



# Measuring couple quality: psychometric properties of the Turkish version of the couple relationship skills inventory

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## Abstract

The measurement of the health of a romantic relationship from a skills perspective has the potential to provide evidence-based data for therapeutic and research purposes. The Couple Relationship Skills Inventory (CRSI) utilises core relationship skills to predict the quality of a couple's relationship. The present study aim to adapt the CRSI for use in Turkish, and comprised a sample of 715 adults ( $M=32.42$ ,  $SD=7.69$ ). The Multidimensional Romantic Relationship Quality Scale and the Perceived Romantic Relationship Quality Scale were utilised to test convergent validity. The nine-factor model was supported by confirmatory factor analysis (CFA) based on diagonally weighted least squares (WLSMV) estimation method. The internal consistencies of the full inventory and the subscales were satisfactory, as were its test-retest and intraclass correlation coefficient reliabilities. The findings indicate that the Turkish version of the CRSI is a reliable and valid instrument with practical applications in clinical and counselling settings in Türkiye for the evaluation of relationship dynamics and the customisation of couples' interventions. Furthermore, it provides researchers with a culturally adapted instrument with which to investigate these dynamics. The inventory aligns with the collectivist values of Türkiye by focusing on family-centred socializing dynamics and expectations regarding premarital relationships. It is recommended that future studies employ the CRSI in longitudinal research to observe relationship changes or to assess its applicability among various Turkish populations, including sexual minorities and religious communities.

**Keywords** Couple relationship skills inventory · Adaptation · Romantic relationship · Relationship skills · Validity

## Introduction

Romantic relationships are the essential bond established in adulthood (Mikulincer & Shaver, 2010) and are the primary source of closeness, social support, and companionship for many couples (Gurman et al., 2015). However, whether or not romantic relationships meet the couple's stated needs (closeness, social support, and companionship) appears to depend on relationship satisfaction. Relationship satisfaction is a subjective evaluation of happiness and contentment in a romantic relationship (Djundeva & Keizer, 2021), and a satisfying relationship predicts well-being (Bryant & Conner, 2002; Wade & Pevalin, 2004). Furthermore, satisfying

and stable relationships are linked to physical and mental health and longevity (Fincham & Beach, 1999; Hughes & Waite, 2009; South & Krueger, 2013). Conversely, couples with low satisfaction and problematic relationships are reported to be at higher risk of depression (Wang et al., 2017), anxiety disorders (Whisman et al., 2004), and suicide (Till et al., 2016). Notably, approximately 40% of the problems that require psychological support pertain to relationships; this rate is twice that of other issues (Veroff et al., 1981). While satisfaction is a widely used indicator in relationship research, it fails to capture the full range of relational skills that define quality, as individuals may report high satisfaction despite underlying issues like frequent conflicts (Fincham & Beach, 2010). These limitations highlight the need for a comprehensive evaluation of relationship dynamics beyond satisfaction to encompass the skills underlying relationship quality.

Relationship quality covers couples' interaction styles and relational dynamics (Kurt, 2018), offering a broader perspective than satisfaction alone. Subjective satisfaction

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perceptions often fail to reflect correctly the underlying behaviors and interaction patterns that maintain healthy relationships (Fincham & Beach, 2010). Evidence-based data is essential for measuring relationships to evaluate or improve quality, particularly through the assessment of relationship skills. Relationship skills, defined as interpersonal abilities that foster greater intimacy and depth in romantic relationships, include effective communication, emotional support, and conflict management (McKay et al., 2006). Effective skills are crucial as they significantly build stronger relational bonds (Gottman & Silver, 2015). These shortcomings necessitate a skill-based approach that addresses the behaviors and attitudes contributing to making relationships “work,” making such assessments essential for enhancing relationship quality (Adler-Baeder et al., 2022).

The Couple Relationship Skills Inventory (CRSI) was developed by Adler-Baeder et al. (2022) and assesses couples’ romantic relationship skills based on seven key factors: *Self-Care* (promoting subjective well-being such as effective stress management), *Choose* (deliberate prioritization of the relationship such as committing daily effort), *Know* (maintaining intimate awareness of a partner’s world, such as understanding their current stresses), *Manage* (encompassing skills for handling stress and conflict), *Care* (involving nurturing behaviors, such as expressing appreciation to a partner), *Share* (promoting the creation of a couple identity, for instance, by making time to connect daily), and *Connect* (embedding the couple in supportive networks, like relying on friends during a crisis). Unlike many existing relationship assessment tools that primarily focus on satisfaction (*Kansas Marital Satisfaction Scale*; Calahan, 1997), conflict resolution (*Conflict Tactics Scale*; Straus, 1979), or attachment styles (Hazan & Shaver, 1987), the CRSI distinguishes itself through its multifaceted approach to the attitudinal and behavioral skills that foster healthy relationships in daily life. This extensive and integrative method enables a comprehensive understanding of how various skills interact to enhance or hinder relationship quality. Türkiye lacks comprehensive tools for assessing relationship quality from a practical perspective.

Some measurement tools have been developed or adapted to assess relationship quality in Türkiye to evaluate relationships based on skills but only measure relationship quality within marriages (*Marital Quality Scale*; Kurt, 2018, *Marital Adjustment Scale*; Locke & Wallace, 1959, *The Dyadic Adjustment Scale*; Fıçıoğlu & Demir, 2000). The Perceived Romantic Relationship Quality (Sagkal & Ozdemir, 2018) and the Multidimensional Romantic Relationship Quality (Eşici, 2014) scales assess the relationships of all individuals, regardless of marital status. However, these measurement tools only gauge individuals’ general satisfaction and perceptions of the relationship. They do not provide insights

into what contributes to a better and more fulfilling relationship. In other words, there is a need for a skill-based measurement tool with robust psychometric properties that assesses relationship quality in Turkish.

