TRANSLATION AND VALIDATION OF HINDI VERSION OF COUPLE SATISFACTION INDEX

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Abstract: The Couple Satisfaction Index (CSI) is widely used to measure marriage happiness and satisfaction among couples. While several translations of the CSI exist, the Hindi version is a novel addition. The study aims to adapt the CSI into Hindi and investigate its psychometric properties and factor structures. A rigorous translation and back-translation process was employed to ensure the fidelity of the original CSI scale in Hindi. The study sample comprised 300 married men and women aged 25-40, recruited through purposive sampling. A rigorous translation and back-translation process was employed to ensure the fidelity of the original CSI scale in Hindi. Descriptive statistics, exploratory and confirmatory factor analysis, reliability analysis were examined with the help of Statistical Package for the Social Sciences (SPSS), and Analysis of Moment Structures (AMOS). Results of exploratory and confirmatory factor analysis (CFI) yielded robust results, confirming the four-factor structure of the Hindi version of CSI. These four factors are intimacy and commitment in marital relationships, affection and bonding, happiness, and unpleasant relationships. The CFI model fit indices were within an acceptable range, demonstrating good construct validity. Cronbach's alpha of the full scale and subscales were between 0.83 and 0.96, indicating high internal consistency. Findings indicate that the Hindi version of the CSI is a reliable and valid measure of couples' satisfaction in marriage. This measure can confidently be used in research on family and marriage relations among Hindi-speaking populations, expanding the CSI's reach and applicability.

Keywords: Couple's satisfaction; Hindi adaptation; Translation; Factor structure; Reliability analysis.

INTRODUCTION:

Marriage is an important institution of adult life. A happy married life is no less than heaven, while its spoilage makes life hell. In marriage, closeness and commitment increase companionate love and happiness. Studies demonstrated that compared to dissatisfied couples, satisfied couples have greater health, better well-being, fewer marital disputes, and overall higher quality of life (Kamp Dush et al., 2008; Kiecolt-Glaser & Newton, 2001; King, 2016; Uludağlı et al., 2021). Happiness and satisfaction in close relationships positively affect the family relationship and well-being (Nelson-Coffey, 2018). Marital satisfaction is a person's subjective experience and perception of their married life (Fincham et al., 2018). Various terms, such as 'marital happiness,' 'marital success,' and 'marital adjustment,' can be used interchangeably for marital satisfaction (Fincham & Rogge, 2010; Kluwer, 2010).

A review of studies indicated that marital satisfaction was often measured by a single approach. However, during the 1970s, a change took place in the use of multimethod approaches to study marital satisfaction (Gottman & Notarius, 2002). This methodological movement led to the development of various scales, including the Kansas Marital Satisfaction Scale (KMS), the Dyadic Adjustment Scale (DAS), the Marital Adjustment Scale (MAS), the Relationship Assessment Scale (RAS), and the Couple Satisfaction Index (CSI). These are frequently used instruments in marriage and family research to measure relationship satisfaction. CSI is the most popular measure of a couple's happiness and relationship satisfaction. This scale is available in four different versions, i.e., CSI-32, CSI-16, CSI-8, and CSI-4. The first version of CSI-32 is developed by Funk and Rogge in 2007 in English for the US population, which is translated and validated in different languages, including Persian, Korean, Russian and French-Canadian but not yet in Hindi (Forouzesh Yekta et al., 2017; Funk & Rogge, 2007; Jbilou et al., 2021; Kim et al., 2022; Okhotnikov & Wood, 2020).

One important characteristic of CSI is its psychometric properties and precise measurement, which are developed by analysing each item with the item response theory (IRT) method and factor analysis of existing popular measures of relationship satisfaction, communication, affection, arguments, and stress. Funk and Rogge reported that popular measures like KMS, DAS, MAS, RAS, and others contain a large number of items with contaminated items and error variance (Funk & Rogge, 2007). Funk and Rogge argued that many studies done with these scales involve serious measurement errors, and emerging models should be validated using precise and psychometrically sound measures (Forouzesh Yekta et al., 2017). Previous studies have indicated that CSI is a psychometrically sound and precise measure for assessing the quality and satisfaction of marital relationships (Funk & Rogge, 2007). This scale is widely used in family and couple relations research for the measurement of relationship quality, couple-based intervention, partners engaged in symptom accommodation, couple therapy, parents of children with autism spectrum disorder, etc. (Funk & Rogge, 2007; Kim et al., 2022; Kugler et al., 2019; Kuncewicz et al., 2021; Malivoire et al., 2024; Sim et al., 2017). The good psychometric properties and broad implications of this scale have led researchers to translate and validate it in

