



# Psychometric Properties of the Interpersonal Emotion Regulation Questionnaire Among Couples in India

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## Abstract

The aim of the present study was to translate the Interpersonal Emotion Regulation Questionnaire (IERQ) into the Tamil language and examine its psychometric properties in the Indian cultural context. Data were collected from a dyadic sample of 340 married heterosexual couples ( $N = 680$ ) currently residing in India. The mean age of husbands was 39.57 ( $SD = 6.10$ ;  $26 \geq \text{range} \leq 58$ ), and the wives' was 35.33 ( $SD = 5.72$ ;  $23 \geq \text{range} \leq 54$ ). Descriptive results indicated that husbands and wives reported similar levels of interpersonal emotion regulation. Confirmatory factor analysis showed a 20-item model with four factors—enhancing positive affect, perspective-taking, soothing and social modeling, similar to the original version, fits the data well. Furthermore, the multiple-group analysis indicated robust measurement invariance across gender (husbands vs. wives), family type (joint vs. nuclear) and marriage type (arranged vs. love), indicating that the Tamil version of the IERQ operates similarly across these groups. Besides, the Tamil version of the IERQ showed good convergent and discriminant validity with measures of dyadic coping and relationship satisfaction. Implications for research and couples therapy in the Indian cultural context are discussed.

## Keywords

interpersonal emotion regulation, marital relations, India, non-Western culture

Emotion regulation is defined as the “extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one’s goals” (Thompson, 1994, p. 27–28). Effective



emotion regulation has been a positive predictor of physical health, mental health, and social networks, while emotional dysregulation has been related to several psychological, affective and emotional disorders (Campbell-Sills et al., 2006; Salsman & Linehan, 2012; Werner et al., 2011). Studies have shown that upregulation of positive emotions has a buffering effect on negative events, and poor downregulation is linked to symptoms of anxiety and depression (Carl et al., 2014; Garland et al., 2010). Furthermore, emotion regulation is considered to be influential in personal and interpersonal relationship development (Onat & Otrar, 2010).

## Theoretical Framework of Interpersonal Emotion Regulation

Thompson's (1994) definition acknowledges that emotions can be regulated both intrapersonally through self-regulation and interpersonally through others. However, most research on emotion regulation has focused only on intrinsic aspects of emotion regulation. In contrast, extrinsic aspects of emotion regulation—individuals depending on others to regulate one's own emotion, have not been given sufficient attention (see Hofmann, 2016, for a review; Ray-Yol et al., 2020). In fact, interpersonal aspects are vital in developing intrinsic emotion regulation because emotion regulation skills are acquired within a social context and continue to mature through social interaction throughout life (Hofmann et al., 2016).

Interpersonal emotion regulation refers to the interpersonal contexts in which one's emotions are regulated by others (Hofmann, 2014). The process of regulating emotions involving others is known as Interpersonal Emotion Regulation (IER; Hofmann et al., 2016; Zaki & Williams, 2013). IER emphasizes that the social components and cues are inevitable aspects of how one manages emotion either directly or indirectly. During IER, individuals either use the presence of others to mitigate their distress, or they might involve strategies that change the emotions of others. In line with this approach, Hofmann et al. (2016) proposed a framework for IER, which involves four dimensions; enhancement of positive affect, perspective-taking, social modeling and soothing. Enhancement of positive affect means involvement of others when feeling elated to increase positive feelings (e.g., informing a friend about a successful job interview). Perspective-taking refers to asking for the opinion of others when facing difficult situations or negative emotions (e.g., asking a friend's views about one's break-up decision with the partner). Social modeling refers to imitating the coping and problem-solving tendencies of others (e.g., discussing problems with friends just the way they do), and soothing involves expecting the consolation and compassion of others in dealing with negative emotions (e.g., expecting a hug from one's partner during difficult times).

Comparable with intrapersonal emotion regulation, IER strategies are adaptive as long as they downregulate or upregulate negative emotions (Altan-Atalay & Saritas-Atalar, 2022). However, although interpersonal emotion regulation strategies help deal with emotional distress effectively, inappropriate or overindulgence might indicate vul-

nerabilities for emotional distress. It might indicate inadequate inner sources within oneself for coping with emotionally stressful situations (Hofmann, 2014).

