

ORIGINAL ARTICLE: TRANSLATION AND VALIDATION OF URDU VERSION OF BRIEF DISSOCIATIVE EXPERIENCE SCALE FOR SUBSTANCE USE DISORDER IN PAKISTAN

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ABSTRACT

OBJECTIVE

Dissociation is a ubiquitous construct in psychology and is of high clinical relevance. The objective of this study was to translate and validate the Brief Dissociative Experience Scale (DES-B) in the Urdu language for individuals with substance use disorder (SUD).

STUDY DESIGN

This was a cross-sectional study.

PLACE AND DURATION OF STUDY

The study was conducted with a sample of 200 individuals with SUD aged 18 and above from drug rehabilitation centres across Pakistan between July to November 2023.

METHOD

This study utilized a rigorous procedure of Mapi guidelines for translation and validation of DES-B. The validation of DES-B was determined through confirmatory factor analysis.

RESULTS

The data was analyzed using SPSS and AMOS software and factor structure, internal consistency, composite reliability, and convergent validity of the scale were determined. Of the 200 participants, 79.0% were male. The mean age of the participants was 30.61 years (SD = 8.87) with a range between 18 to 65. The findings indicated a good model fit for a one-factor structure with 8 items ($\chi^2/df = 2.61$, $p < 0.00$, RMSEA = 0.089, CFI = 0.908, GFI = 0.944). Moreover, the composite reliability (CR = .77), convergent validity (AVE = .31), and internal consistency ($\alpha = .76$) showed favorable results. Overall, the Urdu version of DES-B demonstrated acceptable results in terms of the construct's validity and reliability.

CONCLUSION

The Urdu version of DES-B can be used as a reliable and valid tool to assess dissociative experiences in individuals with SUD suitable for research and clinical settings.

Keywords

Linguistic validation; Dissociation; Substance use disorder; Validity; Reliability; Urdu version.

INTRODUCTION

Dissociation is a widely recognized concept in psychology. It's defined in the Diagnostic and Statistical Manual of Mental Disorders- Version 5 (DSM-5) as "disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior".¹ Dissociation can exhibit a range of symptoms including depersonalization (feeling detached from oneself), derealization (experiencing a perception of being disconnected from the external world), amnesia (memory gaps), and identity confusion accompanied by involuntary and unwanted intrusions.² Dissociation can range from mild to more severe dissociative disorders and cause significant distress and impairment in functioning, which can limit the effectiveness of treatment interventions.³ Dissociation is encountered by individuals with a range of mental health issues including SUD.⁴ However, evidence suggests that the link between substance use and dissociative experiences is complex.⁵ For certain individuals, dissociation can act as a coping mechanism to manage the distressing effects of substance use and for others, it is a response to traumatic experiences that possibly influence the cycle of substance use.⁶ However, some studies did not find any significant association between dissociation and substance use.⁷ This phenomenon may arise because both dissociation and substance use can serve similar functions in regulating emotions when individuals encounter stressful situations.⁸ To comprehend this complex and crucial relationship between dissociation and psychiatric disorders such as SUD, reliable and validated assessment tools suitable for both clinical and research settings are needed.

The Brief Dissociative Experience Scale (DES-B) modified version⁹ is a useful tool for evaluating dissociative experiences in clinical and research settings. It has been modified and shown to have good psychometric properties in diverse populations. Considering the significant diversity in the sociocultural context of the global population, the translation and validation of psychological instruments in local languages when conducting research across different settings is of utmost importance.¹⁰ The DES-B is an important research tool to assess dissociative experiences in individuals with substance use and clarify their relationship to develop better treatment plans. However, this scale is not available in Urdu language. Urdu serves as the primary language for more than 100 million speakers globally.¹¹ Urdu is the lingua franca of Pakistan with the majority of the population possessing at least a basic understanding of it. Translating DES-B in the Urdu language could generate more valid and reliable results and could be of great significance in clinical as well as research settings. Ultimately reducing barriers to study participation, ensuring conceptual equivalence and fidelity to the source language, and enhancing the overall validity of the research. Therefore, this study aims to translate DES-B in Urdu language and to determine the validity and reliability of the translated version of DES-B in Pakistan

METHODS

Design

This was a cross-sectional study carried out using a non-probability convenience sampling technique. The translation and validation of the DES-B were completed following rigorous linguistic validation procedures outlined by Mapi guidelines¹² for translation and validation of DES-B.