Given the importance of relationship quality in different cultural contexts (Campos et al., 2016; Froidevaux & Campos, 2023), this study addresses a critical gap: the cultural adaptation and validation of a relationship assessment tool. Adapting an instrument is often much cheaper and faster than the initial development process of a measurement tool. It makes comparisons more effective across cultures using the same measurement tool structure (Hambleton & Patsula, 1999). In this context, scale adaptation was preferred over scale development to provide a summary perspective on the problem by adapting the CRSI to Turkish. Moreover, aside from comparison studies, sociocultural norms, values, and relationship expectations may influence relationship skills and their impact on satisfaction and quality (Dion & Dion, 1996; Ge et al., 2022; Kuperberg & Padgett, 2016). Türkiye presents a unique cultural context where traditional values and modern relationship dynamics coexist (Bakır & Haskan-Avcı, 2025), necessitating an investigation into the applicability of the theoretical framework and measurement properties of the CRSI.

The CRSI was primarily designed as part of a couple relationship education program to enhance relationship quality; therefore, it is also suitable for use in psychoeducation programs and clinical settings. Additionally, adapting and validating the CRSI for Turkish couples will enable researchers to explore how culturally specific factors influence relationship skills and outcomes. Based on these requirements, the current study aimed to adapt the CRSI for use in Turkish and examine its psychometric properties to determine whether it is reliable and valid.

## Method

### Participants

The inclusion criteria for the study are: (a) being over 18 years old, (b) being in a couple relationship, (c) being able to read and write Turkish, and (d) being a volunteer. The target number of participants is at least 20 examples per item (Stevens, 2002). A total of seven hundred fifteen people were reached in the study. Although individuals in existing romantic relationships participated, they were not paired as couples; the data were collected from one partner per relationship. The data was gathered from adults aged 18 to 68; 74.4% of the participants were women, and 25.6% were men. Information on relationship length was collected as a self-reported measure in months through the demographic

form. Additionally, a volunteer separate sample is used to calculate the inventory's test-retest reliability, and Table 1 includes this sample's information.

## Measures

### Couple relationship skills inventory (CRSI)

The inventory developed by Adler Beader et al. (2022) assesses behavioral and attitudinal romantic relationship skills across seven core factors, with two additional sub-factors, forming a nine-factor structure: *Self-Care (Empowerment and Healthy Lifestyle subfactors)*, *Choose, Know, Manage (Positive Engagement and Avoiding Aggression subfactors)*, *Care, Share, and Connection*. The inventory's structure was tested using Bayesian CFA, with model fit indices: posterior predictive p-value (ppp)<0.001, Root Mean Square Error of Approximation (RMSEA)=0.043, Bayesian Normed Fit Index (BNFI)=0.920, Bayesian Tucker-Lewis

**Table 1** Participants' demographics

Variable	Main Sample (n=715)	Test Re-test Sample (n=30)
Gender		
Women	532 (74.4%)	14 (46.6%)
Men	183 (25.6%)	16 (53.3%)
Age		
Range	18–68	18–49
M (SD)	32.42 (7.69)	31.83 (7.53)
Relationship type		
Married	394 (55.1%)	6 (20%)
Non-married	321 (44.9%)	24 (80%)
Dating	305 (42.66%)	23 (76.67%)
Cohabiting	3 (0.42%)	1 (3.33%)
Affianced	13 (1.82%)	0 (0%)
Relationship length (months)		
Range	6–444	6–300
M (SD)	85.38 (81.95)	93.67 (87.07)
Parentship status		
Parent	276 (38.6%)	11 (36.7%)
Non-parent	439 (61.4%)	19 (63.3%)
Perceptional SED		
Under average	133 (18.6%)	3 (10%)
Average	447 (62.5%)	24 (80%)
Upper average	135 (18.9%)	3 (10%)
Education		
Primary School	7 (1%)	1 (3.3%)
Secondary School	4 (0.6%)	0 (0%)
High-School	48 (6.7%)	4 (13.3%)
Associate's*	79 (11%)	4 (13.3%)
Bachelor's	399 (55.8%)	13 (43.3%)
Master's	134 (18.7%)	6 (20%)
Doctorate	44 (6.2%)	2 (6.7%)

\*An associate's degree refers to two years of upper-secondary education completed to learn a skill or profession

Index (BTLI)=0.932, and Bayesian Comparative Fit Index (BCFI)=0.949. Latent factor correlations ranged from 0.28 to 0.75, and standardized factor loadings varied from 0.44 to 0.83. Cronbach's alpha coefficient was 0.92 for the full model. On a subscale basis, reliability ranges from 0.71 to 0.87. The inventory consists of 32 items, which are of a 7-point type. The items ranged from *strongly agree* to *strongly disagree* in the *Self-Care, Manage, Know, Connect, and Choose* subscales. For the *Share* and *Care* subscales, responses range from *never* to *more often than once a day*.

### Perceived romantic relationship quality scale (PRRQS)

This scale, adapted to Turkish by Sağkal and Özdemir (2018), measures the quality of couple relationships. Each item in the 6-item, one-dimensional scale corresponds to *Satisfaction, Dedication, Intimacy, Trust, Passion, and Love*. Items were rated on a 7-point Likert-type scale, with the following ranges: 1 = *Not at all*, and 7 = *Always*. The one-dimensional model demonstrated good fit, with Chi-square to degrees of freedom ratio ( $\chi^2/sd$ )=2.55, RMSEA=0.07, CFI=0.99, NFI=0.98, Adjusted Goodness of Fit Index (AGFI)=0.93, Goodness of Fit Index (GFI)=0.97, and Standardized Root Mean Square Residual (SRMR)=0.03. Factor loadings range from 0.49 to 0.84, item-total correlations fall between 0.45 and 0.76, and Cronbach's alpha coefficient is 0.86. In this study, Cronbach's  $\alpha$ =0.881 is calculated.

