

---

## Assessing the Psychometric Properties of Hindi version of Experiences in Close Relationships - Revised (ECR-R) scale

Ritesh Mehta Kumar<sup>1</sup>

<sup>1</sup>Research Scholar, Department of Humanities and Social Sciences, Indian Institute of Technology Roorkee, Haridwar, India.

**How to cite this article:** Ritesh Mehta Kumar, Research Scholar, Department of Humanities and Social Sciences, Indian Institute of Technology Roorkee, Haridwar, India. Indian Journal of Forensic Medicine and Toxicology 2022;16(4).

### Abstract

Experiences in close relationships - revised (ECR-R) is a widely used questionnaire to measure adult attachment in romantic and marital relationships. Despite its popularity, a Hindi version of ECR-R is missing. Hindi is a dominant language in India; absence of Hindi ECR-R hinders both research and practice in the Indian context. The present study was aimed to fill this gap by providing culturally validated ECR-R. The study (N = 337, community sample, 53.41% females) evaluated the psychometric properties of Hindi ECR-R. The confirmatory factor analysis supports the presence of two-factor model as originally theorized in ECR-R. The support for discriminant validity is provided by negative correlation with inclusion of other in self (IOS) scale. The study contributes methodologically by providing an adequate instrument to measure attachment styles in the Indian context, which could be a valuable resource for practitioners and researchers alike.

**Keywords:** Attachment theory, Assessment, Culture, Interpersonal relationships, Measures, Scale.

Attachment theory is one of the most popular theories of interpersonal relationships. Although scholars have developed several scales and questionnaires to measure attachment patterns, 'Experiences in close relationships (revised)' (ECR-R)<sup>1</sup> is often the first choice of researchers. ECR-R contains 36 items that measure insecure attachment styles— anxiety and avoidance. The reliability and validity of ECR-R are evidenced as better than that of other attachment measures. Fraley et. al. found the Cronbach's alpha value above .90 for anxiety and avoidance.<sup>1</sup>

Several western and cross-cultural studies have replicated the findings of Fraley et. al.<sup>1</sup> The scale has been translated and modified into multiple languages, including French,<sup>2</sup> Greek,<sup>3</sup> Italian,<sup>4</sup> Korean,<sup>5</sup> Serbian,<sup>6</sup> Romanian,<sup>7</sup> Slovak,<sup>8</sup> Dutch,<sup>9</sup> Spanish,<sup>10</sup> and Chinese,<sup>11</sup>. Most of these studies have confirmed the original two-dimensional structure of attachment consisting of anxiety and avoidance. However, some cross-cultural studies have yielded contrasting results. For instance, Al Tamimi's<sup>12</sup> evaluation of the ECR-R scale in Arabic did not confirm the original findings. Similarly, Jaiswal's<sup>13</sup> attempt to

---

**Corresponding Author:** Ritesh Mehta Kumar, Research Scholar, Department of Humanities and Social Sciences, Indian Institute of Technology Roorkee, Haridwar, India.

**E-mail:** kumar.riteshmehta@gmail.com

---

translate the ECR-R scale in Hindi did not produce any interpretable results. Jaiswal reasoned that the failure to replicate the original model could have been because of social desirability, item wordings, or the plausibility that the two-dimensional model of attachment is applicable mostly in the western context and not entirely for all cultures.

The present work was aimed at re-assessing the psychometric properties of Hindi ECR-R. Support for the validity of Hindi ECR-R would strengthen the cross-cultural support for the two-dimensional model of attachment. Although studies on attachment have grown multifold,<sup>14</sup> a large number of these studies have remained focused on the WEIRD sample.<sup>15</sup> The lack of culturally validated instruments and measurement tools is one of the reasons for the gap in our knowledge about relationship functioning from diverse cultures. Hindi is a dominant language in India, particularly in the northern regions. A culturally validated attachment scale would be highly beneficial to relationship research and practice in the Indian context.

## Methods

We started by translating ECR-R items from English to Hindi. Items were modified to measure the attachment of married individuals with their spouses. An example of an anxiety item is "I often worry that my husband/wife will not want to stay with me." And an example of an avoidance item is "I prefer not to show my husband/wife how I feel deep down." Three forward and one backward translation were done for each of the questionnaires with the help of volunteers who had university-level education and were fluent in Hindi and English. The items with clear meanings were selected. These translated and modified items were pilot tested on a small sample (N = 30) to ensure that the items were meaningful and comprehensible for the participants. This translated scale was then used to collect data.

