Urdu Translation and Cross-Language Validation of DSM-5 Checklist for Substance Use Disorders

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Abstract

Substance use disorders represent a major public health concern in South Asia, yet the lack of culturally and linguistically validated diagnostic instruments limits accurate assessment and research. Standardized tools grounded in DSM-5 criteria are essential for reliable screening and severity evaluation in Urdu-speaking populations. The primary objective of this study was to translate and psychometrically validate the DSM-5 Checklist for Substance Use Disorders in the Urdu language. The present study was conducted in two phases. Phase I involved the translation of the scale using Brislin guidelines, while Phase II focused on validating the translated version. A cross-sectional research design and purposive sampling technique were used to recruit a sample of 300 participants. Confirmatory Factor Analysis (CFA) was performed to validate the factor structure of the Urdu version. Psychometric properties were evaluated using Cronbach's alpha reliability and assessments of correlation with other variables. The scale demonstrated excellent reliability and validity, with a Cronbach's alpha of 0.93. Confirmatory factor analysis indicated an excellent fit, with all goodness-of-fit indices exceeding recommended thresholds and RMSEA within acceptable limits, supporting the factorial validity of the Urdu DSM-5 Checklist for Substance Use Disorders. The Urdu DSM-5 Checklist for Substance Use Disorders demonstrated strong positive correlations with the DAST-10, supporting convergent validity, and weak negative correlations with the Rosenberg Self-Esteem Scale, confirming discriminant validity. These findings indicate that the Urdu-translated checklist is a reliable and valid instrument, facilitating culturally appropriate research, diagnostic screening, and assessment of symptom severity among Urdu-speaking populations.

Keywords: Urdu translation, scale validation, DSM-5 Checklist for Substance Use Disorders

Introduction

Substance Use Disorder (SUD) is a chronic, relapsing condition characterized by compulsive substance use despite significant adverse consequences for psychological functioning, social relationships, and overall quality of life (Volkow & Blanco, 2023). Rather than viewing substance-related problems as discrete categories, the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) conceptualizes SUD as a single, dimensional diagnosis, with a uniform set of diagnostic criteria applied across different substance classes, varying only in severity (American Psychiatric Association, 2013). This dimensional approach allows for a more comprehensive assessment of substance-related impairment and clinical severity.

Substance Use Disorder profoundly affects multiple domains of functioning, often resulting in marked cognitive, emotional, and behavioral impairments (Iqbal et al., 2025). Chronic substance use disrupts neural circuits associated with reward processing, motivation, and impulse control, leading to compulsive drug-seeking behavior and reduced self-regulatory capacity (Volkow et al., 2019). These neurobiological alterations contribute to core DSM-5 symptoms such as cravings, tolerance, withdrawal, and continued use despite harm, ultimately undermining psychological wellbeing. Individuals with SUD commonly experience mood instability, heightened anxiety, irritability, and co-occurring psychiatric conditions, further complicating diagnosis and treatment (Wai et al., 2020). As substance use becomes increasingly central to daily functioning, it interferes with academic, occupational, and interpersonal roles, reinforcing cycles of dysfunction and distress (Iqbal et al., 2024).

Beyond its psychological and neurobiological effects, substance use disorder (SUD) is associated with significant physical and social impairments. Prolonged substance use is linked to serious health conditions, including cardiovascular, hepatic, and respiratory complications (Zacharia & Jacob, 2024), while social consequences often include stigma, interpersonal conflict, and social withdrawal (Iqbal et al., 2025). These multidimensional impairments underscore the clinical importance of early, accurate, and standardized diagnostic assessment. Reliable identification of SUD severity, as outlined in the DSM-5 framework, is essential for appropriate clinical decision-making, treatment planning, and research comparability, thereby highlighting the need for culturally and linguistically validated diagnostic tools.

Globally, Substance Use Disorder (SUD) exerts a substantial burden not only on individuals who use substances but also on their families, particularly children. The intergenerational effects of parental SUD include enduring emotional, psychological, social, behavioral, and developmental consequences that may persist into adulthood. Evidence indicates that millions of children worldwide live with at least one parent affected by substance use disorder, placing them at heightened risk for multiple psychosocial adversities (Lipari & Van Horn, 2017). Parental SUD disrupts family systems through compromised parenting, emotional unavailability, and impaired parent–child attachment, alongside indirect consequences such as financial strain and social stigma (Iqbal et al., 2025).