different language and cultural contexts. However, a Hindi version of CSI-32 is not available, which is a significant gap in the research, leading to very few studies with CSI-32 on Hindi-speaking married couples in India. Hindi is one of the most spoken languages in India. Therefore, to promote research on marriage and families belonging to Hindi-speaking regions in India, the present study aims to adapt the CSI-32 to the Hindi language and analyse its psychometric properties and factor structure, potentially bringing significant benefits to the field of marriage and family studies.

METHOD

Sample

A purposive sampling method was followed to select 300 married people, comprising 150 males and 150 females (25 to 40 years old). The mean age and standard deviation of participants was 35.45 (5.79). The sample was collected from several districts in Uttar Pradesh, such as Allahabad, Azamgarh, Varanasi, Bhadohi (Sant Ravidas Nagar), Jaunpur, and Ghazipur, India. Each participant possessed a minimum of a 10th-grade education or above, and they were capable of reading and understanding the Hindi language.

Out of 300 married participants, 197 (65.7%) were employed. Concerning years of marriage, 102 (34%) participants were in the early years of their married life (1 to 5 years), 72 (24%) were between 6-10 years of married life, 47 (15.70%) were between 11-15 years of married life, and the remaining 84 (26.3%) participants were in the last years of their married life (above 15 years). About 216 (72%) married participants have a child. Regarding the family structure, 156 (52%) participants were from nuclear families, and others were from joint families. 121 (40.3%) participants were from the rural population, and 179 (59.7%) were from urban areas.

Participants with a history of separation or divorce or who had a history of neurological illness, any kind of impairment, or psychological disorder were excluded from the final sample.

Measures

The couple satisfaction index was originally developed in 2007 by Funk & Rogge. It is a 32-item scale designed to measure couples' happiness, satisfaction, and feelings of togetherness. The first item of the scale collected responses on a 7-point Likert scale option, while the other 31 items collected responses on a 6-point Likert scale. The total score varies from 0 to 161, and higher scores suggest greater relationship satisfaction among couples. The reliability index of the alpha coefficient is 0.98 (Funk & Rogge, 2007).

Procedure

Translation and back translation method of test adaptation was followed to adapt the original English CSI-32 scale into Hindi according to standard norms recommended by WHO (WHO, 2018). The original author's permission was obtained before starting the translation of scale. Three Hindi-proficient psychology professors translated the scale from English to Hindi. Subsequently, three more professors who were unaware of the original English version of the scale back-translated the Hindi version of CSI. The final stage involved an overall evaluation of the original and translated versions of CSI, creating the appropriate final version of CSI-32 in Hindi. There were no culturally appropriate items in scale; hence, cultural adaptation was not done for any of the items.

Following the translation process for further statistical analysis, this research followed the American Psychological Association Guidelines. This research proposal is approved by the Departmental Research Committee (DRC) and the Research Progress Committee (RPC) of the Department of Psychology, Banaras Hindu University. Then, translated Hindi CSI was administered to the participants after rapport establishment. Each participant consented to participate, and no incentives were offered for participation in this research. A proper code of conduct was maintained throughout the research and data analysis. Participants' privacy and confidentiality were ensured in this research.

Statistical Analyses

Statistical analyses were done with the help of Statistical Package for the Social Sciences (SPSS) and Analysis of Moment Structures (AMOS) software. An Exploratory Factor Analysis was performed by using principal component analysis to determine the scale's factor structure. A Confirmatory Factor Analysis was run to verify the factor structure in the observed variables. A reliability measure of internal consistency was calculated by using the Cronbach's alpha method.

RESULTS

Exploratory factor analysis (EFA)

Some essential assumptions were tested before conducting exploratory factor analysis (EFA). Firstly, the value of determinants was checked (6.58E-012), which revealed that the multicollinearity problem is not present in the model. Sample size adequacy was assessed using Kaiser-Meyer-Olkin (KMO), whose value was 0.95. Bartlett's sphericity test was also significant, indicating the adequacy of sample size for EFA. EFA was performed using principal component analysis with varimax rotation by selection of factor loading > 0.40 and retaining four factors with Eigen value greater than 1, which is presented in Table 1 and Fig. 1(Hair et al., 1998; Stevens, 2002).

