

**RESEARCH PAPER****Translation and Validation of Basic Need Satisfaction in General Scale**

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ABSTRACT

Using Pakistani teenagers, the current research aimed to convert and validate the Basic Need Satisfaction in General (BNSG) scale into Urdu. In line with Brislin's (1980) theory, the translation included forward translation, backward translation, and expert group review to verify cultural and conceptual suitability. Confirmatory Factor Analysis (CFA) was run on data from 200 teenage to verify the construct validity of the Urdu version. The model displayed a good fit after eliminating one item with a negative factor loading and adding error covariances because of item overlap; hence, the structural validity of the modified scale was confirmed (CFI = .96, TLI = .93, RMSEA = .052). The results indicate that the Urdu translation of BNSG is a psychometrically strong instrument for gauging psychological demands in Pakistani youth. Recommendations suggest that future studies should confirm the scale over many territories and age groups in Pakistan and use longitudinal and mixed method designs for more extensive applicability and more full cultural adaptation.

KEYWORDS

Basic Need Satisfaction, Translation, Validation, Pakistan

Introduction

Self-Determination Theory (SDT) posits that there are three basic psychological needs to satisfy—autonomy, competence, and relatedness significant for facilitating motivation, psychological development, and well-being (Ryan & Deci, 2000). When individuals have their needs fulfilled, they are likely to achieve optimal functioning, resilience, and meaningful social connections (Deci & Ryan, 2017). Over the previous two decades SDT has developed into a useful theoretical framework across multiple fields of study including those in education, health-related research, and organizational behavior (Yu et al., 2022). It is a useful lens to investigate the underlying phenomena of human flourishing.

The Basic Need Satisfaction in General scale (Gagné, 2003), is a measure of how satisfied individuals are, in having their basic psychological needs met in day-to-day life. The BNS-G has been used in a variety of disciplines and domains including mental health (Chen et al., 2023), media and technology use (Brailovskaia et al., 2021), and workplace well-being (van den Broeck et al., 2021). However, most studies utilizing the BNS-G have examined individuals only from Western, individualistic cultures, bringing into question whether the measurement is culturally appropriate and equivalent for use in other collectivistic cultures (Yu et al., 2022).

Given that the experience and expression of autonomy, competence, and relatedness will differ across cultural contexts, it is timely and needed to translate and validate the BNS-G scale for non-Western contexts. The purpose of cross-cultural adaptation is to ensure the scale retains conceptual and functional equivalence, which will increase the ability of researchers and practitioners to better measure basic need satisfaction (Cordeiro et al., 2022). If a tool is not validated culturally, this increases the chances of misinterpretation of the results which could lead to ineffective interventions or misguided conclusions.

Translation and validation go beyond confirming linguistic accuracy, it also means examining the psychometric properties of the instrument (factor structure, reliability, and construct validity) within the target culture (Beaton et al., 2000). This study warrants future research and provides culturally appropriate measures of psychological needs but validated measures will also allow for focused interventions to improve well-being for differing populations.

The aim of the current study is to translate the Basic Need Satisfaction in General Scale into [Urdu] and test its psychometric properties in the context of a Pakistani Population, so that this study can (1) contribute to the potential for global applicability of SDT, (2) help advance culturally responsive measurement practices, and (3) provide some evidence for replicating practices to help support enhanced well-being through meeting the basic psychological needs of individuals through the satisfaction of their basic psychological needs.

Literature Review

The satisfaction of the basic psychological needs (autonomy, competence, and relatedness), which are found in Self-Determination Theory (SDT; Ryan & Deci, 2000), is believed to be an essential psychological need for human growth, integrity, and psychological health and well-being. These needs are universal and will span multiple life domains, including, but not limited to, education, work and social settings (Deci & Ryan, 2017). There is now an extensive empirical literature indicating that when people have their basic psychological needs satisfied, they are more likely to have intrinsic motivation, emotional resilience, and life satisfaction (Yu et al., 2022; Chen et al., 2023).