Niven (2017) attempted to differentiate interpersonal emotion regulation from other related processes by emphasizing its four main characteristics. Particularly, interpersonal emotion regulation is illustrated as a (i) deliberate (ii) process of regulating emotions, (iii) that has an affective aim and (iv) has a social reach or target. Niven suggested that given that the abovementioned characteristics overlap with other emotion regulation processes, more research is warranted to identify the distinctive features of IER.

## Measurement of Interpersonal Emotion Regulation

Although IER models proposed by researchers add to the theoretical proficiency and evidence of interpersonal emotion regulation, there was a dearth of psychometrically validated measures (Hofmann et al., 2016). Niven et al. (2011) developed an instrument that measures emotion regulation strategies of others and self (Emotion Regulation of Others and Self; EROS). EROS aims to measure intrinsic (one's own affect) and extrinsic regulation strategies (the other person's affect) to either improve or worsen affect (Niven et al., 2011). However, the scale was weak in assessing the affect-worsening dimension besides showing a weak relationship between affect-improving dimensions and the level of affect experienced individuals. (Hofmann et al., 2016).

In a more recent study, Williams et al. (2018) developed and validated the Interpersonal Regulations Questionnaire (IRQ), consisting of four dimensions: tendency and perceived efficacy of IER for decreasing negative emotions and increasing positive emotions. The authors found that the dimensions of IER are distinct and can be stably measured and separated from related constructs, and IER has implications for relationships and well-being (Williams et al., 2018). While IRQ help assesses the intrinsic IER style (the tendency for regulating positive and negative emotions) of an individual, the specific IER strategies (e.g., social modeling) are not tapped.

Most of the constructs and measures of IER have focused on how individuals regulate others' emotions (Niven et al., 2011), highlighting the regulation of one's own emotions through the use of others was not emphasized in the previous models. To that end, Hofmann et al. (2016) developed and validated a brief self-report measure of IER in the English language—Interpersonal Emotion Regulation Questionnaire (IERQ). The scale consists of 20 items accounting for four factors—enhancement of positive affect, perspective-taking, social modeling and soothing, assessing intrinsic interpersonal emotion regulation. Hofmann et al. (2016) found that IERQ is a psychometrically sound measure. To date, besides the English version, IERQ was translated and validated in three languages: Turkish (Koç et al., 2019), Persian (Lotfi et al., 2020), German (Pruessner et al., 2020), and Farsi (Soleimani et al., 2018). Among all these validation studies, except for the Persian validation (Lotfi et al., 2020), all other studies replicated the four-factor structure originally proposed in the original paper (i.e., Hofmann et al., 2016), while Lotfi

et al. (2020) reported a three-factor solution for their validation. Considering the cultural differences in the use of emotion regulation strategies, the need for cultural validations of IERQ in various cultures assumes importance (Hofmann et al., 2016; Sarısoy-Aksüt & Gençöz, 2020).

## IER in Couples

Emotional exchanges among couples are powerful indicators and predictors of marital quality and stability (e.g., Butler, 2011). Several constructs of emotional interdependence—conceptually similar to interpersonal emotion regulation among couples, have been examined in the literature. For example, *Reciprocity* refers to the mutual exchange of emotions (Levenson & Gottman, 1983). In contrast, *Emotional Transmission* refers to the transmission of emotional states from one partner to the other (Thompson & Bolger, 1999). *Emotional synchrony* refers to the concurrent covariation of emotion between partners (Butler, 2011; Papp et al., 2013), “Coregulation refers to the process by which relationship partners form a dyadic emotional system involving an oscillating pattern of affective arousal and dampening that dynamically maintains an optimal emotional state” (Butler & Randall, 2013, p. 202). These emotional interdependencies are considered healthy in couple relationships as it helps couples manage their actions, thoughts and views, for responding to situations collectively and improve “mutual understanding and feeling validated by the partner, promoting social cohesion, attraction, and sympathy” (Sels et al., 2016, p. 2). Previous studies have demonstrated that depending on the partner for regulating emotions could lead to positive marital outcomes such as relationship well-being and coping (Rusu et al., 2018, 2019) and satisfaction (Sels et al., 2016). However, it is worth noting that although long term usage of emotional interdependence among partners has resulted in better marital outcomes, high interdependence between negative affect can be unfavorable in couple relationships (Gottman, 1998) and could result in marital dissatisfaction when partners display increased negative mood states (Saxbe & Repetti, 2010). Given the significance of interpersonal emotional regulation among couples, in the present study, we validated the Tamil version of the IERQ among married couples in India, as well as examined the IER strategies among the couples.