We recruited 337 participants (157 males and 180 females) from two states of northern India, i.e., Bihar and Uttar Pradesh, to participate in the study using snowball sampling. Participants' age ranged from 18 to 63 years (M = 36.20yrs., SD = 7.543). While 152 participants (45.1%) came from rural areas, 185

(54.9%) lived in urban areas. All the participants were literate, and they were all living in arranged marriages. The mean years of being in the relationship were 12.72 yrs. (SD = 7.67). Participants were briefed about the study, and their consent was sought. They had the option to drop out of the study at any point during the data collection process.

The instruction for the ECR-R scale read: "Following statements concern how you feel about your relationship with your husband/wife. Respond to each statement by circling the number that best indicates how much you agree or disagree with those statements. Here '1' refers to 'strongly disagree' and '5' refers to 'strongly agree.'" Twelve items of avoidance dimension and two items of anxiety dimensions are reverse coded. The scores of these items are reversed before calculating the aggregate score that reflects the attachment insecurity of the individual.

We also used 'Inclusion of other in self scale' (IOS) to test the discriminant validity of Hindi ECR-R. IOS<sup>16</sup> is a one-item pictorial scale that contains seven options, each consisting of two overlapping circles in different degrees. The degree of overlap indicates the degree to which individuals have incorporated their partners in their self-concept. We reasoned that since IOS measures the level of intimacy in the relationship, it should negatively correlate with insecure attachment styles. Constant et. al.<sup>17</sup> have found a statistically significant but negative correlation between anxious and avoidant attachments and intimacy indicators. The instruction provided to participants read, "Each of the seven options provided below has two overlapping circles. One circle represents your personal self, and the other represents the self of your husband/wife. Please circle the option that best represents the degree of inclusion of your partner in your personal self."

## Results

Data analysis was carried out in SPSS (v. 20) and Amos (v. 20). We carried out both exploratory and confirmatory factor analysis (EFA and CFA). Principal component analysis and varimax rotation were used for EFA. We forced the extraction of two factors. The KMO and Bartlett's test of sphericity indicated that factor analysis was meaningful

(KMO=.80; for Bartlett's test =10354.55, df=703, sig < 0.01). Most items loaded significantly on their respective components— anxiety and avoidance. However, four anxiety items (items 1, 5, 6, and 7) significantly loaded on avoidance dimension (> 0.3),

and three avoidance items (27, 29, and 36) overlapped on anxiety dimensions. Since the model was majorly aligned with the two-dimensional attachment model, we decided to confirm the findings using confirmatory factor analysis.