In this context, reliable and standardized assessment of SUD is essential for both clinical practice and research, particularly within family-centered frameworks. Although several screening and diagnostic instruments have been developed internationally to assess substance use severity and related impairments, the absence of a standardized, culturally appropriate Urdu version of a DSM-5–based diagnostic checklist represents a critical gap in the Pakistani context. Therefore, the Urdu translation and cross-language validation of the DSM-5 Checklist for Substance Use Disorders was undertaken as a methodological component of the present study to ensure accurate assessment, enhance research rigor, and support evidence-based practice in Urdu-speaking populations.

A growing body of research underscores the importance of culturally adapted screening and diagnostic tools in South Asian contexts. In Pakistan, several instruments, including the Brief Dissociative Experience scale for substance use disorder, have been successfully translated and validated, leading to improved diagnostic accuracy and enhanced clinical applicability (Asif &

Rafique, 2024). Despite these advancements, the DSM-5 Checklist for Substance Use Disorders has not been systematically translated or psychometrically validated in Urdu. This gap restricts the ability of clinicians, addiction counsellors, rehabilitation centers, and researchers to reliably assess SUD severity in accordance with DSM-5 criteria among Urdu-speaking populations. Therefore, the Urdu translation and cross-language validation of the DSM-5 Checklist for Substance Use Disorders was undertaken as a methodological component of the present study to address this gap, support standardized assessment, and strengthen the broader research objectives related to substance use assessment and intervention in Pakistan.

This gap is particularly salient in the Pakistani context, where stigma surrounding substance use often leads individuals to minimize, conceal, or deny symptoms due to fear of social judgment (Krendl & Perry, 2023). Such stigma-related response biases can compromise the accuracy of self-report measures, underscoring the need for culturally and linguistically adapted diagnostic tools. A validated Urdu version of the DSM-5 Checklist for Substance Use Disorders can facilitate clearer item comprehension, reduce misinterpretation, and enhance the reliability of symptom reporting. By providing a standardized, DSM-5–aligned assessment instrument, the present translation and validation effort supports more accurate clinical screening and research assessment of SUD severity among Urdu-speaking populations.

The DSM-5 Checklist for Substance Use Disorders provides a standardized framework for identifying symptom presence and severity; however, its effectiveness depends on culturally and linguistically appropriate adaptation. In Pakistan, linguistic barriers and the lack of validated Urdu assessment tools may compromise accurate screening and diagnosis of substance-related problems (Javed et al., 2025). Establishing a reliable Urdu translation and demonstrating cross-language validity of the DSM-5 Checklist for Substance Use Disorders is therefore essential to ensure conceptual equivalence, improve measurement accuracy, and enhance the consistency of clinical and research-based assessments among Urdu-speaking populations. Accordingly, the present study focuses on the Urdu translation and cross-language validation of this DSM-5–based checklist to support standardized and methodologically sound assessment of substance use disorders in Pakistan.

Methodology

Participants and Procedure

The study employed a cross-sectional design and was conducted in two phases. Phase I involved translating the DSM-5 Checklist for substance use disorders into Urdu, while Phase II focused on establishing the psychometric properties of the translated scale. The translation process adhered to Brislin (1970) guidelines. For both phases, the study included male patients receiving treatment for substance use disorders. Individuals with severe cognitive impairments that could interfere with informed consent or the completion of questionnaires were excluded. All ethical guidelines were followed in this study; informed consent was obtained from all participants, who were assured of their right to withdraw from the study at any time without consequence. A pilot study was conducted in Phase I to assess the reliability of the translated version, involving 30 participants, recruited through purposive sampling. The participants reported no ambiguities or difficulties while completing the checklist. The pilot study yielded a Cronbach's alpha of 0.81, indicating good internal consistency for the translated scale. In

Phase II, the psychometric properties of the Urdu-translated checklist were evaluated using a sample of 300 participants, aged 17 to 56 and recruited from various hospitals offering addiction treatment services. As recommended, a sample of 300 participants is considered acceptable for confirmatory factor analysis (CFA).