## The Cultural Context of India

India is considered one of the collectivistic countries in the world. In India, marriage is considered the union of two families and not just the two individuals (Joshi et al., 2017). Indian families emphasize the importance of family commitment for every member, and the well-being of others is as important as one’s own (Fajans, 2006). Culture plays a vital role in determining how a person perceives and engages in emotion regulation. Cultural norms and values across Western and non-Western cultures influence much of our beliefs about emotion. (Qu & Telzer, 2017). While in collectivistic cultures such as

India (Chadda & Deb, 2013), a person's dependency on others and the social system is more valued, independence and autonomy are preferred in individualistic cultures, which could in many ways make a differential impact on emotional regulations across cultures (Gökdağ et al., 2019). Fonseca et al. (2018) reported that in collectivistic cultures, the expression of emotions—particularly negative ones—to their romantic partners is avoided to not impose an excess burden on them.

In contrast, expressing emotional distress to a partner or others in an acceptable manner is considered necessary in individualistic cultures because of the support necessary for the person (Cutrona & Russell, 2017; Zhang et al., 2014). A few studies that explored the link between emotional exchange and marital outcomes among couples in India reported that positive emotional exchange helps enhance marital well-being and quality daily emotion regulation (Fonseca et al., 2018; Joshi & Thingujam, 2009; Randall et al., 2011). Another dimension that assumes emotional exchange among couples in India is the patriarchal family structure (Soohinda et al., 2018). Vazhappilly and Reyes (2018) found that husbands are control-oriented and engage in interactions /arguments while wives are more community-oriented and withdraw or prevent themselves from conflict circumstances. Given these cultural intricacies in emotional dependence and interaction among couples in India, the present study examined whether the IERQ developed in the Western cultural context would be valid in the Indian cultural context.

## The Goals of the Current Study

The cultural contexts in psychological assessment cannot be ignored, given that psychological research and knowledge base are globalized (Byrne et al., 2009). Existing cross-cultural literature on several psychological processes has shown that even the basic psychological processes such as visual perception, spatial reasoning, and moral reasoning do not always replicate in other countries or cultural contexts (see Henrich et al., 2010 for review).

Given the wide cultural gap in marriage and marital relationships across Indian and Western cultural contexts, there is a need for a culturally validated measurement instrument to assess the interpersonal emotion regulation strategies among couples in India. The overarching aim of the present study was to translate the IERQ into Tamil language (IERQ-T) and examine its psychometric properties. Specifically, the present study aimed:

1. To translate the IERQ into Tamil.
2. To examine the factor structure of IERQ-T.
3. To examine the measurement invariance properties of the Tamil version of the IERQ across the dyads (dyadic invariance; husband vs. wife), type marriage (love vs. arranged) and type of family (nuclear vs. joint) was examined.

4. To examine the construct validity and reliability of the translated version with dyadic coping and relationship satisfaction measures.

We hypothesized that in line with the original validation of the IERQ, the IERQ-T would demonstrate a 20 item, four-factor structure. In line with previous research involving married couples in India (Kanth et al., 2021), we expected that IERQ-T would demonstrate measurement invariance across dyads, type of marriage and family. In accord with previous validations of IERQ-T (e.g., Ray-Yol et al., 2020), we expected that IERQ-T would demonstrate construct validity with dyadic coping and relationship satisfaction.

## Method

### Participants

The data used in the present study were collected as part of a larger study on the dynamics of couple relationships in India. Married heterosexual couples residing together in India for a minimum of one year were recruited from a few towns of Tamil Nadu and Pondicherry regions in southern India. The Institute Ethics committee of the university approved the study. Participants were recruited by circulating flyers in schools, organizations, residential apartments and posting the invitation on social media. Research assistants contacted the interested participants and handed over an envelope containing 1) two sets of the questionnaire for husbands and wives, 2) two sealable envelopes for the questionnaire 3) self-addressed and stamped envelopes for participants who wish to return the questionnaire via post. Participants signed the consent forms before filling out the questionnaires. After filling out the questionnaires, participants either mailed the questionnaire booklet using the self-addressed envelope or handed over the booklet personally to the research assistants. Upon completing the questionnaires, each participant received a gift voucher worth Indian Rupees 75 ( $\approx$  1 USD) as compensation for participation.