Sample

The study was conducted with a sample of 200 individuals both males and females with SUD aged 18 and above from drug rehabilitation centres across Pakistan. The sample size was calculated based on Mayers and colleagues¹³ recommendations for confirmatory factor analysis (CFA) who suggest that a minimum of 200 participants should be included to ensure an adequate sample size for CFA. We included the recommended sample size to ensure it is sufficiently statistically powered to detect factor structures and relationships among variables while ensuring the representativeness of the target population. This sample size was appropriate for CFA considering that much literature suggests a thumb rule of including at least 5 to 10 participants per variable. However, our sample was much larger than this thumb rule and accommodated potential missing data or non-responses to meet the criteria for conducting a robust CFA.

Instrument

The DES-B is specifically designed to provide a more concise and efficient means of measuring dissociative experiences based on the criteria for DSM-5.¹⁴ It consists of 8 items that are likely to assess various aspects of dissociation, such as depersonalization, derealization, and other related experiences. Each item is rated on a Likert rating scale, ranging from 0 (not at all) to 4 (more than once a day). Participants respond to each item by selecting the level of frequency that best describes their experiences. The total scores can range from 0 to 32. Additionally, an average total score can be obtained by dividing the total raw score by the number of items, providing an average rating of dissociative experiences.

Statistical Analysis

The Statistical Package Social Sciences (SPSS) version 26.0 and Amos version 24.0 were used for data analysis. CFA was used to determine the psychometric properties of the translated version of DES-B. Cronbach's alpha (α) was used to estimate instrument reliability.

RESULTS

Translation of the instrument

The translation process followed seven steps outlined by Mapi guidelines.¹² These guidelines are aligned with the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) and maintain standards using patient-reported outcomes (PROs), and clinical outcome assessments (COAs) in research. The Mapi guidelines in line with PROs and COAs ensured that the translated version maintained conceptual equivalence with the source instrument and was readily comprehensible to the target population. Ensuring a high level of expertise, the forward

translation of the instrument was conducted by two proficient and independent bilingual researchers (MA and AK) who possessed a strong command of both the English and Urdu languages and had prior experience in test development and translation. They focused on conceptual equivalence (i.e., capturing the most relevant meanings) rather than a literal word-for-word translation, and easy comprehension (i.e., using simple and daily use Urdu vocab). To enhance clarity, simplicity, and understanding, the translators diligently avoided the use of jargon and double negatives. Consequently, two independent forward translations were obtained. After that, a consensus meeting was convened with the bilingual researchers who did forward translations and a senior bilingual researcher. During this meeting, the two translations were compared and assessed in terms of their conceptual equivalence, comprehensibility, and clarity of speech to enhance readability and ensure consistent meaning. Preference was given to translations that not only captured the essence of the English items but also garnered mutual agreement. The discrepancies were diligently addressed with expert guidance and documented item by item. Emphasis was placed on selecting precise, valid, and reader-friendly wording. The overarching goal was to maintain alignment with the original item's literal meaning while prioritizing clarity and fidelity to the source language.

The reconciled forward translation was back-translated to English to capture any discrepancies from the original versions due to contextual differences. The back-translation was done by an independent bilingual translator (AA) who was a native speaker and had no prior knowledge of the original English version. Throughout this process, special emphasis was placed on preserving simplicity and clarity in the translation to ensure that the translated scale remained accessible and easily comprehensible to the target audience, aligning with the original scale's intent, and meaning while effectively transcending language barriers. The backward translation was finalized in the consensus meeting with expert bilingual researchers (RR) by considering the precise, valid, and contextually relevant meanings behind the items in the original English scale.

Pilot testing

After the translation process, the translated version was pilot-tested on a small sample ($n = 5$) of individuals with SUD to assess their comprehension and understanding of the translated DES-B questionnaire. To ensure clarity, the participants were given clear instructions on how to respond to the questions, including an explanation of the scale options and individual items. They were also encouraged to ask for item repetition if any questions were unclear and to provide feedback on any difficulties they encountered while understanding the items. The researcher actively engaged with the participants, posing questions to gauge their comprehension and delve into the underlying meanings of the questionnaire's content. Both the researcher and the participants had access to copies of the assessment measures to aid in this process. Throughout the testing session, any comments, questions, or concerns raised by the participants were carefully documented. Subsequently, minor revisions suggested by the participants were incorporated into the final version of the translated DES-B.

Socio-demographic characteristics

The sociodemographic characteristics of participants are given in Table 1. The mean age of the participants was 30.61 years ($SD = 8.87$) with a range between 18 to 65, indicating a noteworthy

age diversity within the study population. A total of 79.0% of participants were male and 21.0% were female. The majority of participants completed their secondary school education (51.5%) followed by elementary school education (17.5%), intermediate (15.5%), and bachelor's degree or above (10.5%). The study also included 5% of participants who did not have any formal education. The marital status of participants revealed that 37.5% were single, 59.0% were married, and 3.5% were widowed or divorced. The family system was diverse, encompassing 35.5% in nuclear families and 64.5% in joint familial structures. Regarding employment, 70.5% were employed, 17.5% were unemployed, and 12% identified as students or housewives.

