 2015). The psychological burden of psoriasis may lead to social stigmatization, and psychological distress, further affecting the overall QoL (Ahmed & Javed, 2014). While specific studies focusing solely on the psychosocial effects of eczema on Pakistani men are limited, general research indicates that individuals with eczema are more susceptible to mental health issues such as depression and anxiety (National Eczema Association, 2024). In Pakistan, eczema is prevalent and can lead to psychological distress due to visible symptoms, social stigma, and the chronic nature of the condition, especially in men. A study conducted in a tertiary care hospital in Pakistan found that eczema was the most frequently observed skin disorder, accounting for 31.07% of the total number of patients, in which most of were men (Aman et al., 2017). Results of the present study are in line with previous researches. These findings underscore the importance of recognizing and addressing the psychosocial impact of skin conditions on men in Pakistan to improve their overall QoL.

There is evidence that visible skin conditions can cause significant psychosocial impact on individual's overall QoL, especially those who are in professional fields (Yew et al, 2020). In the present study, criterion validation process (known group validity) revealed that working individuals tend to experience greater psychosocial impact of skin conditions as compared to non-working group. It was also indicated that working individuals find it difficult to accept or adjust with their skin diseases. Adding to this, Yew et al (2020) found that individuals with skin diseases are more likely to experience depressive symptoms, social isolation, loneliness, and a lower QoL, which can adversely affect work performance and professional relationships. Zhang et al (2019) conducted a review which highlights that skin diseases can distort body image, negatively impacting psychosocial health and QoL. Such effects may lead to decreased work productivity and challenges in workplace interactions. Costeris et al (2021) indicates that skin disorders are associated with reduced self-esteem and perceived social support, potentially leading to difficulties in professional settings and diminished job satisfaction. So, the findings of current study are consistent with previous literature.

Skin conditions can significantly impact an individual's psychosocial functioning, affecting aspects such as body image, self-confidence, self-concept, social interactions, and mental health. In the present study it was found that individuals with skin conditions living in joint families tend to report greater psychosocial impact of their skin diseases. In a joint family system, where multiple generations live together, these effects can be amplified due to

increased social exposure and familial expectations (Yew et al., 2020). Living in a joint family means more frequent interactions with a larger number of family members and visitors. Visible skin conditions may lead to heightened self-consciousness and anxiety during these interactions (Zhang et al., 2019). Joint families often have strong cultural and traditional values. Skin conditions might be misunderstood or stigmatized, leading to feelings of shame or the need to conceal the condition. While joint families can provide robust support networks, they may also contribute to stress if family members lack understanding or empathy regarding the skin condition (Hughes et al., 2023). The psychosocial impact of skin conditions in individuals living in joint family systems can be profound, influenced by increased social interactions, cultural expectations, and the dynamics of familial support. Addressing these challenges requires a comprehensive approach that includes medical treatment, psychological support, and education to foster understanding within the family unit. Furthermore, the present study found that individuals with psoriasis having scaly patches on exposed body parts tend to experience greater psychosocial impact that also influenced their overall QoL in a negative way. Current finding is consistent with empirical evidence. This study found that individuals with visible skin conditions, such as psoriasis, exhibit lower self-esteem and perceive reduced social support compared to those with non-visible skin conditions. These psychological challenges can hinder social interactions and have significant impact on psychosocial functioning (Costeris et al, 2021). Adding to this, another research indicates that individuals with psoriasis are more likely to experience depressive symptoms, social isolation, loneliness, and stigmatization. The visibility of skin conditions can exacerbate these psychosocial issues, leading to significant emotional distress (Germain et al., 2021).

Lastly, it was revealed that individuals with eczema tend to report poorer QoL. Findings are in line with previous studies as Ho Na et al (2019) emphasizes that atopic dermatitis negatively affects patients' QoL across physical, psychosocial, and mental domains. The chronic nature of eczema leads to persistent discomfort and psychological distress. Kilic and Kilic (2023) indicates that individuals with eczema experience a reduced QoL, with increased anxiety and depression levels. National Eczema Foundation (2023) conducted a survey which suggest that individuals with eczema tend to exhibit poor perceptions about their QoL. Research conducted by Holm et al (2006) revealed that atopic eczema adversely affects health-related QoL, particularly in mental health, social functioning, and emotional roles, more so than physical functioning. Adding to this, another study found that eczema has enduring negative effects on daily functioning and overall QoL of individuals.

These studies collectively underscore the profound psychosocial impact of skin conditions on individuals' QoL, highlighting the necessity for comprehensive treatment approaches that address both the physical symptoms and the associated psychosocial challenges.

Conclusion

In conclusion, skin conditions have a profound psychosocial impact that goes far beyond the physical manifestations of the condition. It may have a major impact on individual’s overall QoL. The psychosocial issues caused by Psoriasis, Eczema and Acne Vulgaris, emphasize how crucial it is to spread knowledge and support individuals who have been affected by it. The ISDL scale was translated, validated, and its psychometric properties were assessed. The results obtained were both accurate and reliable. The primary aim was to translate the impact of skin disease on daily life (ISDL) scale in native language according to Pakistani population. This study proved adequate validity and good reliability for the translated version of standardized measure. The translated questionnaire will enable other researchers to gather information more easily in their native language. In conclusion, the findings of the current study confirmed the hypothesis that an assessment tool with satisfactory reliability and validity is suitable for evaluating the psychosocial effects of skin conditions or skin-specific QoL.

Limitations, Recommendations, and Implications

This is the first study to examine the translation of the ISDL into Urdu and assess its psychometric validity and factor structure within the context of Pakistani culture. The study has followed rigorous procedures to establish the ISDL-Urdu version as a valid and reliable tool for evaluating the psychosocial impact of skin conditions in the Urdu-speaking population of Pakistan. However, there are some limitations that should be addressed in future research.

First, the majority of participants were relatively young, leading to limited age diversity. Another concern is that all participants had a high level of education. For studies focused on basic psychometric properties and initial factorial validity, it is essential to ensure diversity in age, education, residential area, and socioeconomic status. While socioeconomic diversity was represented in this study, as participants were recruited from both government and private hospitals, the other factors require broader consideration.

Nevertheless, this study provides the first psychometric and factorial evidence for the ISDL Urdu version and its suitability for Pakistani culture. The ISDL-Urdu version will help facilitate research on the psychosocial impact of skin conditions and skin-specific QoL in Pakistan, contributing to the inclusion of the Urdu-speaking population in larger datasets and enabling future cross-cultural comparisons.

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