### Variables and Instruments

#### Interpersonal Emotion Regulation Questionnaire

The Interpersonal Emotion Regulation Questionnaire (IERQ; Hofmann et al., 2016) is a 20-item scale to measure emotion regulation in interpersonal relationships using four subscales: enhancing positive affect, perspective taking, soothing, and social modeling. The responses of the items are noted on a 5-point rating scale (1 - *not true for me at all*; 2 - *a little bit*; 3 - *moderately*; 4 - *quite a bit*; 5 - *extremely true for me*). Items in the sub-scale are summed to arrive at a sub-scale score. The reliability of the subscales in the original study ranged from .89 to .93. All the 20 items are summed to get an overall IER score. In the present study, IERQ in English was translated into Tamil—a largely

spoken language in southern India and South Asia by over 76 million people, and an official language in India, Sri Lanka and Singapore (Lewis, Simons, & Fennig, 2009)—by a native bi-lingual expert and verified by a faculty in Psychology conversant in Tamil and English languages. After slight modifications in certain items, the Tamil version was back-translated into English by another expert and checked again for similarity. The final Tamil version was approved by all the experts involved in the translation process. In the present study, the alpha values for the subscales ranged from .72 to .83, and the alpha for the overall scale was .76.

### Dyadic Coping Inventory

The Dyadic Coping Inventory (DCI; Bodenmann, 2008) measures the dyadic coping (DC) behaviors between partners when both or one of them is experiencing stress. Particularly, it measures the couples' self-report of his/her own and their partner's behavior and common dyadic coping during the experience of a common stressor. In the present study, we used a Tamil version of the DCI (Kanth et al., 2021), which consists of 29 items on five dimensions reported by oneself and the partner: positive DC, delegated DC, negative DC and common DC. The items are rated on a 5-point scale ranging from 1 ("very rarely") to 5 ("very often"). The total DC score is the sum of items 1 through 29. The reliability of the original scale was 0.92 for husbands and 0.91 for wives. In the present study, the alpha values for the subscales ranged from .52 to .81, and the alpha for the Total DC was .74.

### Relationship Assessment Scale

The Relationship Assessment Scale (RAS; Hendrick et al., 1998) is a 7-item, unidimensional scale that assesses the satisfaction in the relationship. The responses are rated on a 5-point rating scale ("low satisfaction to high satisfaction"). Two items were reversed scored and then summed for a total score. The score ranges from 7-35. Higher scores in the RAS denote higher levels of satisfaction in the relationship. The internal consistency of the RAS in the original study was found to be .86. In the present study, we used the Tamil version of the RAS translated and validated in an earlier study (Kanth et al., 2021). The alpha value of the RAS in the present study was .71.

### Procedure

Of the 370 heterosexual couples who volunteered to participate in the study, 351 couples returned the questionnaire booklet. After removing the incomplete responses (one of the spouses did not fill out the questionnaires), we retained responses from 340 couples ( $N = 680$ ). The age of the participants ranged from 23 to 54. The mean age of husbands was 39.57 ( $SD = 6.10$ ), and the wives' mean age was 35.33 ( $SD = 5.72$ ). At the time of marriage, the age of participants ranged between 18 and 38 years old, with husbands ( $M = 39.57$ ;  $SD = 6.10$ ) older than wives ( $M = 35.33$ ;  $SD = 5.72$ ). The average years of marriage for the couple was 11.84 ( $SD = 4.91$ ), ranging from five years to 38 years. Most

couples had an arranged marriage (70%), and 60% lived in a nuclear family. Most of the participants (89%) reported being in the middle-income category. Moreover, three-fourth of the husbands and wives were educated (degree or professional degree), and 50% were employed in the private sector. More than half of the couples' career status were dual-career couples (55%), followed by the husband as the sole breadwinner of the family (44%). The two potential covariates—age and years of marriage—did not significantly correlate with any of the study variables; hence, they were not included in the analysis.

## Data Analysis

### Factorial Structure

Data analysis for the study was carried out using IBM SPSS version 19 and AMOS version 19 (Arbuckle, 2010). To test the best fitting model, confirmatory factor analysis was performed separately for husbands, wives, and the overall sample. The robust maximum likelihood estimator to handle the non-normality of the data was used. We used the following cut-off values by Hu and Bentler (1999) for the fit indices: CFI  $\geq$  .95, RMSEA  $\leq$  .08, and SRMR  $\leq$  .08.