### Multidimensional romantic relationship quality scale (MRRQS)

It was developed by Eşici (2014) to measure the quality of romantic relationships. It comprises 25 items and six factors: Trust, Passion, Love, Relationship Satisfaction, Commitment, and Intimacy. Items on the 5-point Likert-type scale are answered in the range of 1 = *Never* to 5 = *Always*. The scale demonstrated acceptable fit, with  $\chi^2/sd$ =2.00, RMSEA=0.054, GFI=0.89, Root Mean Square Residual (RMR)=0.05, CFI=0.94, and NFI=0.89. Cronbach alpha reliability coefficient values of the factors are Relationship Satisfaction  $\alpha$ =0.81, Commitment  $\alpha$ =0.86, Trust  $\alpha$ =0.83, Intimacy  $\alpha$ =0.87, Passion  $\alpha$ =0.87, and Love  $\alpha$ =0.72. The factor loadings of the items belonging to the factors vary between 0.50 and 0.82, 0.65 and 0.83, 0.45 and 0.68, 0.63 and 0.88, 0.53 and 0.88 and 0.57 and 0.84, respectively. Cronbach  $\alpha$ =. 962 is calculated in this study.

### Translation and cross-cultural adaptation

First, permission for adaptation was obtained from the inventory's developers (Adler-Baeder et al., 2022). The inventory's translation and cross-cultural adaptation were

carried out according to the translation guide by Beaton et al. (2007; 2000).

### Stage 1: forward translation

Two researchers, native Turkish speakers proficient in English, translated the CRSI from English to Turkish. The first translator, with a PhD in English Language and Literature, ensured linguistic accuracy, while the second, with a PhD in Counseling Psychology specialising in romantic relationships, focused on conceptual equivalence and psychotherapy perspective.

### Stage 2: synthesis of the initial translations

Another researcher fluent in both languages evaluated translations from English to Turkish to serve as a mediator in discussions of translation differences. A synthesis of these translations is produced from the original measure and the translations of the first and second translators, resulting in a single common translation. The synthesising translator has a PhD in Counseling Psychology, whose area of expertise is the family system.

### Stage 3: back translation

Back translation provides insights into inconsistencies or conceptual errors, information bias, and unexpected meanings of the items in the translated inventory. The inventory is translated into the original language without referencing the initial version to understand that the translated version accurately reflects the content of the original item. The back translation process increases the possibility of “highlighting the imperfections” (Beaton et al., 2000, 2007). Two independent and different researchers translated the Turkish version of the inventory back into English. One of the translators is an Assistant Professor of English Language Teaching, and the other is an Assistant Professor of Counseling Psychology with expertise in romantic relationships.

### Stage 4: synthesis of the back translations

Another PhD in Counseling Psychology, fluent in English and Turkish, systematically evaluated the two back translations from Turkish to English to resolve any inconsistencies and ensured the grammatical and conceptual equivalence of the original form. This additional step, not included in the original manual suggested by Beaton et al. (2007), was added to increase translation accuracy by addressing differences in linguistic choices, grammatical structures, and cultural nuances. For example, in item 1, the researcher chose the word “strength” instead of “power” to better reflect

mental and physical endurance. By resolving such inconsistencies, this synthesis step strengthened the content validity of the CRSI.

### Stage 5: expert committee

The expert committee, which included the first and second authors, forward and backward translators, translation synthesizers, and the inventory developers, examined the synthesized translations to verify their semantic, idiomatic, experiential, and conceptual equivalence to the original measure. Collaboration occurred via email (reports) or in-person meetings. The development team featured a native Turkish-speaking expert who contributed significantly at this stage. For instance, to ensure semantic equivalence, the developers recommended changing the verb in *Self-Care* item 4 in the Turkish version from “*I manage the stress in my life*” in present simple tense to “*I am able to manage the stress in my life*” in present simple tense and ability meaning for grammatical consistency with other items, a change the committee accepted. Additionally, to achieve conceptual equivalence, the *Share* Subscale item 2 “Engage in and/or talk about outside interests together” was modified, as the term “outside interests” in Turkish did not completely represent interests and experiences unrelated to work or study; alternative phrasing was implemented to address this discrepancy.

### Stage 6: test of the pre-final version

The final stage in the adaptation process incorporated a pre-test to ascertain face validity. Face validity indicates that the instrument appears to be appropriate to the study’s purpose and content. To determine it, an evaluation form is used to assist respondents in assessing each question in terms of the clarity of the wording, the likelihood that the target audience would be able to answer the questions, and the layout and style (Parsian & Dunning, 2009). In this regard, twenty participants in romantic relationships (10 women, 10 men) from the target population completed the inventory, which contained open-ended questions under each item to evaluate the clarity of wording, relevance for Turkish couples, and their comprehension of item meanings and responses by participant feedback. Furthermore, item response distributions were analysed by identifying missing items or uniform answers to ensure face validity by preserving their intended meanings and aligning with the relationship skills construct in practical applications.

### Data collection

Initially, the research adhered to ethical guidelines (Ethics Approval No: 51944218-300). The measurement tools

and informed consent forms were uploaded to an online survey platform. This survey link appeared in the research announcement poster, and participants were recruited via social media, WhatsApp groups, and the university department's website. The announcement indicated that participants who completed the measurement tool could request an informative booklet on couple relationship skills. Booklets were dispatched to those who emailed their requests. Participants supplied only a self-selected nickname and an email address for the test-retest phase to maintain anonymity. The contact information was kept separate from survey responses and linked exclusively by the nickname to protect identities. The test-retest phase was conducted with the same participants at three-week intervals, using nicknames to match responses while ensuring anonymity.

## Data analysis

In the analyses, 0.05 was used as the significance value, and a 95% confidence interval was employed. Missing data and outliers were checked before the data were analysed. Since the measurement tool is collected online with a feature that requires each item to be answered, there is no data loss in the measurement tool. Since the skewness values of the inventory are between  $-2$  and  $+2$  and the kurtosis is between  $-7$  and  $+7$ , the initial measurements were conducted using parametric methods (Byrne, 2013; Hair et al., 2019).