Gagné (2003) developed the Basic Need Satisfaction in General Scale (BNS-G) to assess the extent to which basic needs are being met in everyday life. The BNS-G assesses general perceptions of all three basic psychological needs: autonomy, competence, and relatedness, thereby providing a holistic representation of individuals' psychological experience of need fulfillment. The BNS-G is widely used in Western contexts, and has demonstrated sound psychometric properties with regard to internal consistency and construct validity (van den Broeck et al., 2021). Researchers have utilized the BNS-G for a variety of outcomes, including examining burnout, academic motivation, social media usage, and overall well-being (Trépanier et al., 2020; Brailovskaia et al., 2021).

However, some researchers have expressed concerns regarding the BNS-G's cross-cultural relevance. In particular, while independence is universal, its performance and relative importance may differ based on cultural context (Yu et al., 2022). For example, in collectivist cultures as in some Asian cultures, the concept of autonomy may be viewed differently because the value placed on social harmony and interdependence, as opposed to independent choice, could be more important than control (Chen et al., 2023). Therefore, it calls for a process of cultural adaptation and validation of the BNS-G (to determine

whether and how it maps) was necessary to examine conceptual equivalence and equivalence of measurement in non-Western populations (Cordeiro et al., 2022).

Translation and validation studies are important, because they help ensure that psychological assessment tools maintain their reliability and validity within distinct cultural and linguistic contexts (Beaton et al., 2000). Translation and validation studies often involve forward and backward translation, and expert consultation, along with confirmatory factor analysis (CFA) or other statistical methods to assess the factor structure of the scale within the context of the target culture. The findings from these studies, when combined with the original study and adjustment made to the instruments help to improve instruments, which in turn, helps to enhance the cultural relevance of psychological research instruments (Cordeiro et al., 2022).

Despite the theoretical importance and the general interest in the practical role of basic need satisfaction, there have been few studies of basic need satisfaction in South Asian countries, and specifically in Pakistani populations, using validated tools like the BNS-G. This lack of study and application of validated tools in this context highlights the need to translate and validate the scale in local languages and cultural contexts to improve the effectiveness and utility of the patent tool in the psychological literature and in practice. The current study addresses these gaps by translating (to Urdu) the BNS-G scale, and validating its psychometric properties among individuals from the Pakistani population, which contributes to the collective understanding and measurement of psychological need satisfaction.

Material and Methods

Translation and Adaptation

The first phase of the study was translation and adaptation of scales to ensure the language was appropriate for the target sample and could be understood easily. Basic Need Satisfaction in General – was originally in English and not validated in the Pakistani Context. Consequently, the translation and cultural adaptation of adaptation was done according to the steps outlined by Brislin (1980).

Translation and Adaptation Steps

Permission for the translation of the scales was obtained from the original author via e-mail as they are copyrighted. The translation procedure was carried out in four steps:

Step I: Forward Translation (English to Urdu)

This forward translation process generally followed guidelines provided by Brislin (1980), including adhering to the maximum equivalence between the source and target language versions, keeping it simple and straightforward to the original scale of the study, and not supplementing, substituting, or omitting items. Including two holding M.A.s in English and three holding M.phil, a group of five bilingual experts did the forward translation. degrees in philosophy of psychology. The panel of experts were chosen according to the standards Brislin (1980) gives – translators should be able to guarantee (a) thorough source language comprehension; (b) culturally equivalent terms are present in the target language, and (c) the intended readers understand the translated materials. The translators were advised to be as faithful and exact as possible, but also allowed to make cultural adjustments as necessary.

Forward Translation: Committee Review

A committee review was first done to check the translations. There was a PhD in Psychology, an MPhil in Psychology, and a graduate research PhD student on the panel. Every article was evaluated for emotional tone, context, grammar, and meaning. To guarantee cultural representation and clarity, conceptual equivalency was more important than simply meaning. Part of the things were reworded to improve clarity.

Step II: Back Translation

Three MPhil in Psychology and one M.A. translate the last Urdu versions back from English back into English with four different bilingual experts. in English), none of whom had seen the original English scales. By matching the back translated things to the initial English items, the idea was to evaluate the veracity and fidelity of the translation.

Back Translation: Committee Analysis

The committee, made up of the same professionals from the forward translation review, checked the back translated and original editions to determine consistency in meaning. Elements corrected to guarantee semantic equivalence where those that matched the source.