Figure 1. Shows the scree plot of four-factor model of Couple Satisfaction Index (CSI-32)
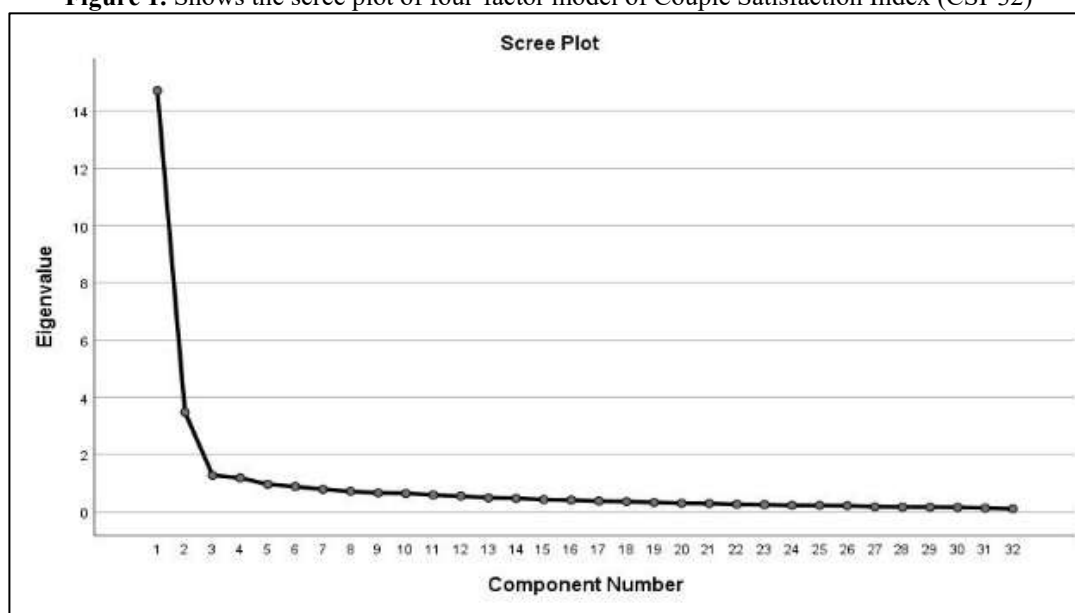

Table 1: represents the factor loadings of four-factor model of Couple Satisfaction Index (CSI-32)

Items	Descriptions	Factor loadings			
		I	II	III	IV
Q 10.	मुझे कभी-कभी आश्चर्य होता है कि मेरे किए कोई और बना/बनी है । I sometimes wonder if there is someone else out there for me.	0.79			
Q 24.	क्या आप अपने जीवन-साथी की संगत में आनंदित होते है ? Do you enjoy your partner's company?	0.70			
Q 21.	आपका सम्बन्ध किस हद तक आपके वास्तविक उम्मीदों पर खरा उतरा है ? To what extent has your relationship met your original expectations?	0.67			
Q 6.	आप कितनी बार सोचते है कि आप इस सम्बन्ध में न आए होते ? How often do you wish you hadn't gotten into this relationship?	0.67			
Q 20.	आपका जीवन-साथी आपकी जरूरतों को कितनी अच्छी तरह पूरा करता है ? How well does your partner meet your needs?	0.66			
Q 8.	अगर मेरे पास और अधिक जीवन जीने के लिए होता, तब मैं उसी व्यक्ति से शादी करता । If I had my life to live over, I would marry (or live with/date) the same person.	0.64			
Q 9.	हमारा सम्बन्ध मजबूत है । Our relationship is strong.	0.62			
Q 25.	आप और आपके जीवन-साथी कितनी बार साथ में मस्ती करते है ? How often do you and your partner have fun together?	0.60			
Q 23.	दूसरों की तुलना में आपका सम्बन्ध कितना अच्छा है ? How good is your relationship compared to most?	0.58			
Q 18.	मेरी कल्पना में जितनी ख़ुशी मेरा जीवन-साथी मुझे दे सकता है, उतना कोई और नहीं दे सकता/सकती । I cannot imagine another person making me as happy as my partner does.	0.58			
Q 22.	सामान्य तौर पर आप अपने सम्बन्ध से कितने संतुष्ट है ? In general, how satisfied are you with your relationship?	0.57			
Q 15.	मैंने हाल ही में इस सम्बन्ध के बारे में दोबारा विचार किया । I have had second thoughts about this relationship recently.	0.53			
Q 19.	आपके जीवन-साथी के साथ आपका सम्बन्ध कितना लाभप्रद है ?	0.53			