Table 1. *Sociodemographic characteristics of study sample (N = 200)*

Variable	<i>f</i> (%)
Age [M (SD)]	30.61 (8.87)
Gender	
Male	158 (79.0)
Female	41 (21.0)
Education	
No formal education	10 (5.0)
Elementary school	35 (17.5)
Secondary school	103 (51.5)
Intermediate	31 (15.5)
Bachelor's degree or above	21 (10.5)
Marital status	
Single	75 (37.5)
Married	118 (59.0)
Widowed/divorced	7 (3.5)
Family system	
Nuclear	71 (35.5)
Joint	129 (64.5)
Employment status	
Unemployed	35 (17.5)
Employed	141 (70.5)
Student/Housewife	24 (12)

Note: M = Mean; SD = Standard Deviation; *f* = Frequency; % = Percentage

Confirmatory Factor Analysis (CFA)

In the analysis of the DES-B model with 1 factor and 8 items, the initial assessment indicated a good fit. While the Chi-square statistic is commonly used to evaluate fit, it has limitations, including sensitivity to sample size and data distribution. Therefore, researchers often rely on various relative fit indices to assess model fitness. In this study, we assessed model fit using the Chi-square/degree of freedom (χ^2/df), Goodness-of-Fit indices (GFI), Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI). The criteria for acceptable fit were set as follows: χ^2/df between 1-3, RMSEA < 0.08, and GFI and CFI \geq 0.90.¹⁵ All items displayed significant correlations with $p < 0.00$. The overall model fit was deemed acceptable with the following statistics: χ^2 (20) = 52.26, $p < 0.00$, RMSEA = 0.089, CFI = 0.908, GFI = 0.944 (see Table 2).

Table 2. *Goodness-of-Fit Indices for Tested Model*

<i>Model</i>	χ^2	<i>df</i>	<i>p</i>	χ^2/df	<i>GFI</i>	<i>CFI</i>	<i>RMSEA</i>
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M1 8 items	52.269	20	<.001	2.613	.944	.908	.089
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Note: χ^2 /df: relative chi-square. GFI, Goodness of fit index; CFI, Comparative fit index; RMSEA, root mean square error of approximation.

The factor loadings for DES-B ranged from 0.37 to 0.88, as illustrated in Figure 1. Factor loadings exceeding 0.5 are generally considered acceptable. However, factor loadings greater than 0.30 are also considered fit for certain populations and indicate meaningful association of items with intended constructs.¹⁶ Items 3, 4, and 6 displayed factor loadings below 0.5. Item 4's factor loading, while slightly below 0.5 was considered acceptable. In the case of items 3 and 6, which had a factor loading of .37 and .36 respectively, we decided against dropping out the items for two reasons; 1) eliminating the item did not improve model fit, nor did it significantly affect the reliability of scale, and 2) based on expert opinion and considering its practical implications, the item was deemed theoretically meaningful and aligned with the construct. Furthermore, these were contributing more than 35% to the overall scale.