Statistical analysis

The dataset was organized and summarized using descriptive statistics, with continuous variables reported as means and standard deviations (SD). Confirmatory factor analysis (CFA) was conducted using the maximum likelihood estimation method to examine the dimensional structure of the DSM-5 Checklist for Substance Use Disorders. Model fit was assessed according to the criteria recommended by Hu and Bentler (1998), wherein acceptable model fit was indicated by a comparative fit index (CFI $\geq$ 0.90), goodness-of-fit index (GFI $\geq$ 0.90), adjusted goodness-of-fit index (AGFI $\geq$ 0.90), normed fit index (NFI $\geq$ 0.90), and a root mean square error of approximation (RMSEA $\leq$ 0.06). Internal consistency reliability was evaluated using Cronbach's alpha, with values of 0.70 or higher considered acceptable, as proposed by Nunnally and Bernstein (1994). All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 22 and AMOS (SPSS) version 21.

Measures

DSM-5 Checklist for Substance Use Disorders

The DSM-5 Checklist for Substance Use Disorders was administered to assess the presence and severity of substance-related problems based on the diagnostic criteria outlined in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*. The checklist consists of 11 items, each representing a core diagnostic criterion of substance use disorders. Responses are typically recorded in a dichotomous format (Yes/No), indicating whether each symptom has been experienced within the specified time frame. Higher total scores reflect greater severity of substance use–related pathology. The DSM-5 Checklist has demonstrated strong internal consistency, with a reported Cronbach's alpha of .83, supporting its reliability for use in both clinical and research settings (Hasin et al., 2013).

Drug Abuse Screening Test

The Drug Abuse Screening Test–10 (DAST-10) was administered to establish the convergent validity of the Urdu version of the DSM-5 Checklist for Substance Use Disorders. The DAST-10 is a brief, standardized screening instrument designed to assess problematic drug use and its associated consequences, excluding alcohol. It consists of 10 dichotomous items (Yes/No), with higher total scores indicating greater severity of drug-related problems. The scale has demonstrated strong psychometric properties, with reported Cronbach's alpha values ranging from .86 to .94 across clinical and community samples (Skinner, 1982; Yudko et al., 2007).

Rosenberg Self-Esteem Scale (RSES)

The Rosenberg Self-Esteem Scale (RSES) was administered to establish the discriminant validity of the Urdu version of the DSM-5 Checklist for Substance Use Disorders. The RSES is a widely used measure of global self-esteem and self-worth, consisting of 10 items rated on a 4-point Likert scale ranging from strongly disagree to strongly agree. Higher scores reflect

higher levels of self-esteem. The scale has demonstrated excellent reliability and validity, with reported Cronbach's alpha values typically exceeding .85 in both clinical and non-clinical populations (Rosenberg, 1965; Schmitt & Allik, 2005).

Phase I: Scale Translation Procedure

The DSM-5 Checklist for Substance Use Disorders was translated into Urdu using the Brislin (1970) guidelines. According to experts in translation studies, translating questionnaires is a complex task that requires careful consideration of both language and cultural context (Javed et al., 2025). All the translators were professionals and doctoral students of psychology who played a role as translators and interpreters and had experience in Urdu translation. They were also formally trained in translation. (Figure 1).