The first measurements of the inventory were made using the maximum likelihood estimation method in SPSS AMOS (26). Model fit was assessed using the chi-square ( $\chi^2$ ), Tucker-Lewis index (TLI), goodness-of-fit index (GFI), normed-fit index (NFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA) (Perry et al., 2015; Sun, 2005). The initial model fit was  $\chi^2/df=4$ , RMSEA=0.065, TLI=0.84, CFI=0.85, GFI=0.85, AGFI=0.83, RMR=0.33. Since model-fit indices, such as CFI, were not within the acceptable range (Hox, 2021; Hu & Bentler, 1999), subsequent analyses employed CFA using the Diagonally Weighted Least Squares (WLSMV) estimation method in the R lavaan package, which is better suited for non-normal data and provides robust estimates in large samples (Brown, 2015).

Data collected from a total sample of 715 participants were used to investigate the validity and internal consistency, employing Cronbach's alpha coefficients for reliability. The data were collected and repeated three weeks later to test-retest reliability with a distinct sample and correlation coefficients were calculated. Its correlations with PRRQS and MRRQS were examined to establish the convergent validity of CRSI. These analyses rigorously assessed the CRSI's factor structure, reliability, and validity to confirm its psychometric robustness.

## Results

### Reliability

Reliability was evaluated using both test-retest analysis and internal consistency. A threshold of  $\alpha \geq 0.70$  was considered acceptable for internal consistency, while  $\alpha \geq 0.80$  was good (Cortina, 1993; Streiner, 2003). Internal reliability was adequate for both the entire CRSI and the subscales (CRSI  $\alpha=0.896$ , *Self-Care*  $\alpha=0.709$ , *Choose*  $\alpha=0.797$ , *Know*  $\alpha=0.88$ , *Manage*  $\alpha=0.708$ , *Connect*  $\alpha=0.744$ , *Share*  $\alpha=0.858$ , *Care*  $\alpha=0.843$ ; Table 4). Test-retest reliability, assessed with a distinct sample of 30 participants separate from the main sample, yielded a Spearman's correlation coefficient of  $r=0.85$ . The test-retest reliability coefficients for the subscales are as follows: *Self-care*  $r_s=0.653$ ,  $p<0.001$ ; *Choose*  $r_s=0.671$ ,  $p<0.001$ ; *Know*  $r_s=0.771$ ,  $p<0.001$ ; *Manage*  $r_s=0.849$ ,  $p<0.001$ ; *Connect*  $r_s=0.827$ ,  $p<0.001$ ; *Share*  $r_s=0.760$ ,  $p<0.001$ ; and *Care*  $r_s=0.644$ ,  $p<0.001$ . In addition, the intraclass correlation coefficient (ICC) of  $ICC=0.92$ , indicating strong temporal stability.

### Validity

First, the suitability of the inventory for factor analysis was investigated. The data's appropriateness for factor analysis was first assessed with the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. KMO values of 0.80 and above are considered very good (Costales et al., 2022). The inventory produced a KMO score of 0.902, reflecting excellent sampling adequacy. Additionally, Bartlett's Test of Sphericity showed statistical significance,  $\chi^2(496)=9,774.73$ ,  $p<0.001$ , indicating adequate correlations among variables for factor analysis.

### Convergent validity

Convergent validity refers to the degree to which a measurement of a construct is substantially and significantly related to other measurements of the same or similar constructs (Cunningham et al., 2001; Duckworth & Kern, 2011). The total score of the CRSI is significantly correlated with the total scores of the PRRQS ( $r=0.693$ ,  $p<0.01$ , Table 2) and the MRRQS ( $r=0.723$ ,  $p<0.01$ , Table 2). In the correlation analysis performed based on subscales, it was found that all subscales, except for *Self-Care* and *Passion* ( $r=0.047$ ), were significantly correlated with one another ( $r=|0.124-0.710|$ ,  $p<0.01$ ; Table 2). Average Variance Extracted (AVE) and Composite Reliability (CR) were calculated to evaluate convergent validity (Table 2) further. While the AVE values for some constructs (e.g., *Manage*) fell below the recommended threshold of 0.50, indicating that these constructs

**Table 2** Correlations between the CRSI subscales and external measures of romantic relationship quality for convergent validity

Scale	AVE	CR	M	SD	Self-Care	Choose	Know	Manage	Connect	Share	Care	R-Quality	R-Satisfy	Commit	Trust	Intimacy	Passion	Love
Self-Care	0.26	0.73	4.31	0.88	1													
Choose	0.49	0.79	5.36	1.06	0.196**	1												
Know	0.66	0.88	5.74	1.01	0.213**	0.498**	1											
Manage	0.32	0.70	4.85	1.08	0.252**	0.470**	0.416**	1										
Connect	0.45	0.76	4.78	1.18	0.187**	0.341**	0.498**	0.255**	1									
Share	0.68	0.86	4.89	1.46	0.261**	0.371**	0.452**	0.418**	0.397**	1								
Care	0.58	0.85	5.38	1.45	0.148**	0.406**	0.458**	0.432**	0.432**	0.711**	1							
*R-Quality	5.61	1.20	0.145**	0.494**	0.509**	0.480**	0.432**	0.594**	0.710**	1								
*R-Satisfy	3.80	0.99	0.221**	0.338**	0.455**	0.470**	0.409**	0.647**	0.647**	0.655**	0.758**	1						
*Commit	3.99	1.02	0.124**	0.475**	0.491**	0.425**	0.461**	0.569**	0.569**	0.683**	0.815**	0.746**	1					
Trust	4.17	0.80	0.162**	0.332**	0.497**	0.387**	0.465**	0.485**	0.485**	0.522**	0.689**	0.713**	0.675**	1				
Intimacy	4.08	0.94	0.158**	0.330**	0.479**	0.431**	0.435**	0.598**	0.647**	0.748**	0.870**	0.737**	0.750**	1				
Passion	3.33	1.05	0.047	0.453**	0.308**	0.438**	0.206**	0.486**	0.564**	0.663**	0.552**	0.648**	0.427**	0.546**	1			
Love	3.85	0.94	0.136**	0.382**	0.475**	0.423**	0.415**	0.590**	0.650**	0.693**	0.735**	0.705**	0.614**	0.779**	0.617**	1		