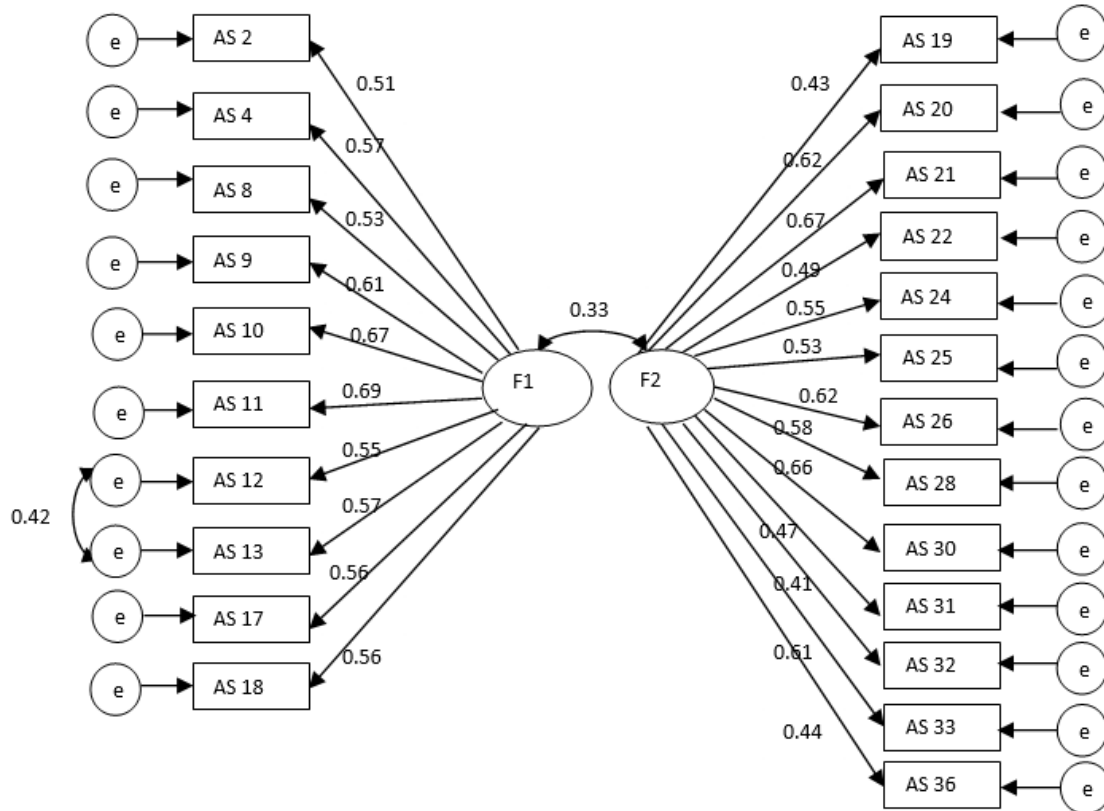


Figure 1: Factor loading of items

CFA was carried out in Amos (v. 20). The model fit indices indicated that the original two-factor model with 36 items did not have adequate model fit indices (TLI = 0.65, CFI = 0.67, RMSEA = 0.07). The factor loadings indicated that some items had low loadings on their respective components. We removed these items. A total of eight avoidance items and five anxiety items that had low loading (< 0.40) were removed. We also drew covariance between error terms of avoidance items 12 and 13. This improved the model fit index substantially (TLI = 0.89, CFI = 0.90, RMSEA = 0.05). The final model had ten avoidance items and 13 anxiety items.

The Cronbach's alpha was .84 for both avoidance dimension and anxiety dimensions. The confirmatory factor analysis itself provides support for the internal consistency and structure of the construct. We

calculated the discriminant validity using Henseler's hetero-trait mono-trait (HTMT) method.<sup>18</sup> The HTMT score is recommended to be lower than .85. The HTMT score for the modified Hindi ECR-R was .34. Thus the discriminant validity was supported. The discriminant validity was also supported by analyzing the correlation between the attachment styles and the IOS scale. We found a statistically significant but negative correlation between avoidant attachment and IOS (-0.44,  $p < .01$ ) as well as between anxious attachment and IOS (-0.32,  $p < .01$ ). It is reasoned that individuals with insecure attachment (anxiety and avoidance) tend to behave in ways that adversely affect intimacy in their relationship.<sup>19</sup>

## Discussion

The study's findings support the two-dimensional model for the Hindi ECR-R. The findings also

suggest adequate reliability, internal consistency, and discriminant validity for the measure. Jaiswal<sup>13</sup> had failed to find an interpretable structure for Hindi ECR-R that led her to question the applicability of ECR-R in a cross-cultural context. She reasoned that items' wording and social desirability could have negatively influenced her study. Issues with item wordings of ECR-R have also been observed in Kim et. al.<sup>5</sup>, where the authors found positive and negative worded items emerge as separate factors. Item wordings and social desirability could have influenced the current study as well. It is possible that the wording of items affects the meaning or content it aims to investigate. Despite this, in the present study, the two-dimensional structure was interpretable. The findings indicate that the Hindi ECR-R can be meaningfully used to explore adult attachment in the Indian context.

Hindi ECR-R can be a valuable resource for both practitioners and academicians. The family and couple counselors would benefit from the availability of the Hindi version of these scales. The availability of culturally validated instruments opens new avenues for testing and extending attachment theory propositions in the Indian context.

There are some limitations to the current study. Although the sample size was moderate, a larger sample would have provided a more accurate picture. Using other measures and scales to explore convergent and discriminant validity rather than relying only on HTMT and CFA could have provided a more accurate picture of the construct validity. The future direction would be to modify the ECR-R items that had lower loadings on the anxiety and avoidance dimensions and test the influence of item wording.