### Measurement Invariance

Measurement Invariance (MI) was determined for interpersonal emotion regulation questionnaire across the dyad (dyadic invariance; husbands vs. wives), type of family (joint vs. nuclear) and type of marriage (love vs. arranged). The multiple group CFA model (Vandenberg & Lance, 2000) was employed to test the configural, metric, scalar and uniqueness invariance. First, we examined configural invariance in the model—the factorial structure and the items loaded onto them were equivalent across groups with no equality constraints imposed, using the cut-off values recommended by Hu and Bentler (1999) for the fit indices: CFI  $\geq$  .95, RMSEA  $\leq$  .08, and SRMR  $\leq$  .08. The establishment of configural invariance would indicate that the factor structure of the IERQ-T is equivalent across the comparison groups. Second, we tested the metric invariance by imposing equality constraints on factor loadings on all items across groups (Brown, 2015). Metric invariance would indicate that the items have a similar meaning across groups, attributed to the item's equal level of salience across groups. Next, we tested scalar invariance by constraining intercepts and factor loadings to be equal across groups (Brown, 2015). Scalar invariance would indicate similarity of means of the items across groups and thus permit mean level comparisons. Finally, uniqueness invariance (residual invariance) was examined by constraining the residual variances equal across groups and constraining loadings and intercepts. Uniqueness invariance would indicate that the explained variance of the items is similar across groups. The cut-off values by Chen (2007) were used to evaluate metric, scalar and unique invariance models across groups:  $\Delta$  SRMR  $\leq$  .030,  $\Delta$  CFI  $\leq$  .010, and  $\Delta$  RMSEA  $\leq$  .015 ( $N > 300$ ).



## Construct Validity

To establish the construct validity of IERQ-T, correlations between subscales of the IERS-T, DCI and relationship satisfaction scores were analyzed.

# Results

## Descriptives

Table 1 presents the descriptive statistics, reliabilities and *t* values of the IERQ-T dimensions across couples. Given that the dataset is dyadic and non-independent, we used a paired-samples *t*-test to examine differences in IER across the couples. Husbands and wives showed similar levels of IER. The internal consistency of the IERQ-T dimensions ranged from  $.72 \leq \alpha \leq .83$  across gender. Similar comparisons of IERQ-T and its dimensions scores were employed across the type of marriage and the type of family, but no differences were found.

**Table 1**

*Descriptive Statistics, Reliabilities, and Mean Differences on IERQ-T*

Factor	Total		Husbands			Wives			Paired <i>t</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	$\alpha$	<i>M</i>	<i>SD</i>	$\alpha$	<i>t</i>	<i>p</i>
Enhancing Positive Affect	17.43	4.51	17.42	4.56	.79	17.44	4.73	.78	.07	.96
Perspective Taking	14.94	4.30	15.16	4.31	.72	14.71	4.28	.72	1.74	.18
Soothing	13.10	5.16	12.99	5.12	.83	13.20	5.20	.83	.77	.60
Social Modeling	14.95	4.52	14.92	4.58	.75	14.99	4.48	.74	.27	.84
Total IER	60.42	15.41	60.34	15.30	.91	60.49	15.53	.91	.17	.90

*Note.* Paired *t* = Paired sample *t*-test for differences between husbands and wives.

## Factor Structure

We tested the factor structure proposed in the original English version of the IERQ (Hofmann et al. 2016)—a four-factor, 20 item model. We ran separate CFA models across husbands, wives and combined datasets. All these models showed a good fit to the data (see Table 2 and Figure 1).

**Table 2**

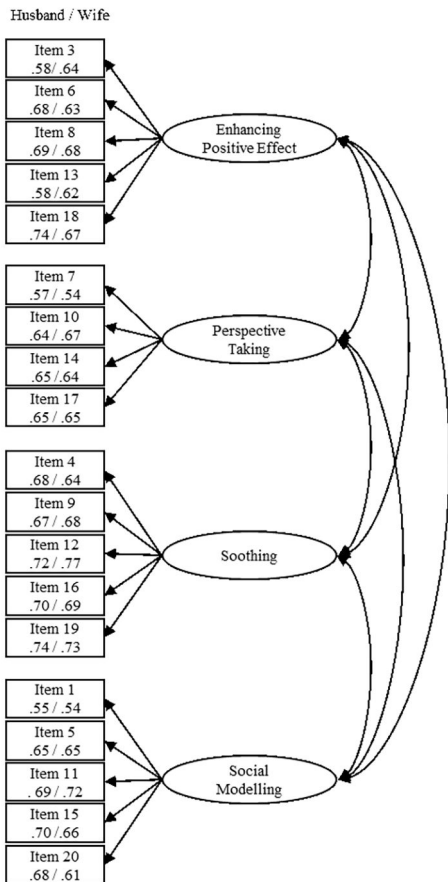
*Fit Indices for CFA Model 1 of IERQ-T for Women and Men*