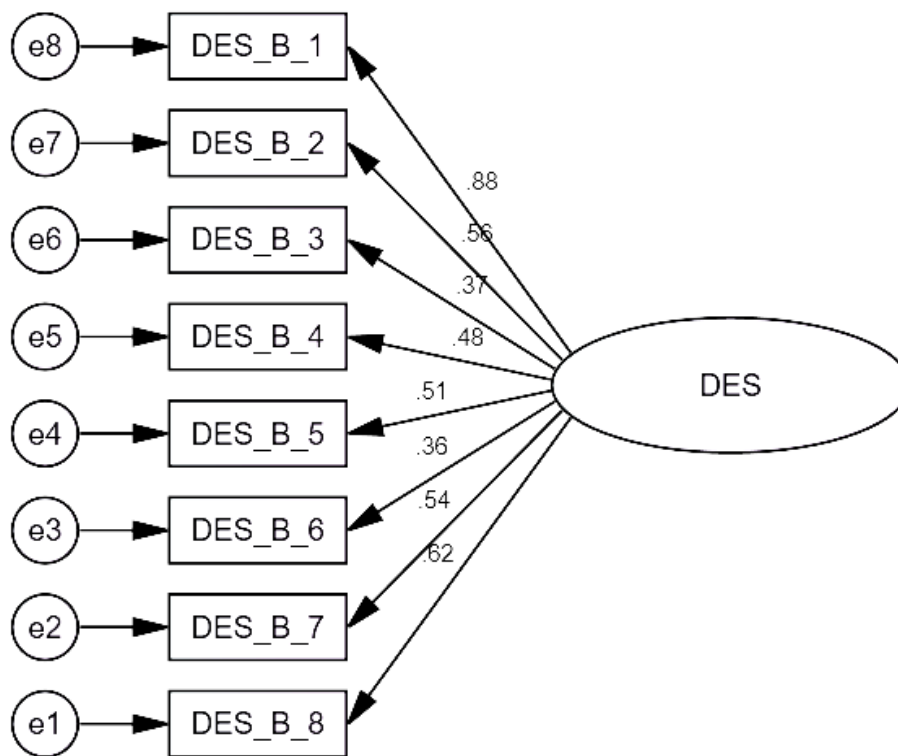


Figure 1: Factor loadings of the hypothesized model of DES-B

Reliability and Validity Analysis

A range of standard indicators are commonly employed to assess the validity and reliability of constructs. Average Variance Extracted (AVE) gauges convergent validity by measuring the

proportion of variance explained by the construct in relation to measurement error.¹⁷ Additionally, Composite Reliability (CR) serves as a metric for assessing a construct's internal consistency and reliability,¹⁸ while Cronbach's alpha (α) is a widely recognized coefficient used to evaluate the internal consistency of a scale.¹⁹ This study also computed Cronbach's alpha (α) coefficient, CR, and AVE to evaluate the reliability and convergent validity of the translated DES-B scale (see Table 3). The acceptance criteria were established as follows: Cronbach's alpha > 0.7, CR > 0.5, AVE > 0.7, and CR > AVE as guided by previous studies.²⁰

Table 3. *Confirmatory factor analysis of DES-B for individuals with SUD*

	<i>CR</i>	<i>AVE</i>	<i>MaxR(H)</i>	λ
	.77	.31	.85	
Item 1				.88
Item 2				.56
Item 3				.37
Item 4				.48
Item 5				.51
Item 6				.36
Item 7				.54
Item 8				.62

Note: λ (lambda) = standardized factor loading $\geq .5$, *CR* = Composite Reliability, *AVE* = Average Variance Extracted, *MaxR(H)* = Maximum Reliability

The obtained results indicated AVE and CR values of .31 and .77, respectively. Although the AVE value was below the established criteria (i.e., < 0.7), we deemed it acceptable based on the prevailing recommendation that if AVE is below 0.5 but CR exceeds 0.6, the convergent validity of the construct is considered satisfactory.¹⁸ Furthermore, the overall internal consistency reliability was found to be good ($\alpha = .763$). The inter-item correlation for each item, with Cronbach's alpha coefficients, if items removed are provided in Table 4.

Table 4. *Item and Reliability analysis for the Urdu version of the DES scale*

	<i>M</i>	<i>SD</i>	r_{it}	α if item deleted
Item 1	1.33	1.19	.731	.685
Item 2	1.36	1.24	.428	.743
Item 3	1.35	1.21	.310	.764
Item 4	1.19	1.22	.451	.739
Item 5	1.27	1.20	.456	.738
Item 6	1.59	1.14	.321	.761
Item 7	1.32	1.18	.515	.729
Item 8	1.36	0.99	.514	.730
Reliability of DES scale $\alpha = .763$				

Note: *M* = Mean; *SD* = Standard Deviation; α = Cronbach alpha

Proof-reading

The translated version of DES-B went through a final proofread for typing or grammatical errors and was finalized.

DISCUSSION

Dissociation, characterized by disruptions in consciousness, memory, and identity, is a complex phenomenon associated with various psychological conditions including trauma-related disorders

and certain SUDs.²¹⁻²⁴ Assessing dissociation is essential in both clinical and research settings, as it can significantly impact an individual's mental health and well-being. The aim of this study was to translate and examine the psychometric properties of the Urdu version of DES-B.¹⁴ To our knowledge, this scale has not been previously translated and validated into Urdu in Pakistan.

Nevertheless, the translation of research instruments is a crucial step in cross-cultural studies to ensure the equivalence of the measurements across different linguistic and cultural contexts.^{10,11} This study followed established Mapi guidelines, to ensure the translation and validation process of DES-B in seven rigorous steps. This approach involved the expertise of proficient bilingual researchers who emphasized conceptual equivalence and easy comprehension rather than literal word-for-word translation. The consensus meetings and back-translation processes further enhanced the clarity, fidelity, and comprehensibility of the translated instrument, ultimately bridging language barriers and maintaining alignment with the original scale's intent and meaning. This thorough translation process contributes to the instrument's suitability for capturing meaningful data from the target population, strengthening the overall validity and reliability of study findings.

