Original Article

Translation and Adaptation into Hindi of Central Religiosity Scale, Brief Religious Coping Scale (Brief RCOPE), and Duke University Religion Index (DUREL)

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ABSTRACT

Background: Religion/religiosity plays an important role in the lives of most Indians. However, there are lack of validated instruments in regional languages to assess the various dimensions of religiosity in the Indian population. This limits evaluation of religion/religiosity and comparison of Indian data with western research for health-related issues. Methods: The CRS, BRCOPE, and DUREL scales were translated into Hindi by using the standard translation-back-translation methodology as specified by the World Health Organization. Initially, the Hindi version of each scale was completed by 132 participants, and the second time, participants completed either the Hindi or the English version of the scales after 3–7 days. Data were evaluated for cross-language equivalence, test–retest reliability, internal consistency, and split half reliability. Results: The Hindi version of CRS, DUREL, and RCOPE had good cross-language equivalence with the English version for all the items and dimensions in all three scales, which was highly significant ($P < 0.001$). The test–retest reliability was also high for all three scales (Cohen's Kappa value $>0.67$ for various items and subscales $P < 0.001$). Cronbach's alpha for the Hindi version of the scales was 0.95, 0.76, and 0.89 for CRS, DUREL, and BRCOPE, respectively. The Spearman–Brown coefficient was 0.89, 0.70, and 0.43 for CRS, DUREL, and BRCOPE, respectively. Conclusion: The Hindi version of CRS, DUREL, and BRCOPE has good cross-language equivalence, internal consistency, split-half reliability, and test–retest reliability. It is expected that availability of these validated versions will provide impetus to research evaluating the association of clinical parameters and religiosity.

Key words: Adaptation, coping, religion, religiosity, translation

Key messages: This study provide information about validity of Hindi versions of Centrality of Religiosity Scale (CRS), Brief Religious Coping Scale (Brief RCOPE), and Duke University Religion Index (DUREL) and shows that Hindi versions of these scales have good test-retest reliability, internal consistency, and split half reliability.

Access this article online

Website:
www.ipem.info

DOI:
10.4103/IJPSYM.IJPSYM_304_18

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How to cite this article: Grover S, Dua D. Translation and adaptation into hindi of central religiosity scale, Brief Religious Coping Scale (Brief RCOPE), and Duke University Religion Index (DUREL). Indian J Psychiatr Med 2019;41:556-61.

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Received: 21st July, 2018, Accepted: 01st January, 2019
Religion has been defined as “an organized system of beliefs, practices, rituals, and symbols designed to facilitate closeness to the sacred or transcendent”. Religion/religiosity is part and parcel of the daily lives of most Indians. Besides affecting other dimensions of life, religion and religiosity affect various aspects of treatment seeking.[2,3] Various studies which have evaluated the etiological models held by the patients and their caregivers show that many patients with mental illness believe that the illness is caused by black magic or their karma or deeds.[4,5] Similarly, studies from India which have evaluated the pathways to care of patients with various mental disorders suggest that many patients seek help from religious places.[6] It has been seen that in many cases, it forms the first place of contact.[7] Data also suggests that religion/religiosity also affects the manifestation of psychopathology,[7,8] suicidal behaviors,[9] coping of patients, and caregivers,[10] attitude toward psychotropics and other psychiatric treatment modalities,[7] medication compliance,[7] caregiver burden,[11] and quality of life of patients.[10] In a nutshell, it can be said that religion influences various aspects to treatment seeking. Unfortunately, although studies have reported these associations, these studies are often criticized for not evaluating the various dimensions of religion/religiosity, or evaluating these domains only by the use of indigenous instruments which are not comparable with the standard instruments for assessment various aspects of religiosity.

Accordingly, there is a need to evaluate the role of various aspects of religion by using standardised instruments. Further, there is a need to evaluate the similarities and differences in the role of religiosity across different countries so that specific interventions can be planned, taking into consideration the role of religion in the manifestation, help-seeking, compliance to medication and treatment, etc. For cross-national comparisons, there is a need to have instruments which are available in multiple languages and validated across different countries. At present, there are very few such instruments.