Model 1	Item	$\chi^2$	df	CFI	SRMR	RMSEA [90% CI]	p
Wives (N = 340)	20	394.96	164	.908	.059	.064 [.056, .073]	< .001
Husbands (N = 340)	20	355.30	164	.926	.055	.059 [.050, .067]	< .001
Combined (N = 680)	20	597.19	164	.915	.054	.062 [.057, .068]	< .001

*Note.* df = degrees of freedom; CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; 90% CI = 90% confidential interval.

**Figure 1**

*Four-Factor Structure of the IERQ-T*



## Measurement Invariance

Measurement invariance analysis was conducted for the data across the dyad (husband and wife), marriage type (love and arranged) and type of family (nuclear and joint) across gender. Measurement invariance analysis across the dyads (340 couples;  $N = 680$ ) showed full configural, metric, scalar and unique variance (see Table 3). Thus, the results indicate that husbands and wives respond to IERQ-T similarly.

**Table 3**

*Model Indices for Dyadic Invariance Across the Couples*

Invariance types	Goodness-of-fit indices					Comparison of nested model						
	$\chi^2$	<i>df</i>	CFI	SRMR	RMSEA	Contrast	$\Delta \chi^2$	$\Delta df$	$\Delta$ CFI	$\Delta$ SRMR	$\Delta$ RMSEA	<i>p</i>
1. Configural	2447.51	1384	.914	.056	.034							
2. Metric	2462.74	1416	.915	.056	.033	2 vs 1	15.23	32	.001	.000	.001	.10
3. Scalar	2514.58	1456	.914	.056	.033	3 vs 2	51.84	40	.001	.000	.000	.01
4. Uniqueness	2552.99	1516	.916	.057	.032	4 vs 3	38.41	60	.002	.001	.000	.99

*Note.*  $N = 680$ ; *df* = degrees of freedom; CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; DC = dyadic coping;  $\Delta \chi^2$  = chi-square difference test.

## Across Type of Marriage

Table 4 shows that the four-factor structure for IERQ-T indicated full configural, metric, scalar and unique invariance across love and arranged married couples. These results show that love and arranged married couples in India similarly respond to the IERQ-T.

**Table 4**

*Model Indices for Measurement Invariance Across Type of Marriage*

Invariance types	Goodness-of-fit indices					Comparison of nested model						
	$\chi^2$	<i>df</i>	CFI	SRMR	RMSEA	Contrast	$\Delta \chi^2$	$\Delta df$	$\Delta$ CFI	$\Delta$ SRMR	$\Delta$ RMSEA	<i>p</i>
1. Configural	859.33	328	.898	.057	.049							
2. Metric	874.01	344	.898	.061	.048	2 vs 1	14.68	16	.000	.004	.001	.55
3. Scalar	896.07	364	.898	.061	.047	3 vs 2	22.06	16	.000	.000	.001	.34
4. Uniqueness	960.70	384	.889	.068	.048	4 vs 3	64.63	20	.009	.007	.001	.06

*Note.*  $N = 680$ ; Love = 223; Arranged = 443; Missing = 14. *df* = degrees of freedom; CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; DC = dyadic coping;  $\Delta \chi^2$  = chi-square difference test.

## Across Type of Family

Table 5 shows the results of the multiple group analysis employed across couples from nuclear and joint families. The results indicate the establishment of measurement invariance across the groups, indicating similar levels of endorsement of IERQ-T by couples from nuclear and joint families in India.