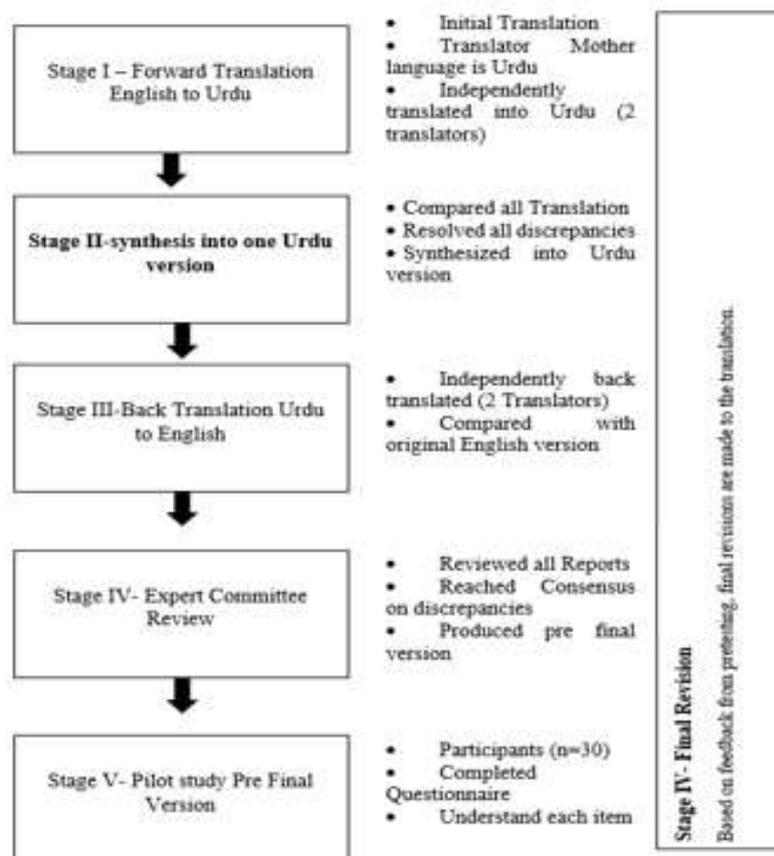**Figure 1:** *Brislin Guidelines for the Translation of DSM-5 Checklist*

Figure 1 showed the translation process, which started with two bilingual experts independently translating the original material into the target language. Then, two different bilingual experts conducted a back-translation into the source language. The back-translated version was compared with the original to identify and resolve discrepancies. A panel of experts then reviewed all versions to ensure linguistic accuracy and cultural relevance. The translated instrument was pretested with a sample from the target population to detect potential issues, and final revisions were made based on the feedback. This iterative procedure ensured conceptual and functional equivalence, thereby enhancing the module's cross-cultural validity.

Step 1. Initial / Forward Translation

The objective of this stage was to produce a local Urdu translation of the DSM-5 checklist that was conceptually equivalent to the original version and understandable to the target population. For the translation of the DSM checklist of SUD, assistance was sought from two bilingual experts who were native speakers of Urdu and met established criteria for professional translation competence. During this phase, the translators were tasked with preserving the meaning, tone, and contextual integrity of the original material while ensuring cultural relevance and clarity for the intended audience. This stage was considered important, as it laid the groundwork for all following procedures. Any inaccuracies or ambiguities in the forward translation were identified and addressed to ensure the production of a high-quality and reliable Urdu version. The final Urdu translation was produced through mutual agreement between the two experts, ensuring that it closely reflected the original English version in both meaning and contextual appropriateness.

Step 2: Backward Translation

The purpose of the backward translation was to verify the conceptual and linguistic equivalence of the Urdu version with the original English DSM-5 checklist. For this stage, the finalized Urdu translation was independently translated back into English by two bilingual experts who were fluent in both languages and had no prior exposure to the original English version. This blinding procedure helped minimize translation bias and ensured objectivity. The back-translated versions were then compared with the original checklist to identify discrepancies, ambiguities, or deviations in meaning. Any inconsistencies were discussed and resolved through consensus, leading to refinements that ensured the Urdu version accurately retained the original content and diagnostic intent of the DSM-5 criteria.

Step 3: Comparison & Revision

This stage involved comparison and revision of the translated Urdu and English versions. The back-translated version was compared with the original, and discrepancies were identified and addressed.

Step 4: Review by Committee

In this stage, an expert committee consisting of bilingual psychologists, psychiatrists, and language specialists reviewed the Urdu translation, the back-translated version, and the original DSM-5 checklist. The committee evaluated semantic, conceptual, and cultural equivalence, ensuring that each item was clear, accurate, and culturally appropriate for the target population. Suggestions for modifications were discussed and incorporated, and consensus was reached on all items. This process ensured that the Urdu version was both linguistically precise and clinically meaningful, ready for pre-testing and psychometric evaluation.