Some of these scales include Centrality of Religiosity Scale (CRS), Brief Religious Coping Scale (Brief RCOPE), and Duke University Religion Index (DUREL). CRS is considered a measure of the centrality or importance of religious meaning in a person’s life.[12] This scale was used in the global Religion Monitor with samples recruited from 21 countries. Further, this scale has been widely used in multiple studies in sociology and psychology. DUREL is a brief instrument to assess major dimensions of religiosity. It has been widely used across the world and is available in ten languages.[13] Exposure to any stressful situation is associated with the use of coping mechanisms of various types. Brief RCOPE is a measure of religious coping, which has been used in many studies, and use of this scale has enhanced the knowledge with respect to the role of religion in handling crisis and trauma.[14] However, these scales have not been validated in the Indian context and adapted to Indian scenarios. Validating these scales in the Indian context can facilitate the generation of data from India, which can be compared with findings on the same scales from across the globe and can enhance the understanding about the role of religiosity in health care, especially mental health. These can also enhance the cross-cultural understanding about the role of religiosity in the manifestation and management of various mental disorders.

In this background, the aim of this study was to translate, adapt and validate the CRS, DUREL, and Brief RCOPE.

**METHODS**

This study was approved by the Ethics Committee of the institute. All the participants were recruited after obtaining written informed consent. The study participants included healthy subjects, who completed the different versions of the scales on two occasions at the gap of 3–7 days.

**The scales which were translated**

Centrality of Religiosity Scale[12]: CRS was designed by Huber and Huber.[12] It is considered as a measure of the centrality, importance or salience of religious meanings in personality. It measures the five theoretically defined core dimensions of religiosity, i.e., public practice, private practice, religious experience, ideology, and intellectual dimensions, which can together be considered as representative of the sum total of religious life. This scale has been used in more than 100 studies in the field of sociology and psychology of religion, and in studies involving assessment of religious issues in over 25 countries, involving participants in excess of 1,00,000. The single largest application of this scale includes its use in the global Religion Monitor with representative samples from 21 countries, including India.

There are three versions of CRS, depending on the number of items, i.e., lengths with 15 (CRS-15), with 10 (CRS-10), and with five items (CRS-5). The CRS-15 includes three items per dimension, and it is considered to have highest ability to
discriminate the various dimensions, which basically means that it has the highest reliability and accuracy in measuring the five core dimensions of religiosity. The reliability of each dimension of CRS-15 ranges from 0.80 to 0.93 and for the whole scale, the reliability statistics range from 0.92 to 0.96. The CRS-10 and CRS-5 are shorter versions of CRS-15, with CRS-10 including two items for each dimension and CRS-5 including one item per dimension of the scale. The CRS-10 has also been reported to have high reliability of each dimension, ranging from 0.89 to 0.94.

The scale is available in about 20 languages and the global religious monitor study, the scale was used in India too, in the Hindi language. However, we could not find the Hindi version. We contacted the authors of the original scale and sought permission to translate the scale to Hindi, to adapt the same to the Indian context, and to validate the same.

Duke Religion Index (DUREL)[13]: It is a five-item scale which measures three main dimensions of religiosity, i.e. organisational religious activity, nonorganizational religious activity, and intrinsic religiosity (or subjective religiosity). The scale has been shown to have high test-retest reliability (intraclass correlation = 0.91), high internal consistency (Cronbach’s alpha’s = 0.78–0.91), and high convergent validity with other measures of religiosity (correlation coefficient = 0.71–0.86). Studies have also shown the factor structure of DUREL in various study samples. This scale has been used in more than 100 studies conducted throughout the world and is available in ten languages. No Hindi version of the scale is available. Permission was sought from the author of the original scale for translation and adaptation.