**Conflict of Interests:** Author does not have any conflict of interest to report.

**Funding:** The author did not receive any funding for the present work.

**Acknowledgements:** he author is thankful to the volunteers Archana, Deepshikha, Jaya, and Mrunali for their support in the translation of items.

**Ethical Clearance:** Ethical clearance was provided by the Institutional Review Boards of Indian Institute of Technology Roorkee, India.

## References

1. Fraley RC, Waller NG, Brennan KA. An Item Response Theory Analysis of Self-Report Measures of Adult Attachment. *J Personal Soc Psychology*. 2000;78(2):350-65.
2. Favez N, Tissot H, Ghisletta P, Golay P, Notari SC. Validation of the French version of the experiences in close relationships- revised (ECR-R) Adult romantic attachment questionnaire. *Swiss J Psychol*. 2016;75(3):113-21.
3. Tsagarakis M, Kafetsios K, Stalikas A. Reliability and validity of the Greek version of the revised experiences in close relationships measure of adult attachment. *Eur J Psychol Assess*. 2007;23(1):47-55.
4. Busonera A, San Martini P, Zavattini GC, Santona A. Psychometric properties of an italian version of the experiences in close relationships-revised (ECR-R) scale. *Psychol Rep [Internet]*. 2014;114(3):785-801. Available from: <https://doi.org/10.2466/03.21.PR0.114k23w9>
5. Kim SH, Sherry AR, Lee YS, Kim CD. Psychometric properties of a translated Korean adult attachment measure. *Meas Eval Couns Dev*. 2011;44(3):135-50.
6. Hanak N, Dimitrijevic A. A Serbian version of modified and revised experiences in close relationships scale (SM-ECR-R). *J Pers Assess*. 2013;95(5):530-8.
7. Rotaru T-Ş, Rusu A. Psychometric Properties of the Romanian Version of Experiences in Close Relationships-revised Questionnaire (ECR-R). *Procedia - Soc Behav Sci*. 2013;78(1990):51-5.
8. Rozvadský Gugová G, Heretik A. Gender Differences in Attachment Styles Using Slovak Version of the Experiences in Close Relationships - Revised (ECR-R). *Acta Technol Dubnicae*. 2015;1(2):29-36.
9. Kooiman CG, Klaassens ER, Van Heloma Lugt JQ, Kamperman AM. Psychometrics and validity of the dutch experiences in close relationships-revised (ECR-r) in an outpatient mental health sample. *J Pers Assess*. 2013;95(2):217-24.
10. Alonso-Arbiol I, Balluerka N, Shaver PR. A Spanish version of the Experiences in Close Relationships (ECR) adult attachment questionnaire. *Pers Relatsh*. 2007;14(1):45-63.
11. Mastrotheodoros S, Chen B Bin, Motti-Stefanidi F. Experiences in close relationships-revised (ECR-R): Measurement (non-) invariance across Chinese and Greek samples. *Eur J Dev Psychol*. 2015;12(3):344-58.

- 
12. Al Tamimi N. Predictors of marital satisfaction in arranged marriages in Saudi Arabia. University of York; 2009. Available from: <http://doi.apa.org/getdoi.cfm?doi=10.1037/0022-3514.63.4.596>
  13. Jaiswal T. Indian Arranged Marriages. London and New York: Routledge; 2014.
  14. Reis HT. Steps toward the ripening of relationship science. *Pers Relatsh*. 2007;14(1):1-23.
  15. Henrich J, Heine SJ, Norenzayan A. Most people are not WEIRD. *Nature*. 2010;466(7302):29-29.
  16. Aron A, Aron EN, Smollan D. Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *J Pers Soc Psychol* [Internet]. 1992;63(4):596-612.
  17. Constant E, Christophe V, Bodenmann G, Nandrino JL. Attachment orientation and relational intimacy: The mediating role of emotional competences. *Curr Psychol*. 2018;40(3):1374-85.
  18. Henseler J, Ringle CM, Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J Acad Mark Sci*. 2015;43(1):115-35.
  19. Mikulincer M, Shaver PR. Attachment in Adulthood: Structure, Dynamics, and Change. New York: Guilford press; 2007.