Step 5: Pilot study

A pilot study was done to check the psychometric properties of the Urdu-translated version. 30 participants were briefed about the purpose of this study. Those participants who agreed to take part in the study were given questionnaires to fill out. Participants were requested to report any word or sentence that seemed difficult to them.

Phase II: Establishing Psychometric Properties

To confirm the factor structure and measurement model of the Urdu translated scale DSM-5 Checklist, confirmatory factor analysis (CFA) was undertaken. Measurement hypotheses are tested in confirmatory factor analysis by looking at estimated parameters, fit indices, and modification indices. For assessing the correlation psychological drug abuse screening test and self-esteem scale were used, respectively.

Results

Table 1: *Reliability Analysis of Urdu Version of DSM-5 Checklist*

Variable	k	α
DSM-5 Checklist	11	.93

Note. k= Number of items, α= Cronbach Alpha reliability

The table represented the Cronbach's alpha reliability of the Urdu translated checklist. The value of .93 indicated that the Urdu translated scale demonstrated excellent reliability.

Table 2: *Factor Loading of Urdu Version of DSM-5 Checklist*

Item	Factor Loading
Item1	.71
Item2	.57
Item3	.55
Item4	.60
Item5	.63
Item6	.61
Item7	.69
Item8	.54
Item9	.59
Item10	.52
Item11	.61

Each item's factor loading is shown in Table 2. The items were loaded in a single factor verified that the scale was unifactorial.

Table 3: *Inter-Item Correlation of Urdu Version of DSM-5 Checklist*

Items	1	2	3	4	5	6	7	8	9	10	11
Item1	---	.52***	.41**	.45**	.51**	.51***	.64***	.51***	.43**	.45**	.33**
Item2	---	---	.43**	.65***	.38**	.45**	.44**	.53***	.52***	.43**	.63**
Item3	---	---	---	.56***	.52**	.46**	.58***	.46**	.45**	.53***	.43**
Item4	---	---	---	---	.42***	.30**	.42***	.42**	.42**	.49**	.46**
Item5	---	---	---	---	---	.53***	.52***	.67***	.43**	.65***	.61***
Item6	---	---	---	---	---	---	.55***	.56***	.51***	.52***	.59***
Item7	---	---	---	---	---	---	---	.58***	.60***	.58***	.66***
Item8	---	---	---	---	---	---	---	---	.63***	.54***	.78***
Item9	---	---	---	---	---	---	---	---	---	.73***	.68***
Item10	---	---	---	---	---	---	---	---	---	---	.64***
Item11	---	---	---	---	---	---	---	---	---	---	---

The table showed the inter-item correlation coefficient. Every item had a strong association with every other item, and the item-total correlation varied from 0.413 to 0.785.

Table 4: *Good Fit Model of Confirmatory Factor Analysis of Urdu Version of DSM-5 Checklist*

Models	$x^2(df)$	x^2/df	Goodness of Fit Indices				
			GFI	AGFI	CFI	NFI	RMSEA
Final Model	153.54(40)	3.83	.96	.94	.95	.93	.06

Note. x^2 = Chi-square, *df* = degree of freedom, *GFI* = goodness of fit, *AGFI* = adjusted goodness of fit index, *CFI* = comparative fit index, *NFI* = normed fit index, *RMSEA* = root mean square error of approximation

The model fit indices were shown in Table 4. CFA's initial results showed a poor model fit ($x2(df)$ = 153.54(40), $x2/df$ = 3.83, p =.001, GFI =.81, AGFI =.72, CFI =.85, NFI =.85, RMSEA =.17). As a result, covariance was calculated using modification indices, which showed a very good model index (Fig 2). The fit indices conditions were satisfied because the values of GFI, AGFI, CFI, and NFI were larger than.9. Additionally, the permissible RMSEA value was.06. The values for chi-square and df were 153.54 and 40, respectively. As a result, every value showed that the model fit well.