Brief Religious Coping Scale[14]: The Religious Coping scale (RCOPE) was designed by Pargament. The initial scale comprised of 105 items and the later versions included 21 and 14 items. The 14-item version is known as Brief RCOPE. The various items of RCOPE were generated through interviews with people experiencing major life stressors. Based on the factor analysis of the full RCOPE, two overarching forms of religious coping, i.e. positive and negative, were conceptualized. Positive religious coping methods reflect a secure relationship with a transcendent force, a sense of spiritual connectedness with others, and a benevolent worldview. Negative religious coping strategies reflect underlying spiritual tensions and struggles within oneself, with others, and with the divine. Reliability estimates were generally high for the full scale, indicating good internal consistency. However, in view of the length of the scale, later versions of RCOPE included 14- and 21-item scales. The 14-item scale is very popular and considered to have reliability statistics comparable to that of the full scale.[13] Studies suggest good internal consistency of the positive and negative subscales of the Brief RCOPE.[14] Available data also suggests that various subscales of Brief RCOPE have good construct validity, predictive validity, and incremental validity.[14] For the translation and adaptation process, we chose the Brief RCOPE because of its brevity. We sought permission from the researchers who developed this scale for the process of translation and adaptation.

The process of translation and adaptation

All the three scales were translated to Hindi by health care professionals with proficiency in both Hindi and English, by following the standard methodology of translation and back translation as per the World Health Organization.[16] To start with, all the scales were translated by three health care professionals into Hindi. The three health care professionals included one psychiatrist, one clinical psychologist, and one social worker. All the three Hindi versions were initially reviewed by a panel of experts who were not part of the initial translation process, for accuracy, semantics, and cultural appropriateness. The three experts included two psychiatrists and one clinical psychologist. Each item from the three scales was evaluated one by one, and out of the available three versions, the translated item which retained the original meaning and conveyed the same in the simplest form was retained. If such was not the case, the expert panel modified the available translated items or designed the same. While choosing the various translated items, importance was laid on the accuracy, semantics, and cultural appropriateness. Wherever it was felt that the item required adaptation keeping the Indian religious practices, the items were modified. Based on all the inputs, an initial translated version was made for each scale. This prefinal version was given to 10 health care professionals and 10 lay people for evaluating the simplicity of the language and cultural appropriateness. Based on their inputs, further modifications were made, and the final translated versions of the scales were prepared. The accepted translated version was back-translated to English by another set of bilingual health care professionals, and the back-translated version was matched with the original version, and if required, suitable modifications were made to retain the same meaning and at the same time, retaining the cultural appropriateness of the scales.
Adaptation of CRS included a further elaboration of certain words to make things more explicit. In the items 3 and 8, the words “religious services” were expanded to going to temple for prayers, participating in group religious activities, or going to certain specific religious conglomerations. In the items 4b and 9b, the word “meditate” was expanded to “meditate, indulge in devotional activities, or remember god”. In item 7, description of the resurrection of the dead was excluded as this was considered irrelevant, and it was thought that “punajanm” was sufficient to convey the meaning of reincarnation and resurrection.

A few adaptations were included in the Brief RCOPE. The words in item 12, “…church had abandoned me”, was elaborated further as “…Church/ Temple/ Guru Dwara/Mosque or my Religious Guru has abandoned me”. In item 13, the word devil was replaced by words “Danav/Pichash”, as these were considered as colloquial equivalents of the word devil.

The adaptations for DUREL item 1 included a further elaboration of words “church or other religious meetings” into “church/temple/mosque/gurudwara or any other place related to religious activities”. The adaptation of item 2 included an elaboration of “religious activities, such as prayer, meditation or Bible study” into “indulge in prayers, meditation, and reading religious books like Ramayana, Quran, Guru Granth Sahib, Bible, etc”.