Note. R-Quality refers to Relationship Quality and represents scores obtained from the Perceived Romantic Relationship Quality Scale. R-Satisfy denotes Relationship Satisfaction. Commit refers to Commitment. Relationship Satisfaction, Commitment, Trust, Intimacy, Passion, and Love are the subscales of the Multidimensional Romantic Relationship Quality Scale

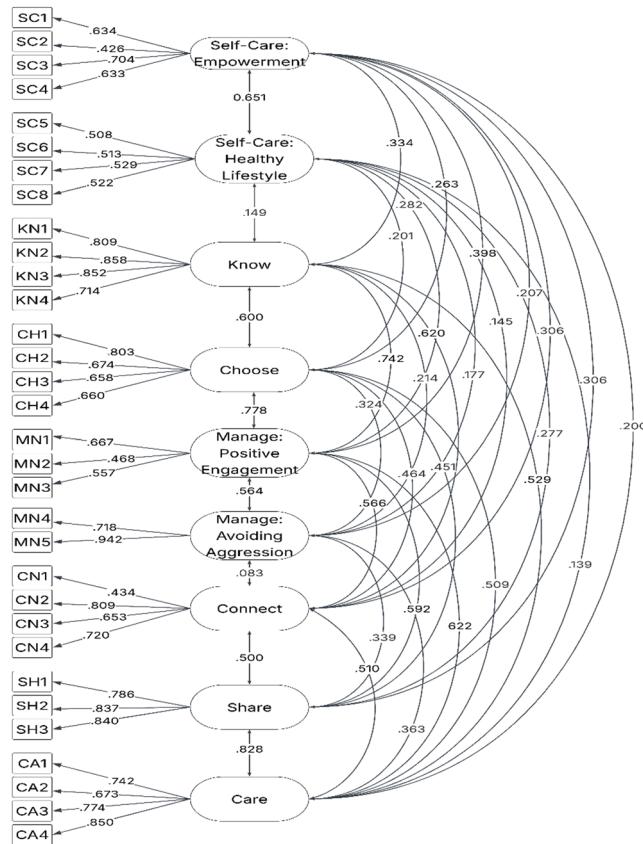
*p* < 0.001; *n* = 715

explain less than 50% of the variance in their indicators, the CR values exceeded the acceptable threshold of 0.70 for all constructs, suggesting adequate internal consistency.

### Model-fit indices

The CFA utilized the R lavaan package with the diagonally weighted least squares (WLSMV) estimator, which is ideal for handling non-normal data and large sample sizes (Brown, 2015). A 9-factor model comprises *Empowerment*, *Healthy Lifestyle*, *Choose*, *Know*, *Positive Engagement*, *Avoiding Aggression*, *Connect*, *Share*, and *Care*. Figure 1 displays a visual path diagram of the 9-factor model, depicting the relationships among latent factors and their indicators. The results and thresholds are detailed in Table 3 (Byrne, 2013; Hox, 2021; Hu & Bentler, 1999; Perry et al., 2015; Sun, 2005).

The fit indices of the model indicate a strong alignment between the observed data and the hypothesized 9-factor structure. The  $\chi^2/df$  ratio of 1.4 is significantly below the ideal fit threshold of <3 (Hox, 2021) and the acceptable threshold of <5, illustrating minimal discrepancies between the observed and model-implied covariance matrices, even considering that a large sample size can inflate chi-square values. Additionally, the RMSEA of 0.025 (90% CI:



**Fig. 1** CFA path diagram

**Table 3** Model fit indices and CRSI results

Fit Index	Description	Acceptable Threshold	Good Threshold	WLSMV (CRSI)
$\chi^2/df$	Chi-square to degrees of freedom ratio: assesses overall model fit.	<5	<3	<b>1.4</b>
RMSEA	Root Mean Square Error of Approximation: measures discrepancy per degree of freedom.	<0.08	<0.05	<b>0.025</b> (90% CI: <b>0.020</b> – <b>0.029</b> )
NFI	Normed Fit Index; compares the model to a null model.	>0.80	>0.90	<b>0.965</b>
GFI	Goodness of Fit Index: measures the proportion of variance accounted for by the model.	>0.90	>0.95	<b>0.980</b>
AGFI	Adjusted Goodness of Fit Index; adjusts GFI for model complexity.	>0.90	>0.95	<b>0.975</b>
CFI	Comparative Fit Index: compares the model to a baseline model.	>0.90	>0.95	<b>0.989</b>
RMR	Root Mean Square Residual: measures average residual variance.	<0.08	<0.05	<b>0.110</b>
TLI	Tucker-Lewis Index: adjusts for model complexity.	>0.80	>0.90	<b>0.987</b>
SRMR	Standardized Root Mean Square Residual: standardized measure of residuals.	<0.08	<0.05	<b>0.046</b>

0.020–0.029) is below the good fit threshold of <0.05 and comfortably falls within the acceptable range of <0.07, with its narrow confidence interval highlighting the model's fit precision.

The incremental fit indices further validate the model's quality. The CFI of 0.989 and TLI of 0.987 surpass the good fit threshold of >0.95 and the acceptable thresholds of >0.90 for CFI and >0.80 for TLI, indicating a substantial improvement over the baseline model while accounting for complexity. Similarly, the NFI of 0.965 exceeds the good

threshold of >0.90 and the acceptable threshold of >0.80, affirming significance over a null model. The absolute fit indices bolster these findings, with the GFI of 0.980 and AGFI of 0.975 surpassing the good threshold of >0.95 and acceptable threshold of >0.90, demonstrating that the model captures a significant proportion of the observed variance, even after factoring in the number of parameters. The SRMR of 0.046 is below the good fit threshold of <0.05 and comfortably fits within the acceptable range of <0.08, indicating low standardized residual variance and a close alignment between observed and predicted covariances. However, the RMR of 0.110 exceeds the acceptable threshold of <0.08 and the good threshold of <0.05, indicating some residual variance. This issue is outweighed by the otherwise exceptional fit across all other indices, particularly the SRMR, which is more reliable for standardized residuals in large samples.