Figure 2

Good Fit Model of Confirmatory Factor Analysis of Urdu Version of DSM-5 Checklist
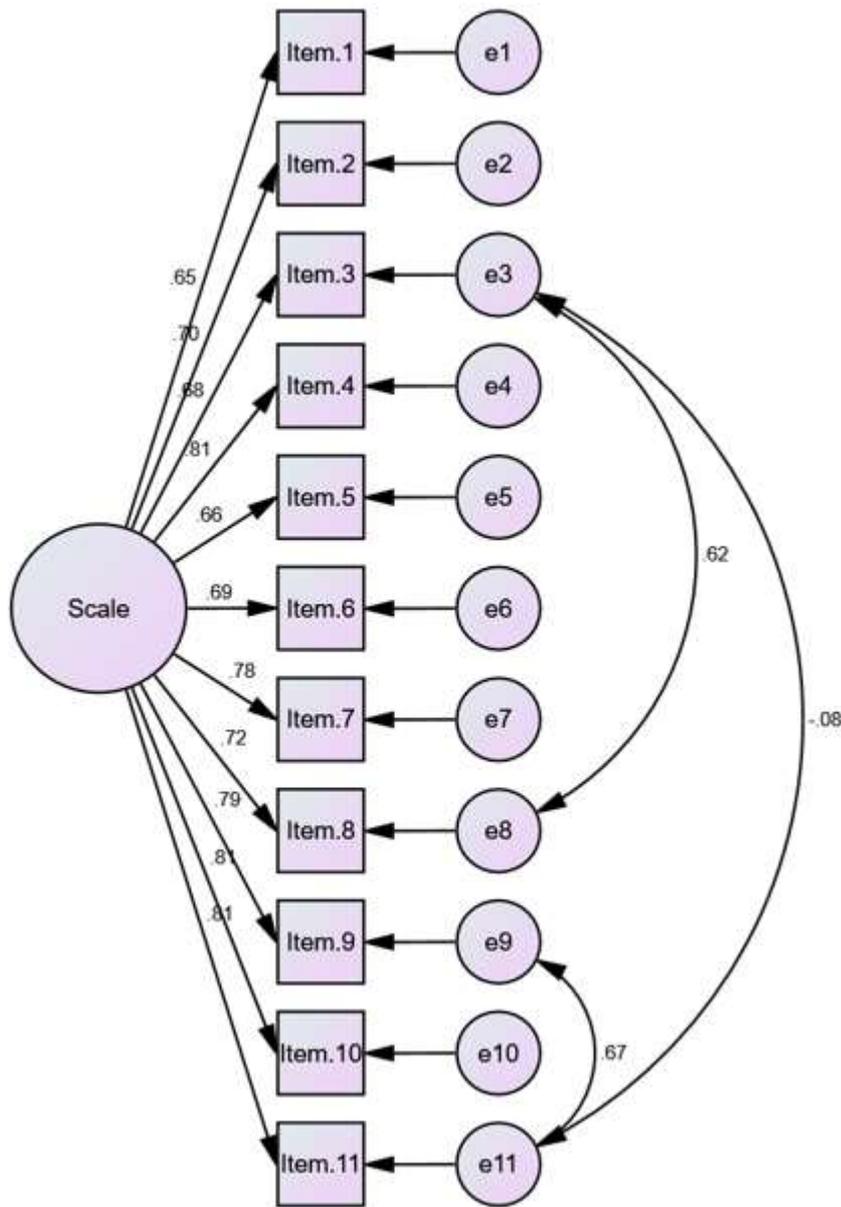
Table 5: *Convergent and Discriminant Validity*

Variable	1	2	3
1. DSM-5 Checklist for Substance Use Disorders	-		
2. Drug Abuse Screening Test (DAST-10)	.72***	-	
3. Rosenberg Self-Esteem Scale (RSES)	-.21*	-.25*	-

***Note.** * p < .05, *** p < .001*

The DSM-5 Checklist for Substance Use Disorders showed a strong positive correlation with the Drug Abuse Screening Test (DAST-10), supporting convergent validity. In contrast, it demonstrated a weak negative correlation with the Rosenberg Self-Esteem Scale, providing evidence for discriminant validity.

Discussion

The primary objective of the present study was to translate the DSM-5 Checklist for Substance Use Disorders (SUD) into the Urdu language and rigorously validate its psychometric properties within a sample of Urdu-speaking individuals. The findings consistently demonstrate that the resulting Urdu version of the checklist is a psychometrically robust and reliable instrument, suitable for use in both clinical and research settings in the region.