The process of evaluation of psychometric properties

For the purpose of validation, initially, the Hindi versions of all the three scales were given to 132 healthy subjects selected by purposive sampling. They were asked to complete the scales by themselves. They were explained about the purpose of the study and only those who provided written informed consent were recruited. The same group of subjects were approached again after a gap of 3–7 days and asked to either complete the Hindi version again (N = 61) or the English version of the scale (N = 71).

Statistical analysis

The data was analyzed by using the SPSS 14 (SPSS, Chicago [IL], US). Categorical data were extracted in the form of frequencies and percentages, whereas the continuous data were extracted in the form of mean and standard deviations. Intraclass correlation coefficient (ICC) and Pearson’s correlation coefficients were used to evaluate the agreement between the Hindi–Hindi version and Hindi–English version. Cohen’s kappa value was used to evaluate the test–retest reliability of each scale. Internal consistency of various scales was evaluated in terms of Cronbach’s alpha, and split-half reliability of Hindi versions of the scales were evaluated in terms of the Spearman–Brown coefficient.

RESULTS

Table 1 shows the sociodemographic profile of the participants.

Psychometric properties

Concurrence between Hindi and English versions

Agreement between the Hindi (provided as an online-only supplementary file) and the English versions was evaluated by using ICC and Pearson’s correlation coefficients. As is evident from Tables S1-S3, for all the items of CRS, DUREL, and Brief RCOPE, the Pearson correlation coefficients and ICC were above 0.85 and significant at the level of <0.001. ICC values and Pearson correlation coefficients values were above 0.9 and significant at the level of <0.001 for various dimensions of CRS, total CRS score, intrinsic religiosity domain of DUREL, positive RCOPE, and negative RCOPE.

Test–retest reliability

In terms of test–retest validity of Hindi-version of all the three scales, the kappa values and ICC values were above ≥0.74 and significant at the level of <0.001, suggesting high test–retest reliability.

Internal consistency and split-half reliability

Cronbach’s alpha (as a measure of internal consistency) for Hindi version of all the three scales and various domains of CRS, DUREL, and brief RCOPE were also found to be high [Table 2]. The Spearman–Brown coefficient and Guttmann split half value (for assessing split-half reliability) for all the three scales, and their
Table 2: Split-half reliability of the three scales

| Cronbach's Alpha for the scale/domains | Cronbach's alpha | Spearman-Brown coefficient | Guttman Split half |
|---------------------------------------|------------------|-----------------------------|-------------------|
|                                        | Part-1 | Part-2 |                        |                   |
| CRS                                   |        |        |                        |                   |
| Intellect                             | 0.66*** | 0.79*** | 1.00***                | 0.44***          |
| Ideology                              | 0.75*** | 0.56*** | 1.00***                | 0.79***          |
| Public practice                       | 0.84*** | 0.76*** | 1.00***                | 0.85***          |
| Private practice                      | 0.86*** | 0.79*** | 0.76***                | 0.83***          |
| Experience                            | 0.77*** | 0.65*** | 0.72***                | 0.93***          |
| Total CRS                             | 0.95*** | 0.93*** | 0.91***                | 0.89***          |
| DUREL                                  |        |        |                        |                   |
| DUREL Total                           | 0.76*** | 0.71*** | 0.59***                | 0.71***          |
| Brief RCOPE                           |        |        |                        |                   |
| Total Brief RCOPE                     | 0.89*** | 0.89*** | 0.93***                | 0.43***          |
| Positive Brief RCOPE                  | 0.89*** | 0.84*** | 0.71***                | 0.92***          |
| Negative Brief RCOPE                  | 0.92*** | 0.87*** | 0.89***                | 0.89***          |

***P<0.001. CRS: Centrality of religiosity scale; DUREL: Duke religion index; RCOPE: Religious coping scale

Table 3: Correlations of CRS with DUREL and Brief RCOPE

|                      | CRS total | DUREL Total |
|----------------------|-----------|-------------|
| Total CRS            | X         | X           |
| DUREL Total          | 0.52***   | X           |
| Brief RCOPE          |           |             |
| Positive Brief RCOPE | 0.45***   | 0.39***     |
| Negative Brief RCOPE | -0.23***  | 0.07        |
| Total Brief RCOPE    | 0.11      | 0.27***     |