**Table 5**

*Model Indices for Measurement Invariance Across Type of Family*

Invariance types	Goodness-of-fit indices					Comparison of nested model						
	$\chi^2$	<i>df</i>	CFI	SRMR	RMSEA	Contrast	$\Delta \chi^2$	$\Delta df$	$\Delta CFI$	$\Delta SRMR$	$\Delta RMSEA$	<i>p</i>
1. Configural	876.82	328	.894	.064	.050							
2. Metric	891.97	344	.894	.067	.049	2 vs 1	15.16	16	.000	.003	.001	.51
3. Scalar	915.53	364	.893	.067	.048	3 vs 2	23.56	20	.001	.000	.001	.26
4. Uniqueness	944.25	384	.892	.069	.047	4 vs 3	28.72	20	.001	.002	.001	.09

*Note.* *N* = 680; Nuclear = 402; Joint = 267; Missing = 11. *df* = degrees of freedom; CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; DC = dyadic coping;  $\Delta \chi^2$  = chi-square difference test.

## Construct Validity

Table 6 shows intercorrelations among the subscales of IERQ-T as well as the correlation coefficients of the IERQ-T subscales with subscales of dyadic coping and relationship satisfaction. Intercorrelations among the dimensions ranged from  $.38 \leq r \leq .76$ . The IERQ-T subscales showed positive correlations with dyadic coping and relationship satisfaction across husbands and wives except for the negative relationship between enhancing positive affect and negative dyadic coping. However, social modeling and perspective taking did not correlate with negative dyadic coping ( $.00 \leq r \leq .07$ ), while soothing showed a positive relationship. These results indicate that the IERQ-T subscales show convergence with positive coping mechanisms among couples and relationship satisfaction. However, IERQ-T subscales are either not associated (perspective-taking with negative dyadic coping) or negatively related (enhancing positive affect with negative dyadic coping) with negative aspects of dyadic coping. Together, these results indicate convergent and divergent properties of the IERQ-T with other constructs of couple relationships.

**Table 6***Correlations of the IERQ-T Subscales with Dyadic Coping and Relationship Satisfaction*

Variables	1	2	3	4	5	6	7	8
1. Enhancing Positive Affect	.47**	.58**	.38**	.58**	.42**	.30**	-.17**	.24**
2. Perspective Taking	.55**	.40**	.68**	.76**	.29**	.16**	.02	.20**
3. Soothing	.40**	.72**	.36**	.64**	.11*	.05	.16**	.09
4. Social Modelling	.54**	.74**	.58**	.44**	.32**	.21**	-.01	.20**
5. Positive dyadic coping	.45**	.24**	.11*	.28**	.64**	.74**	-.36**	.41**
6. Common dyadic coping	.35**	.16**	.02	.20**	.75**	.69**	-.30**	.40**
7. Negative dyadic coping	-.17**	.07	.14*	.00	-.35**	-.33**	.70**	-.21**
8. Relationship Satisfaction	.12*	.14*	.03	.14**	.43**	.41**	-.19**	.49**

Note. Husbands' correlations are presented above the diagonal, and wives' correlations are presented below the diagonal. Coefficients presented diagonally are the correlation between husbands and wives on the same variables.

\*\* $p < .01$ . \* $p < .05$ .

## Discussion

Existing research on emotion regulation is extensive and impressive, but a shortage exists in research on emotion regulation strategies used by couples (e.g., Butler & Randall, 2013). Hofmann et al. (2016) developed and validated a questionnaire to assess the interpersonal emotion regulation process to address this gap. The authors emphasized the role of cultural context and argued that interpersonal emotion regulation techniques and social norms/expectations have a potential relationship. Given this background, the aim of the present study was to translate and establish the psychometric properties for the Tamil version of the interpersonal emotion regulation questionnaire among married couples in India. Additionally, we examined the measurement invariance of the measure across dyads (husbands and wives), marriage type (love and arranged) and family type (nuclear and joint). The results demonstrated that our assumptions with respect to the factor structure of the IERQ-T and measurement invariance properties across dyads, type of marriage and type of family are supported by the data.

Specifically, the CFA results supported the original factor structure proposed by Hofmann et al. (2016). The final 20-items model with four factors—enhancing positive affect, soothing, social modeling, and perspective-taking—fit the data well. Few studies conducted among students, adults, adolescents and older adults have also reported having established a four-factor model for interpersonal emotion regulation questionnaire (Gökdağ et al., 2019; Koç, et al., 2019; Pruessner et al., 2020; Sarısoy-Aksüt & Gençöz, 2020), which is consistent with the current results.