### Factor loadings

In the context of CFA, the factor loadings of the items were examined. According to Brown (2015), factor loadings exceeding 0.50 are deemed to be satisfactory, with those surpassing 0.70 being considered highly satisfactory. As demonstrated in Table 4, the factor loadings of *SC2*, *MN2*, and *CNI* items remained below 0.50. However, according to the extant literature, a factor loading of 0.30 and above is acceptable; therefore, no items were deleted from the inventory (Hair et al., 2019). Table 4 presents the English and Turkish versions of the inventory items, their factor loadings, and Cronbach's alpha coefficients for each subscale.

In conclusion, reliability values and CFA for the inventory confirm the CRSI structure within the Turkish population. While the CFA presents strong model fit indices, it correlates significantly with other relationship quality scales. Nonetheless, RMR (0.11) and correlations between *Share* and *Care* (0.83) for the Fornell-Larcker analysis suggest potential overlap among constructs, highlighting the need for further refinement to improve their distinctiveness. Furthermore, to assess potential gender differences in CRSI scores, considering the sample's makeup (74.4% women,  $N=532$ ; 25.6% men,  $N=183$ ), an independent-samples t-test was executed. The results indicated a statistically significant difference between women ( $M=157.47$ ,  $SD=23.67$ ) and men ( $M=161.68$ ,  $SD=24.50$ ) participants ( $t(713) = -2.05$ ,  $p=0.04$ ,  $M_{diff} = -4.21$ ). Nevertheless, the effect size ( $d=0.18$ ) suggested minimal practical significance. Within the CRSI's score range (32–224), the 4.21-point difference represented only 2.2% of the total range, indicating that gender had a limited influence on the results. Overall, these results affirm that the CRSI is appropriate for evaluating relationship skills in the Turkish context.

**Table 4** Item-Level psychometric properties of the Turkish CRSI: CFA standardized factor Loadings, and internal consistency (Cronbach's  $\alpha$ )

No	Items	Factor Loads*	Subscale	Cronbach's $\alpha$
SC1	I have the power to manage the challenges in my life.   <i>Hayatmdaki zorlukları yönetebilecek güce sahibim.</i>	0.634	Self-Care	0.709
SC2	I ask for help from others when needed.   <i>İhtiyaç olduğunda başkalarından yardım isterim.</i>	0.426		
SC3	I recognize my strengths.   <i>Güçlü yönlerimin farkındayım.</i>	0.704		
SC4	I manage the stress in my life.   <i>Hayatmdaki stresi yönetebilirim.</i>	0.633		
SC5	I eat healthy meals every day.   <i>Her gün sağlıklı yemekler yerim.</i>	0.508		
SC6	I exercise at least three or more times a week.   <i>Haftada üç ya da daha fazla kez spor yaparım.</i>	0.513		
SC7	I get 7–8 quality hours of sleep every night.   <i>Her gece 7–8 saat kaliteli uyurum.</i>	0.529		
SC8	I have quiet time for myself every day.   <i>Her gün kendime sessiz bir zaman dilimi ayırrım.</i>	0.522		
CH1	I want this relationship to stay strong no matter what rough times we encounter.   <i>Ne kadar zor zamanlar geçirirsek geçirelim, bu ilişkinin güçlü kalmasını isterim.</i>	0.803	Choose	0.797
CH2	I commit effort every day to making my relationship work.   <i>İlişkimin yürümesi için her gün çaba gösteririm.</i>	0.674		
CH3	I always think about how my choices could affect my relationship.   <i>Seçimlerimin ilişkimi nasıl etkileyebileceğini her zaman düşünürüm.</i>	0.658		
CH4	I always make an effort to focus on my partner's strengths.   <i>Partnerimin güçlü yönlerine odaklanmak için her zaman çaba gösteririm.</i>	0.660		
KN1	I know my partner's current life stresses.   <i>Partnerimin mevcut yaşam streslerini biliyorum.</i>	0.809	Know	0.880
KN2	I know some of my partner's major aspirations and hopes in life.   <i>Partnerimin hayatı başlıca istek ve umutlarından bazılarını biliyorum.</i>	0.858		
KN3	I know my partner's current major worries.   <i>Partnerimin şu anki büyük endişelerini biliyorum.</i>	0.852		
KN4	I know my partner pretty well.   <i>Partnerimi oldukça iyi tanıyorum.</i>	0.714		
MN1	I am able to see my partner's point of view and really understand it, even if I don't agree.   <i>Aynı fikirde olmasam bile, partnerimin bakış açısını görebilir ve onu gerçekten anlayabilirim.</i>	0.667	Manage	0.708
MN2	When things "get heated" I suggest we take a break to calm down.   <i>İşler kızıştığında sakinleşmek için tartışmaya ara vermemizi öneririm.</i>	0.468		
MN3	I can easily forgive my partner.   <i>Partnerimi kolayca affederim.</i>	0.557		
MN4	I shout or yell at my partner.   <i>Partnerime bağırap çağırırmı.</i>	0.718		
MN5	I blame, accuse, or criticize my partner.   <i>Partnerimi suçlar, itham eder veya eleştiririm.</i>	0.942		
CN1	Many of our friends are friends of both of us.   <i>Arkadaşlarımızın çoğu, ikimizin de arkadaşıdır.</i>	0.434	Connect	0.744
CN2	We know people who care about us and our relationship.   <i>Bizi ve ilişkimizi önemseyen insanlar tanıyoruz.</i>	0.809		
CN3	If we were to need help getting by or encountered a crisis, we would have friends and family to rely on.   <i>Bir krizle karşılaşırsak veya bir krizi atlattmak için yardıma ihtiyacımız olursa güvenebileceğimiz arkadaşlarımız ve ailemiz var.</i>	0.653		
CN4	As a couple, we try to help others in need.   <i>Çift olarak, ihtiyacı olan başkalarına yardım etmek için çaba gösteririz.</i>	0.720		
SH1	Had a stimulating exchange of ideas.   <i>Heyecan verici bir fikir alışverişinde bulunmak.</i>	0.786	Share	0.858
SH2	Engage in and/or talk about outside interests together.   <i>Birlikte ortak ilgi alanlarıyla meşgul olma ve/ veya onlar hakkında konuşmak.</i>	0.837		
SH3	Make time to touch base with each other.   <i>Birbirinizle etkileşim kurmak için zaman ayırmak.</i>	0.840		
CA1	Say "I love you" to your partner.   <i>Partnerinize "Seni seviyorum" demek.</i>	0.742	Care	0.843
CA2	Initiate physical affection with your partner (e.g., kiss, hug).   <i>Partnerinizle fiziksel bir yakınlaşma başlatmak (örn. öpmek, sarılmak).</i>	0.673		
CA3	Share emotions, feelings, or problems with your partner.   <i>Partnerinizle duygularınızı, hislerinizi veya sorunlarınızı paylaşmak.</i>	0.774		
CA4	Tell my partner things I appreciate about him/her and how much I care for him/her.   <i>Partnerinize, onun hakkında takdir ettiğiniz şeyleri ve onu ne kadar önemsedığınızı söylemek.</i>	0.850		