*P<0.05; **P<0.01; ***P<0.001. CRS: Centrality of religiosity scale; DUREL: Duke religion index; RCOPE: Religious coping scale

Correlations between different scales

As shown in Table 3, when the associations of CRS, DUREL, and RCOPE with each other were evaluated, CRS total score correlated positively with DUREL total score and positive RCOPE score, and negatively with negative RCOPE score. When the association of DUREL and RCOPE was evaluated, positive RCOPE and total RCOPE scores correlated positively, whereas negative RCOPE score correlated negatively.

DISCUSSION

The present study demonstrated high agreement for all the items of Hindi and the English version of CRS, DUREL, and Brief RCOPE. The Pearson correlation coefficients and ICC values were above 0.85, suggesting a high level of agreement between the scales of both the languages. The ICC and Pearson correlation coefficient values for the Hindi and English versions were also above 0.9 for the various dimensions of CRS, total CRS score, intrinsic religiosity domain of DUREL, positive RCOPE, and negative RCOPE suggesting an excellent agreement between the Hindi and English versions of the scale.

The test–retest reliability of all the items of Hindi version of all the three scales was above 0.8 for most of the items, indicating test–retest reliability to be good to excellent. Similarly, the kappa values for various dimensions of CRS, domains of DUREL, and subscales of brief RCOPE were also above 0.7 for most of these variables, indicating acceptable test–retest reliability. The Cronbach’s alpha for CRS and brief RCOPE were around 0.9 or above, indicating excellent internal consistency for the full scales. The Cronbach’s alpha for DUREL was 0.76, indicating acceptable internal consistency. The split-half reliability of all the scales was also in the good to excellent range. Accordingly, overall, it can be said that the Hindi versions of CRS, DUREL, and brief RCOPE have good to excellent psychometric properties and have good cross-language equivalence with the English version. Hence, it can be said that the findings of the Hindi version would be comparable with those of the English language version and that the Hindi version would yield scores which can be compared with those reported from other countries using different language versions.

The total DUREL score also had an acceptable correlation coefficient with the total CRS score, indicating good concordance between the two scales.

Religious coping methods are understood as “sacred” strategies, which are often used to handle the stressors of day to day life. The word “sacred” is used to denote not only the “traditional notions of God, divine or higher powers, but also to denote other aspects of life that are thought to be influenced or associated with...
the divine or are associated with a feeling of divine-like qualities." [17,18] Considering this, it can be said that high religiosity may be associated with higher use of religious coping. Keeping this in mind, we evaluated the correlation of brief RCOPE with CRS and DUREL. We found that positive RCOPE had a significant correlation with total CRS score, and total DUREL score. However, most of the correlation coefficients were in the range of 0.3–0.5. Negative RCOPE subscale had a significant negative correlation with total CRS. However, these correlation coefficients were less robust. These low correlation coefficients suggest that religiosity may not be a true reflection of the use of either positive or negative religious coping. Overall, it can be said that convergent validity between these scales is average to low. This could possibly be due to the differences in the various aspects of religiosity across these three different scales.

To conclude, the present study suggests that the Hindi version of CRS, DUREL, and brief RCOPE has good cross-language equivalence with the English version. The test–retest reliability, internal consistency and split half reliability of CRS, DUREL, and brief RCOPE are good to excellent. It is hoped that the availability of Hindi versions of these scales will improve our understanding of the contribution of religiosity in various dimensions of health care. Various components of religiosity are closely associated with mental health. It is not uncommon for patients with various mental illnesses to present with symptoms having religious content. Further, religiosity and religious practices influence the type of help-seeking, medication compliance, adherence to treatment, acceptance of illness, etiological models of illnesses, etc., It is hoped that the availability of these instruments will help the researchers in studying the association of these variables with religiosity.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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