The multi-group analysis results indicated that the four-factor, 20 items model of IERQ-T showed robust measurement invariance across dyads, type of marriage and

family type. In other words, the factor structure, item loadings, intercepts/means and error variances of the IERQ-T operated similarly across husband and wives, love and arranged married couples and nuclear and joint couples. The current MI results would facilitate future research involving the parameter comparisons (e.g., loading and means) across gender, type of marriage and type of family.

Furthermore, the IERQ-T demonstrated adequate reliability and satisfactory construct validity. The majority of the dimensions of the interpersonal emotion regulation questionnaire had a positive relationship with relationship satisfaction and positive dyadic coping. Given that both IER and dyadic coping imply the involvement and the support of others in the process of managing one's own emotions or coping with one's stress, the association between these two measures indicates convergence of these constructs. However, enhancing the positive effect showed a negative relationship with negative dyadic coping, indicating that the more the couples show positive affect, they tend to report lower negative dyadic coping styles. In line with the original study (Hofmann et al., 2016), enhancing the positive affect subscale has differential relationships with other measures compared to other subscales. Hofmann et al. (2016) argued that this might be because other subscales (perspective-taking, soothing and social modeling) focus on regulating negative emotions.

Although the perspective-taking and social modeling subscales were related to the positive form of dyadic coping, they were not linked to negative dyadic coping. The relationship between soothing and negative dyadic coping demonstrates a similar trend in previous studies. For example, Gökdağ et al. (2019) found that soothing was related to negative emotional states such as depression, anxiety, rumination and catastrophizing. The authors argued that people with a negative emotional state cannot regulate their emotions independently and can find relief by seeking help from someone else, leading them into a vicious circle (Gökdağ et al., 2019). Thus, in the present study, an association between negative dyadic coping and soothing indicates that negative coping efforts among couples might augment more expectations for soothing and comfort from the partner. Furthermore, it is pertinent to note that higher IER scores denote greater dependency on others, while lower scores refer to isolating oneself from others. Hence, Gökdağ et al. (2019) suggested a moderate IER score for a more functional relationship.

Overall, the results show that the Tamil version of the interpersonal emotion regulation questionnaire is a reliable and valid measure to assess how individuals use others to regulate their emotions in a non-Western cultural context such as India.

## Limitations and Future Suggestions

The current study is a pioneering attempt in a) translating and validating a measure of IER on couples, b) using a large dyadic dataset, c) involving participants from a non-Western cultural context. Despite these advantages, our study has certain limitations. Firstly, the measurements used in this study involve self-report data, which could

increase participants' subjectivity and social desirability (Rusu et al., 2019). Future studies might consider using mixed-method design and include qualitative methods to gain a deeper understanding of participants' IER strategies. Secondly, the present study used a cross-sectional design. Future studies might focus on longitudinal variations in IER using appropriate designs (e.g., daily diary) to better understand the IER process in Indian couples. Lastly, since participants were from the general population, the generalization of results to the clinical population needing therapy must be made cautiously. In addition to these, the present study involved only heterosexual couples. However, with the increasing recognition of LGBTQ couples and their rights, future research could focus on their interpersonal emotional dynamics. The present study involved a relatively younger couple ( $M_{\text{age}} = 39$  [men], 35 [women]). Future studies could consider the inclusion of older couples and couples who have been married longer to understand their IER.

## Implications

Extending the principles of emotion regulation to include interpersonal processes and social context offers an interesting perspective in couples therapy and research. The cultural validation of the interpersonal emotion regulation questionnaire in India sheds light on the couples' interpersonal emotion regulation process in the Indian cultural context. The IERQ-T could help more research on the IER process in India and help counselors and family life educators understand the couples' interpersonal aspects of emotional experiences. Specifically, the measure would be useful in identifying the dependency or isolation of a person on others for regulating their emotions and be useful in designing systematic couple distress prevention programs. The results could encourage studies aiming at indigenous development and validation of several marital education programs in the Indian cultural context or cultural validation of existing training programs (e.g., CCET) on marital dynamics among couples.

## Conclusion

The Tamil version of the IERQ proposed in this study represents a basis for evaluating the IER processes among Indian couples. The importance of such cultural validations of the measurement instruments is increasingly emphasized in psychological research. The IERQ-T could be used in future research on emotional processing and emotional regulations among couples in India and help designing individual and couple level interventions.

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