	How rewarding is your relationship with your partner?				
Q 5.	सामान्य तौर पर आप कितनी बार सोचते है कि आपके और आपके जीवन-साथी के बीच सब कुछ ठीक चल रहा है ? In general, how often do you think that things between you and your partner are going well?	0.52			
Q 3.	महत्वपूर्ण निर्णय लेना Making major decisions.		0.77		
Q 2.	साथ व्यतीत किया गया समय Amount of time spent together.		0.75		
Q 13.	मैं अपने जीवन-साथी के साथ सम्बन्ध समाप्त करने की कल्पना नहीं कर सकता। I can't imagine ending my relationship with my partner.		0.73		
Q 11.	अपने जीवन-साथी के साथ सम्बन्ध में मैं खुश रहता /रहती हूँ। My relationship with my partner makes me happy.		0.68		
Q 4.	प्रेम का प्रदर्शन Demonstrations of affection.		0.66		
Q 16.	मेरे लिए, मेरा जीवन-साथी एक आदर्श रूमानी साथी है । For me, my partner is the perfect romantic partner.		0.66		
Q 7.	मैं अभी भी अपने जीवन साथी के साथ एक मजबूत सम्बन्ध महसूस करता/करती हूँ। I still feel a strong connection with my partner.		0.63		
Q 12.	अपने जीवन-साथी के साथ मेरा सम्बन्ध मधुर एवं सुखद है । I have a warm and comfortable relationship with my partner.		0.59		
Q 14.	मुझे लगता है कि वस्तुतः किसी भी विषय में अपने जीवन-साथी पर विश्वास कर सकता/सकती हूँ। I feel that I can confide in my partner about virtually anything.		0.56		
Q 17.	मैं वास्तव में अपने जीवन-साथी के साथ एक समूह का हिस्सा महसूस करता/करती हूँ। I really feel like part of a team with my partner.		0.50		
Q 28.	पूर्ण 5 4 3 2 1 0 रिक्त FULL 5 4 3 2 1 0 EMPTY			0.78	
Q 30.	प्रबल 5 4 3 2 1 0 नाजुक STURDY 5 4 3 2 1 0 FRAGILE			0.71	
Q 26.	रोचक 5 4 3 2 1 0 उबाऊ INTERESTING 5 4 3 2 1 0 BORING			0.70	
Q 32.	सुखद 5 4 3 2 1 0 दुखद ENJOYABLE 5 4 3 2 1 0 MISERABLE			0.64	
Q 1.	सभी पहलुओं को ध्यान में रखते हुए, आप अपने रिश्ते से कितने खशु है: अत्यंत अप्रसन्न(0) काफि अप्रसन्न(1) थोड़ा अप्रसन्न(2) प्रसन्न(3) बहुत प्रसन्न(4) अत्यंत प्रसन्न(5) उत्तम(6) Please indicate the degree of happiness, all things considered, of your relationship. Extremely Unhappy (0) Fairly Unhappy (1) A Little Unhappy (2) Happy (3) Very Happy (4) Extremely Happy (5) Perfect(6)			0.54	
Q 29.	एकाकी 0 1 2 3 4 5 दोस्ताना LONELY 0 1 2 3 4 5 FRIENDLY				0.90

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Q 27.	बुरा 0 1 2 3 4 5 अच्छा BAD 0 1 2 3 4 5 GOOD				0.88
Q 31.	हतोत्साहित 0 1 2 3 4 5 आशावादी DISCOURAGING 0 1 2 3 4 5 HOPEFUL				0.88
	Eigen value	14.71	3.48	1.28	1.19
	Percentage of variance	45.98	10.87	3.99	3.70
	Cumulative percentage	45.98	56.86	60.85	64.55

Confirmatory factor analysis (CFA)