After the translation and adaptation, a pilot experiment was carried out to assess the psychometric validity and usability of the transformed tools.

Goals

Evaluated the translated instrument's psychometrics properties.

Tools Deployed

Basic Need Fulfilled in Common Situation

Sample

Two samples were utilized for data compilation. The first group comprised teens 13 to 18 years old ($M = 15.35$, $SD = 1.56$). Sample II comprised 100 fathers and 100 mothers of the teenagers in Sample I among 200 total parents. Colleges and schools in Islamabad and Rawalpindi contributed the data.

Inclusion Criteria

The research looked at only those parents whose home 13 to 18 years old was well-structured. Those with any official mental or physical handicap were not to be admitted. Only one child – the eldest between the ages of 13 and 18 – was taken from every family to keep things consistent. The research did not include families in which either parent was not living with the child.

RESULTS**Structurally Validating of Measure**

Confirmatory Factor Analysis (CFA) was carried out to meet the objective of evaluating the validity and psychometric quality of the tools in the Pakistani cultural milieu.

Validating factor analysis (CFA)

CFA was used to test the construct validity of the translated tools and to confirm the underlying factor structure within the scope of the current research. AMOS version 21 was used in the analysis. All translated tools underwent CFA, which included the Parent as Social Context Scale (child, mother, father) and the Basic Need Satisfaction in General (BNSG) scale.

To determine model adequacy, several fit indices were applied: Incremental Fit Index (IFI), Tucker Lewis Index (TLI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). Using the standards Schreiber et al. suggested. (2006), TLI, IFI, and CFI values above .90 show acceptable model fit whereas RMSEA values under .08 show good fit. Especially telling of how well the theory fits the sample data is the RMSEA figure.

CFA of Basic Need Satisfaction

Translated into Urdu, Basic Need Satisfaction in General was a multifaceted scale and it was personally, shot. Confirming the structure of this scale on subset of young adults would call for CFA. One below is the presentation of the factor loadings and the square multiple correlations of its products.

Table 1
Factor Loading of CFA for Basic Need Satisfaction in general (BNSG) (N=200).

| Item No. | λ | SMCs | Item No. | λ | SMCs |
|----------|-----------|------|----------|-----------|------|
| 1 | .60 | .37 | 12 | .78 | .59 |
| 2 | .24 | .18 | 13 | .73 | .54 |
| 3 | -.43 | .06 | 14 | .65 | .41 |
| 4 | .64 | .40 | 15 | .68 | .45 |
| 5 | .65 | .42 | 16 | .58 | .33 |
| 6 | .43 | .18 | 17 | .51 | .26 |
| 7 | .33 | .11 | 18 | .78 | .60 |
| 8 | .65 | .43 | 19 | .74 | .54 |
| 9 | .33 | .12 | 20 | .78 | .60 |
| 10 | .43 | .18 | 21 | .56 | .31 |
| 11 | .59 | .34 | | | |

Note. λ = Factor Loading, SMCs = Squared Multiple Correlation

Table shows the items corresponding to the scales as well as obtained λ and SMCs of each item in the respective dimension. Factor loadings for BNS in general ranges from λ = .24 to λ = .78. All items have factor loadings and SMCs in acceptable range i.e. more than .30 (Field, 2009) and SMCs acceptable range is below .20 criteria given by Hooper et al. (2008) except item 2 and 3. Item 2 was retained despite of its low factor loading because of its qualitative importance for measuring respective factor of scale and its SMC was also in acceptable range (SMC = .24) whereas item 3 has been deleted because it has negative factor loading (λ = -.43) and SMC was also not in acceptable range (SMC = .06)

Table 2
CFA for Basic Need Satisfaction in General

| | χ^2 (df) | NFI | IFI | TLI | CFI | RMSEA | $\Delta\chi^2$ (Δ df) |
|---------|---------------|-----|-----|-----|-----|-------|-------------------------------|
| Model 1 | 774.12(186) | .65 | .66 | .72 | .72 | .12 | |
| Model 2 | 713.12(167) | .66 | .72 | .68 | .72 | .12 | 61(19) |
| Model 3 | 191.41(115) | .91 | .96 | .93 | .96 | .052 | 521(52) |