Note. CFA loadings represent standardized estimates from the nine-factor confirmatory model. Cronbach's  $\alpha$  values are reported at the subscale level

## Discussion

We aimed to adapt and validate the CRSI for the Turkish cultural context, fulfilling the need for an extensive,

multidimensional assessment tool that effectively captures essential relationship skills. Our results confirm the psychometric reliability of the Turkish version of the CRSI, demonstrating a strong model fit, reliability, and validity

evaluations, which underscore the instrument's applicability for both research and practical purposes. We validated the CRSI using a diverse Turkish sample that included participants who varied in age, education level, socioeconomic status, marital status, having children, and relationship length. By using a large, heterogeneous sample, we ensured that the CRSI maintained its psychometric integrity across diverse demographic groups, thereby increasing the inventory's generalizability. This cross-cultural adaptation of the inventory provides implications for culturally tailored relationship interventions by emphasising cognitive and behavioural components.

### Comparison with original CRSI

The Turkish CRSI maintained the nine-factor structure of the original inventory (Adler-Baeder et al., 2022), demonstrating superior model-fit indices ( $\chi^2/df=1.4$ ; RMSEA=0.025; NFI=0.97; GFI=0.98; AGFI=0.98; CFI=0.99; RMR=0.11; TLI=0.99) compared to the original (RMSEA=0.043; NFI=0.92; CFI=0.949; TLI=0.932). These differences may result from the use of WLSMV estimator in our research, which is particularly effective for ordinal data and large samples, in contrast to the Bayesian CFA used in the original study, which is more effective with smaller or non-normal datasets (Liang & Yang, 2014). The analysis revealed that the factor loadings of the items ranged from 0.43 to 0.86, whereas they ranged from 0.38 to 0.88 in the original study, which included more than one sample; this range represents the overall range for all samples. In both studies, the *SC2* item "asking for help when needed" (0.43 vs. 0.42) and the *MN2* item "suggesting a break from the discussion" (0.47 vs. 0.38) had relatively low factor loadings, reflecting cultural influences discussed below.

The internal consistency of the CRSI in the current adaptation study ( $\alpha=0.90$ , subscales  $\alpha=0.71$ –0.88) was comparable to that reported in prior studies (range  $\alpha=0.67$ –0.93; Adler-Baeder et al., 2022; Richardson et al., 2023; Cooper, 2023). It is noted that the reliability level observed in our study is comparable to that reported in other studies, and the internal reliability of the inventory is excellent. The convergent validity of the inventory was high, as indicated by the PRRQS ( $r=0.693$ ,  $p<0.01$ ) and MRRQS ( $r=0.723$ ,  $p<0.01$ ). In the original study, couple relationship quality ( $r=0.67$ ,  $p<0.001$ ), family harmony ( $r=0.63$ ,  $p<0.001$ ), positivity ( $r=0.53$ ,  $p<0.001$ ), and negativity ( $r=-0.52$ ,  $p<0.001$ ) are similar to or lower than those of our findings. Measurements indicate that the CRSI construct is suitable for measuring the relationship quality construct, as it correlates with similar relationship scale constructs (Duckworth & Kern, 2011).

In our current study, the correlation between the subscales of the inventory was  $r=0.148$ –0.711,  $0.148$ –0.711,  $p<0.01$ . In the original study, this range was  $r=0.296$ –0.609,  $p<0.01$ . Similar to the original study, the correlation coefficient  $r$  ranged from 0.27 to 0.54,  $p<0.001$ . In the study by Arroyo et al. (2024), only the *Share*, *Care*, *Know*, and *Manage* subscales were used, and their correlation coefficients ranged  $|r|=0.57$  to 0.67,  $p<0.01$ . Our findings show statistically significant correlations between the subscales, and these structures are separate from each other but internally connected.

### Cultural considerations

This adaptation study advances the measurement of relationship skills by demonstrating the effectiveness of the CRSI in a culturally diverse context and supports its broader applicability. The cultural context of Türkiye, characterised by a mix of traditional and modern values, provided a unique setting to examine the applicability of the CRSI (Bakir & Haskan-Avcı, 2025). The validation results highlight the importance of the inventory in assessing relationship skills in a culture where collectivist and individualist values intersect and affect couples' relationship dynamics. In Turkish culture, where collectivist values prioritize interdependence and group-oriented behaviours, participants' responses often reflected family-centered socialization, communal obligations, and adherence to traditional gender norms (Bakır & Dogan, 2025). These results illustrate the vital influence of cultural values on individuals' responses to CRSI items.

First, the factor loading for the *CNI* item "common friends" was 0.61 and 0.68 in the two validation samples of the original study, but only 0.43 in our study. The distribution of married versus non-married individuals in the relationship type was approximately 70% to 30% in the original study sample, while it was around 55% to 44% in our adaptation study. In Türkiye, married individuals are more likely to engage in family-oriented social activities (Sunar, 1992). For singles, this level of commonality can differ based on the relationship phase (Reese-Weber, 2015).