Confirmatory factor analysis (CFA) was performed to test the Goodness of fit of four-factor model using maximum likelihood estimation (MLE). By looking at the error terms suggested by modification indices and what makes sense theoretically, CFA confirmed four-factor model of CSI-32 that fit well within an acceptable range of model fit (see figure 2 and table 2). The significant chi square ($\chi2$) value was 2.57 (df= 452; p> 0.01) and the goodness of fit index (GFI) was 0.81, indicating that the overall model fit is satisfactory. Absolute fit indices: root mean square error of approximation (RMSEA) was 0.07, and standardized root mean square residual (SRMR) was 0.05. The incremental fit index (IFI) was 0.90, comparative fit index (CFI) was .90, and Tucker Lewis Index (TLI) was 0.89 and the parsimony normed fit index (PNFI) was 0.77. Thus, the results of CFA supported and verified the four-factor model of CSI-32 and demonstrated good construct validity in the questionnaire.

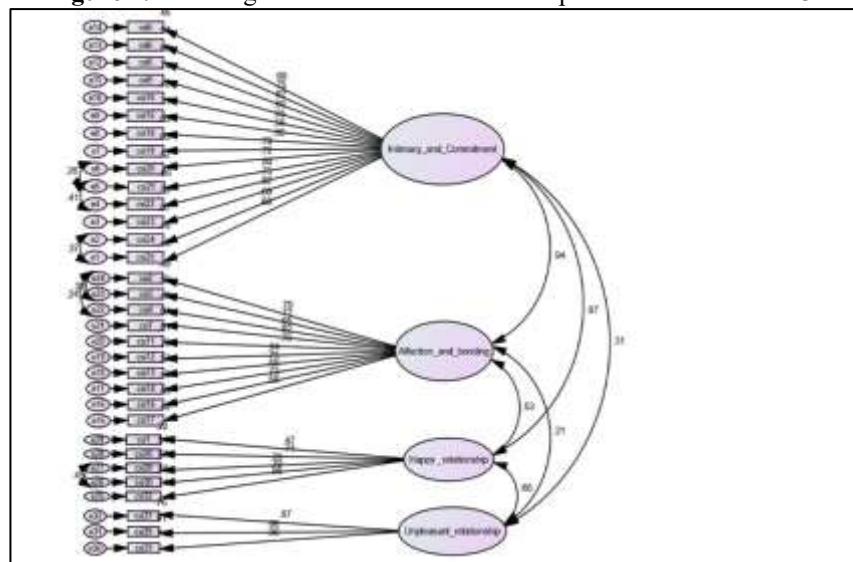**Figure 2.** Path diagram of Hindi version of Couple Satisfaction Index-32

Table 2: Results of Confirmatory factor analysis of four-factor model of Couple Satisfaction Index-32

Fit indices	x^2 / df	CFI	GFI	TLI	RMSEA	SRMR	IFI	PNFI
Four-factor model	2.57	0.90	0.81	0.89	0.07	0.05	0.90	0.77
Recommended values	≤5 (Wheaton et al., 1977)	≥.90 (Hu & Bentler, 1999)	≥.80 (Byrne & Campbell, 1999)	≥.80 (Hu & Bentler, 1999)	≤.08 (Hair et al., 1998)	≤.08 (Hu & Bentler, 1999)	≥.90 (Hair et al., 1998; Hu & Bentler, 1999)	≥.50 (Hu & Bentler, 1999)

Table 3: Results of reliability value of four factor of Couple Satisfaction Index (CSI)

Factors	Cronbach's alpha
1. Intimacy and commitment	0.95
2. Affection and bonding	0.92
3. Happy relationship	0.83
4. Unpleasant relationship	0.92
Total (CSI-32)	0.96

Internal consistency

The reliability of the scale was checked by Cronbach's alpha to indicate internal consistency in CSI-32 (Table 3). The Cronbach alpha value of the full scale was 0.96, which was very high and indicated excellent internal consistency.

Cronbach alpha of all four factors of Hindi CSI-32 was 0.95, 0.92, 0.83, and 0.92, respectively, for intimacy and commitment, affection and bonding, happy relationship, and unpleasant relationship, reporting good internal consistency (Bland & Altman, 1997).