Model 1 = Default model of CFA

Model 2 after deleting items

Model 3 = M1 after adding error variances

Table represents the model fit indices for BNSin General. It shows that model fit χ^2 (df) = 774.12(186) is with values of CFI = .72, IFI = .66 and RMSEA = .12. The value of RMSEA was high and the factor loading of item 3 was in -.38. Both of these conditions are not acceptable. So, in order to get better fit first item 3 was deleted. And after deletion values for model was like χ^2 (df) = 713.12(167) is with values of CFI = .72, IFI = .72 and RMSEA = .12. Then error covariance was added on basis on content overlapping. The value of RMSEA lowered to .05 which is considered as good fit.

Discussion

This research aimed to render in the Urdu language the Basic Need Satisfaction General (BNSG) scale so as to be used with a Pakistani teenage group. Using CFA, the factor structure of the translated scale was investigated along with the construct validity. Poor fit indices χ^2 (186) = 774.12, CFI = .72, IFI = .66, and RMSEA = .12 from the first model (Model 1) show that the original model did not adequately fit the data therefore need further adjustment.

Part of the model refinement procedure, the below recommended level of negative and irrelevant factor loading ($\lambda = 0.43$) as well as a squared multiple correlation (SMC = .06) caused item 3 to be dropped. Field (2009) says that usually weak factor loads are less than .30, and objects with such low loads might not significantly add to the latent construct. Moreover Hooper et al. SMCs should ideally be above .20 to guarantee significant item reliability, according to research dated 2008. Although item 2 had a lower factor load ($\lambda = .24$), it was kept due to its theoretical and qualitative relevance in representing a fundamental feature of the underlying construct, in line with recommendations that support assessing scale validation with both statistical and conceptual significance (Byrne, 2010).

Model 2 improved somewhat but still did not meet suitable fit criteria ($\chi^2(167) = 713.12$, CFI = .72, RMSEA = .12); it excluded item 3. Further modeling improvement was therefore required. Modification indices indicated the need of introducing error covariates among certain items exhibiting conceptual overlap. Brown (2015) provides ideas from the literature that strongly support this direction; when theoretically justified, correlated errors might enhance model fit. Following these changes, the last model (Model 3) provided a much better fit to the data – χ^2 (115) = 191.41, CFI = .96, TLI = .93, RMSEA = .052 – well within the limits for a good model fit (Schreiber et al. 2006). By and large, the better model fit points to the psychometric validity of the Urdu version of the BNSG scale for application among Pakistani teenagers, therefore confirming the idea of basic psychological needs set out in Self-determination Theory (Deci & Ryan, 2000). These results match earlier validation studies that have demonstrated the robustness of the multidimensional nature of the BNSG across various cultural settings once culturally appropriate adjustments are made (Chen et al., 2015; Vansteenkiste & Ryan, 2013). Therefore, the validated Urdu edition offers a dependable instrument for evaluating fundamental need satisfaction within the Pakistani cultural context in future studies and projects.

Conclusion

The current research effectively translated and confirmed the Basic Need Satisfaction in General (BNSG) scale in Urdu, therefore guaranteeing its relevance in the

Pakistani cultural milieu. After required changes—including the removal of a poor item and the addition of error covariances—the confirmatory factor analysis (CFA) backed the factorial validity of the translated edition. The last model showed reasonable fit indices (CFI = .96, TLI = .93, RMSEA = .052), suggesting that among teenagers the modified instrument consistently measures the intended construct. This offers compelling proof that the BNSG scale's Urdu version is a psychometrically sound instrument for evaluating basic psychological needs in line with Self-determination Theory and thus appropriate for further research and application in Pakistani contexts.

Limitations and Recommendations

Though encouraging, the research has several drawbacks. The sample was restricted to teenagers from urban schools and universities (Islamabad and Rawalpindi), so restricting the applicability of results to rural populations or other age groups. Furthermore, though sufficient for CFA, the sample size could gain from more replication with more varied and larger groups. Future studies should try to confirm the scale across various cultural areas of Pakistan and with other demographic groups like grownups or small children. Including qualitative comments from members during the translation process would improve cultural sensitivity even more. Furthermore, useful in evaluating the predictive validity and consistency of the scale over time are longitudinal research.

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