The context before and after marriage may differ for couples in Türkiye regarding their religious affiliation or sexual orientation (Karaman et al., 2022). For instance, someone whose religious affiliation is Islam may have assigned a low score to this item because they do not have physical closeness before marriage, or an individual whose sexual orientation is not straight may have rated some items (Items 22, 23, and 24) on the *Connect* subscale, which evaluates the couple's relationship with others, lower due to the necessity of living their romantic relationship secretly such as homosexual couples (Bergen-Aurand, 2015; Greenwell, 2016).

Our current study observed the lowest correlation between the *Self-Care* and other subscales ( $r=|0.148–0.261|$ ,  $p<0.01$ ), compared to the original study ( $r=|0.296–0.480|$ ,  $p<0.01$ ). The relatively low correlation of this subscale, related to a healthy lifestyle and empowerment, with other relationship skills can be explained by the low probability of couples engaging in proactive health behaviours in Türkiye (Tansel & Karaoglan, 2014). Given that behaviors like exercising, eating healthily, and prioritizing self-care are often underrepresented in the general population, the correlation values of the subscale should be viewed in that context.

Finally, the factor loading of the CH1 “*wanting to stay strong no matter what the relationship is*” item was 0.42 in the original study, while it was 0.80 in our adaptation study. This discrepancy can be attributed to the cultural contexts. In the present study, 74% of the sample comprised women, which is in accordance with the Turkish cultural norm in which women are generally expected to prioritise relationships and family (Kagitcibasi, 2017). It is also noteworthy that the preponderance of women participants in our study resulted in negligible statistical disparities in the outcomes. However, the extant literature demonstrates that the participation rate of women in scientific research exceeds that of men (Groves et al., 1992; Slauson-Blankenship & Johnson, 2016). This phenomenon can be attributed to the propensity of women to disclose personal and intimate information during interpersonal interactions (Dindia & Allen, 1992). In this respect, our experience in this study is consistent with the literature. Furthermore, this discrepancy has engendered an opportunity to scrutinise gender dynamics within our findings.

### Implications for practice

The CRSI is an inventory that evaluates couples’ relationship skills across 32 items using a 7-point Likert scale. Completing the tool takes an average of 10 min. The items of the inventory are presented in both English and Turkish in Table 4. The inventory can provide a total score or be utilized as subscales. Each subscale is indicated in Table 4 with its abbreviation next to the relevant items. Items 20 and 21 are reverse-coded. When applying the inventory in practice, it is not mandatory to present the items in this order; they can be listed in any order. Since this measurement tool was designed for an educational program aimed at improving the relationship quality of couples (Adler-Baeder et al., 2022), it is particularly suitable for use in intervention programs and clinical evaluations. Important considerations when using it in research include variables such as long-distance relationships, sexual orientation, or religious background, as detailed in the limitations section below.

### Limitations and further directions

Despite the strengths of the research and statistical results, this study has some limitations. First, the demographic data did not include whether participants were in long-distance relationships, which may have affected their responses to items like Item 30, regarding initiating physical closeness. Some participants reported maintaining long-distance relationships and sought guidance on responding to certain items, indicating a need for CRSI instructions to specify whether responses should reflect periods of physical togetherness. Future studies can utilize multigroup CFA to test the measurement invariance of CRSI, which helps ensure that observed group differences stem from individual characteristics rather than from the inventory itself (Wichert & Dolan, 2010).

Second, our participants were in existing relationships but participated individually, not as couples; thus, the data were self-reported. Self-report bias is particularly relevant considering the sensitivity of topics like physical closeness and managing conflict, which may be underreported in the collectivist Turkish culture. The literature emphasizes that the scales used in couples should be applied to both partners, ensuring that the factor structure remains consistent between partners (Iacobucci et al., 1999; Wasserman & Iacobucci, 1986). This application, known as dyadic validity, was not included in the present study. This lack of dyadic data likely underestimated subscale correlations, particularly for the *Self-Care* subscale, which exhibited lower correlations ( $r=|0.148–0.261|$ ,  $p<0.01$ ) compared to the original study ( $r=|0.296–0.480|$ ,  $p<0.01$ ). For instance, one partner’s self-care practices, such as healthy lifestyle choices, may encourage joint social activities—attending social events together—as measured by the Connect subscale. Without dyadic data, these partner influences likely weaken observed correlations. Future research should encompass both partners and employ specific models like Actor-Partner Interdependence Models to capture dyadic dynamics accurately and prevent self-report bias.

Third, the majority of participants in this study were women, which may have increased the risk of response bias, as women participants showed different tendencies on specific items. Furthermore, the women-weight sample is a factor that could affect the external validity of the study, as this distribution may not be fully consistent with the characteristics of the target population. Therefore, it is recommended that specific sampling methods be used in future research to ensure a more balanced gender distribution.

Finally, it is important to note that information pertaining to race, religious affiliation, and sexual orientation was not collated during the research data collection process. This scenario has the potential to result in an underrepresentation

of diverse groups. Consequently, future research endeavours should systematically collect this demographic information and methodically compare the data, while demonstrating a high level of sensitivity to issues of informed consent and confidentiality, particularly in light of Türkiye's sociopolitical context.

## Conclusion

This research enhances relationship studies by validating the Turkish version of the CRSI using a robust methodological approach. The CRSI exhibits strong psychometric properties, as evidenced by its solid factor structure and high internal consistency, demonstrating the CRSI's effectiveness as a versatile tool for assessing essential relationship skills. This enables researchers and practitioners to address a variety of relational needs across different cultural settings and in cross-cultural relationship studies. Future research can expand on these findings by exploring dyadic dynamics, conducting cross-cultural comparisons, and studying underrepresented populations to improve the applicability of the CRSI.

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**Data availability** The dataset of this study is available at Open Science Framework (<https://doi.org/10.17605/OSF.IO/EJ36G>).

## Declarations

**Ethical considerations** This research was conducted as part of the first researcher's doctoral thesis under the supervision of the second researcher. Research permissions were obtained from the Hacettepe University Ethics Committee (Ethics Approval No: 51944218-300). During the data collection stage, an informed consent form was sent to the participants, and those who agreed to participate were included in the study.

**Conflicting interest** We have no conflict of interest to declare.

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