DISCUSSION

The objective of the present study was to translate the CSI-32 into the Hindi language and analyze its psychometric properties. A rigorous method of translation and back translation was followed to adapt CSI from English to Hindi (WHO, 2018). The findings of EFA on 300 married men and women revealed four-factor structures in the Hindi version of CSI-32. The factor loadings of all the items are in acceptable values ranging from 0.50 to 0.90 (Hair et al., 1998; Stevens, 2002). The results of CFA showed that all the values of model fit indices are satisfactory and acceptable, which is consistent with the previous study (Forouzesh Yekta et al., 2017). Therefore, CFA results supported the four dimensions of the Hindi version of CSI-32. The results of reliability analyses show that Cronbach's alpha value of full scale (CSI-32) and its subscales (four factors) are very high, indicating strong internal consistency in the Hindi version of CSI-32. These findings are also consistent with the findings of the original English and Persian versions of CSI-32 (Forouzesh Yekta et al., 2017; Funk & Rogge, 2007).

Moreover, findings pointed out that four structures in the Hindi version of CSI-32 together explained 64.55 % of the variance in the model and dimensionally shared variance about 45.98 %, 10.87 %, 3.99 %, and 3.70 % of the variance, respectively, which are somewhat similar to the four factors of the Persian version of CSI-32 scale (Forouzesh Yekta et al., 2017). These four factors of CSI-32 in Hindi are intimacy and commitment, affection and bonding, happy relationships, and unpleasant relationships. Name labeling of four factors is according to the items that measure the different aspects of marital relationships. Intimacy and commitment refer to mutual communication between spouses, shared goals, and fulfilling needs. Affection and bonding are spending quality time, closeness in a relationship, love, care, and trust for one another. A happy relationship is conceptualized as happiness, enjoyable company, and fulfillment. An unpleasant relationship refers to disappointment, loneliness, and a discouraging relationship.

The findings of factor structures of CSI-32 are in line with a study in which four factors are observed in the CSI-32 scale for the Persian couple (Forouzesh Yekta et al., 2017). These are labeled as marital happiness, the warmth of a relationship, being together, and the right choice. A review of previous studies has shown that in the original CSI-32 and the Korean version of the CSI-32 scale, only one-factor structure is found, which is inconsistent with the findings of the present study (Funk & Rogge, 2007; Kim et al., 2022). Korean version of CSI-32 was administered to couples only, which may possibly act differently than the sample of individual married men and women (Kim et al., 2022). Furthermore, the original CSI-32 study sample was the US population, which is very different in cultural and ethnic values than the Indian population (Funk & Rogge, 2007). For instance, in the US, individualism and personal freedom are highly valued, while in India, collectivism and family ties are more important. These cultural differences may make the difference in findings related to factor structures of CSI-32.

The present study demonstrates the promising results of four-factor structures and good psychometric properties of the Hindi-version of CSI-32, which indicate that this scale can be used confidently in research of marriage and family relations in India. Various factors determine marital relations and satisfaction. The unifactor model can be applied to multifactor phenomena, but a multidimensional model is a more appropriate measure to explain the various factors and impact of the phenomena. Findings of the four-factor structures can be a more appropriate and valuable tool to measure different aspects of quality relations in marital life (intimacy and commitment, affection and bonding, happy relationship, and unpleasant relationship) than unifactorial measure. The present study will benefit mental health professionals and marriage counselors in assessing couples' relationship satisfaction in hospitals and other centers. This CSI-32-Hindi version also fosters the research of couples and family relations in India to measure the Hindi-speaking population for both clinical and non-clinical purposes. Despite the present study's practical implications, it also has some limitations. The sample size is small, which limits the generalizability of the scale, and the sample was collected from different districts of Uttar Pradesh, India. So, future studies should include a larger population with other Hindi-speaking regions.

CONCLUSION

The Hindi version of the CSI-32 scale is a valid and reliable tool for measuring marriage satisfaction. Findings of the four-factor structure demonstrated that satisfaction is a multidimensional phenomenon, which can be measured appropriately with a multifactor test in the Hindi-speaking region. Findings support that the adapted Hindi version of CSI-32 has good psychometric properties and high internal consistency, which supports the four-factor structures of the Couple Satisfaction Index (CSI-32) to assess the couple's relationship satisfaction. However, future research should include large samples with Hindi-speaking regions to enhance psychometric characteristics and scale generalizability.

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