On the other hand, the study contributes valuable insights into the measurement and validation of the DES-B scale, shedding light on its psychometric properties, structural validity, and reliability in the context of our research. The CFA²⁵ conducted on the DES-B scale revealed that the one-factor model with eight items displayed a good fit to the data. This underscores the scale's appropriateness for measuring the intended construct within our study population. While the chi-square statistic was initially considered, it is known to be sensitive to sample size and data distribution. Therefore, we employed a battery of relative fit indices, such as χ^2/df , RMSEA, CFI, and GFI, to provide a comprehensive evaluation of model fit. The model met predetermined criteria for acceptable fit, consistent with previous research,¹⁵ indicating that the scale accurately captures the underlying construct.

An important aspect of the CFA was the examination of factor loadings. Various studies suggest the population under study.¹⁶ In our case, items 3, 4, and 6 exhibited factor loadings below 0.5 but were retained for theoretical and practical reasons. Their elimination did not significantly enhance model fit, and they contributed substantially to the overall scale. This highlights the importance of a balanced approach in psychometric evaluation, considering both statistical metrics and theoretical significance. However, the retention of items based on expert opinion should be viewed with caution, as the perspectives of the experts may not fully represent the broader population's viewpoints. The AVE, CR, and Cronbach's alpha computed to measure reliability and construct validity²⁰ also yield acceptable results and offer a unique insight perspective on the acceptability of AVE and CR values¹⁸ in terms of scale performance.

The findings of this study hold significance for both researchers and practitioners. They provide confidence in the reliability and validity of the DES-B scale in the specific context of Pakistan, to assess and address issues related to the dissociation in their respective settings, potentially leading to improved interventions and outcomes. Researchers can leverage this validated scale for future investigations in related domains, fostering a more nuanced understanding of the phenomenon under study.

The study has some limitations and emphasizes careful interpretation of results and the need for future research to confirm these findings. The study data was obtained through a cross-sectional approach, which limits the test-retest reliability and predictive validity of the DES-B Urdu version. To address this limitation, future research should incorporate longitudinal data, to explore data at different time points. Additionally, while the study employed multiple indicators to translate and validate DES-B, measurement errors can still impact the accuracy of the findings. Future studies might use different study methods to minimize measurement error and can plan cross-validation in different samples to ascertain how well the scale predicts relevant outcomes.

The study, however, through its rigorous process not only guaranteed the linguistic precision of the DES-B but also ensured its cultural sensitivity and comprehensibility to individuals with substance use disorder. The study conducted a thorough process to translate and validate the psychometric properties of the DES-B scale, employing various statistical techniques and indices to assess its validity and reliability and enhance the robustness of the findings. The study included participants with diverse sociodemographic profiles with a sufficient sample size recommended for CFA, therefore the scale and the study findings can be generalized to a broader population.

CONCLUSION

This study contributes to the understanding of measurement validation by highlighting the need to consider both statistical rigor and theoretical relevance. Being translated and validated in Urdu, DES-B has the potential to be utilized in other parts of the world as Urdu is the 10th most widely spoken language with more than 100 million speakers globally. The findings support the suitability of the DES-B scale for assessing dissociation and offer insights into its psychometric properties. While the study provides a robust foundation for the scale's application, future research may explore its performance in diverse populations and settings to further establish its generalizability. Additionally, exploring the construct's predictive validity and its association with other relevant variables can enhance our comprehension of its real-world implications.

Conflict of Interest

The authors declared no conflict of interest.

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Author Contributions

All authors (MA and RR) contributed to the study's concept and design. RR provided supervision throughout the study. MA completed data collection, interpretation, and manuscript drafting. RR contributed to refining the manuscript through rigorous review and editing. All authors reviewed and approved the final manuscript.

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AUTHOR(S) CONTRIBUTION

Undertaking Form

Sr. #	Author(s) Name	Author(s) Affiliation	Contribution	Signature
1.	Muqaddas Asif	Institute of Applied Psychology, University of the Punjab, Lahore, Punjab	MA contributed to the study's concept and design. MA completed data collection, interpretation, and manuscript drafting. MA reviewed and approved the final manuscript.	
2.	Rafia Rafique	Institute of Applied Psychology, University of the Punjab, Lahore, Punjab	RR contributed to the study's concept and design, provided supervision throughout the study, and contributed to refining the manuscript through critical review and editing. RR reviewed and approved the final manuscript.	