The internal consistency of the translated Checklist was assessed using Cronbach's alpha, yielding a value of .93. This indicates excellent reliability (Tavakol & Dennick, 2011), signifying that the items within the Urdu checklist possess a high degree of correlation and consistently measure the intended latent construct (substance use disorder severity) across the sample. This high level of reliability suggests that the rigorous translation and cultural adaptation process was effective in preserving the conceptual integrity of the original scale items. Further investigation into the scale's cohesion through item-level analysis revealed consistently strong inter-item correlations, supporting the homogeneity of the instrument. Specifically, the item-total correlation coefficients, which ranged from 0.413 to 0.785, were all well above the conventionally accepted threshold (i.e., >.30), confirming that every item contributes meaningfully and appropriately to the overall measurement of SUD symptoms (Field, 2024).

A crucial aspect of this validation was the assessment of the scale's underlying structure. The results of the factor analysis unequivocally supported a unifactorial model, indicating that the criteria measured by the checklist load onto a single, unified dimension. This finding is highly significant as it provides empirical support for the theoretical framework underpinning the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5; American Psychiatric Association, 2013). The DSM-5's consolidation of previous categories (abuse and dependence) into a single, dimensional substance use disorder construct is substantiated by the observed unifactorial structure in the Urdu-speaking population.

While the factor analysis supported the theoretical unifactorial structure, the initial Confirmatory Factor Analysis (CFA) results indicated a relatively poor fit to the data. This is a common occurrence in cross-cultural validation studies, often due to subtle inter-item dependencies or cultural nuances in symptom interpretation not captured by a strict independent-error model (Kline, 2016). To achieve an optimal fit, the model was refined by incorporating covariance between the error terms of specific items, guided by statistically sound modification indices. This process led to a significantly improved and very good model fit (Fig 2), with all critical fit indices meeting stringent benchmarks (Hu & Bentler, 1999). Specifically, the values for the Comparative Fit Index (CFI), Non-Normed Fit Index (NFI), Goodness-of-Fit Index (GFI), and Adjusted Goodness-of-Fit Index (AGFI) were all greater than the acceptable threshold. Furthermore, the Root Mean Square Error of Approximation (RMSEA) achieved a permissible value of .06. This successfully refined model confirms that the fundamental unifactorial structure of the DSM-5 SUD Checklist provides an accurate and acceptable representation of the observed symptom data among Urdu speakers.

In addition to structural validation, the construct validity was rigorously established through convergent and discriminant validity testing. Convergent validity was strongly supported by

the finding of a strong positive correlation between the Urdu DSM-5 Checklist and the Drug Abuse Screening Test (DAST-10). This association is expected, as both instruments are designed to measure the severity of drug-related problems and their consequences (Skinner, 1982). The strong correlation confirms that the Urdu checklist truly measures the intended construct of substance use disorder symptoms because its scores align closely with those of an established, independent screening measure. Conversely, discriminant validity was evidenced by a weak negative correlation with the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965). While a negative correlation between SUD severity and self-esteem is clinically plausible, the weak magnitude of this association demonstrates that the Urdu checklist is psychometrically distinct from general mental health or self-perception constructs. This specificity is essential, affirming that the instrument is uniquely suited to measure SUD pathology.

Conclusion

In conclusion, this study has successfully translated and validated the DSM-5 Checklist for Substance Use Disorders into Urdu. The instrument exhibit's excellent reliability, a confirmed unifactorial structure following model refinement, and strong evidence for both convergent and discriminant validity. This validated Urdu instrument is a valuable and necessary resource for advancing the assessment, treatment, and research of substance use disorders in the Urdu-speaking world.

Implications

The validated Urdu DSM-5 Checklist for Substance Use Disorders fills a critical gap in culturally appropriate assessment tools for Urdu-speaking populations. It improves the accuracy of screening and severity assessment, supports treatment monitoring, and enables robust epidemiological and cross-cultural research based on standardized DSM-5 criteria (American Psychiatric Association, 2013).

Conflict of Interest

The authors declare no conflict of interest.

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