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Interpersonal Regulation Interaction Scale (IRIS): An Adaptation Study in the Context of Psychological Symptom Level and Social Support

Kişilerarası Duygu Düzenleme Etkileşim Ölçeği (KDDEÖ): Psikolojik Belirti Düzeyi ve Sosyal Destek Bağlamında Bir Adaptasyon Çalışması

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ABSTRACT

Objective: Interpersonal processes are a significant dimension of emotion regulation, yet studies in this area are quite limited, and the measurement tools used in the Turkish literature are also scarce. Therefore, it is aimed to introduce the Interpersonal Regulation Interaction Scale to the Turkish literature.

Method: The sample of the study consists of n=320 married individuals. The data were collected through surveys. In this study, measurement tools that inquire about emotion regulation, social support, and psychological symptoms were used. The scale's construct validity was assessed with confirmatory factor analysis. Criterion-related validity was tested with Pearson correlation coefficients with other scales, and reliability was calculated using Cronbach α coefficients. Finally, test-retest reliability was tested in a group of 50 individuals.

Results: Confirmatory factor analysis supports the scale's four-factor structure (responsiveness, cognitive support, hostility, physical presence). The Cronbach α values for the Turkish Interpersonal Regulation Interaction Scale are .92 for the responsiveness subscale, .87 for the cognitive support subscale, .75 for the hostility subscale, and .80 for the physical presence subscale. The results of criterion-related validity and test-retest reliability confirm that the Turkish form is a valid and reliable tool, and it is reported that the subscales are associated with psychopathology, difficulties in emotion regulation, psychological symptoms and social support.

Conclusion: This research found that the Interpersonal Regulation Interaction Scale is a valid and reliable measurement tool for the Turkish sample. In conclusion, a significant measurement tool has been introduced for use in research in Türkiye.

Keywords: Interpersonal emotion regulation, emotion regulation, psychopathology, social support

ÖZ

Amaç: Kişilerarası süreçler duygu düzenlemenin önemli bir boyutu olmasına rağmen bu alanda yapılan çalışmalar oldukça sınırlı olup Türkçe literatürde kullanılan ölçüm araçları da oldukça azdır. Bu nedenle Kişilerarası Duygu Düzenleme Etkileşim Ölçeği'nin Türkçe literatüre kazandırılması önem taşımaktadır.

Yöntem: Araştırmanın örneklemini n=320 evli birey oluşturmaktadır. Veriler anketler aracılığıyla toplanmıştır. Bu çalışmada duygu düzenleme, sosyal destek ve psikolojik belirtileri sorgulayan ölçüm araçları kullanılmıştır. Ölçeğin yapı geçerliliği doğrulayıcı faktör analizi ile değerlendirilmiştir. Ölçüt bağıntılı geçerlilik için diğer ölçeklerle olan Pearson korelasyon katsayıları test edilmiş ve güvenilirlik için Cronbach Alpha katsayıları hesaplanmıştır. Son olarak 50 kişilik bir grupta test tekrar test güvenirliği test edilmiştir.

Bulgular: Doğrulayıcı faktör analizi, ölçeğin dört faktörlü yapısını (duyarlılık, bilişsel destek, düşmancıllık, fiziksel mevcudiyet) desteklemektedir. Türkçe Kişilerarası Duygu Düzenleme Etkileşim Ölçeği'nin Cronbach α değerleri; duyarlılık alt boyutu için .92, Bilişsel Destek alt boyutu için .87, düşmancıllık alt boyutu için .75, fiziksel mevcudiyet alt boyutu için ise .80 olarak hesaplanmıştır. Ölçüt bağıntılı geçerliği ve test-tekrar test güvenirliği sonuçları Türkçe formunun geçerli ve güvenilir bir araç olduğunu doğrulamış olup alt boyutların psikolojik belirti, duygu düzenleme güçlükleri ve sosyal destek ile de ilişkili olduğu raporlanmıştır.

Sonuç: Bu araştırma sonucunda Kişilerarası Duygu Düzenleme Etkileşim Ölçeği'nin Türkiye örneklemi için geçerli ve güvenilir bir ölçüm aracı olduğu bulunmuştur. Sonuç olarak, Türkiye'deki araştırmalarda kullanılmak üzere, dilimize önemli bir ölçüm aracı kazandırılmıştır.

Anahtar sözcükler: Duygu düzenleme, kişilerarası duygu düzenleme, psikopatoloji, sosyal destek

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Introduction

Emotion regulation refers to the ability to effectively manage and respond to daily events through processes such as recognizing, understanding, accepting emotions, organizing goal-directed behaviors, maintaining impulses, and inhibiting behaviors (Gross and Thompson 2007, Aldao et al. 2010). Historically, emotion regulation has been considered an intra-personal function and discussed within the context of self-regulation. More recently, however, it has been recognized as an interpersonal process as well. In contrast to individual-level emotion regulation, interpersonal emotion regulation (IER) pertains to managing one's own and others' emotions within social and environmental contexts (Barthel et al. 2018). According to this perspective, the process of emotion regulation evolves within a social context and continues to be shaped throughout individuals' lives within these social environments. Beckes and Coan (2011) define interpersonal emotion regulation as the reduction of negative emotions through the presence of another person, while Hofmann et al. (2016) describe it as an individual's management of their emotions through social interactions. Zaki and Williams (2013) highlight the tendency of individuals to use social connections to regulate emotions. Accordingly, individuals utilize these two fundamental strategies through social relationships to regulate their own emotions (internal IER) or the emotions of others (external IER).

Individuals who fail to appropriately manage their emotional responses to negative events in daily life are observed to experience more intense and prolonged stress, which notably increases susceptibility to mental health issues such as depression and anxiety (Mennin et al. 2007, Nolen-Hoeksema et al. 2008). A meta-analysis conducted by Aldao and colleagues (2010) highlighted that in problems associated with depression and anxiety, the tendency towards dysfunctional emotion regulation strategies is a more significant issue than the absence of functional methods. Furthermore, it is emphasized that categorizing emotion regulation strategies simply as functional or dysfunctional is less important than the suitability of a method for a specific situation and the individual's flexibility in using these methods in terms of psychological health outcomes (Aldao and Nolen-Hoeksema 2012).

The critical importance of Interpersonal Emotion Regulation (IER) spans a wide spectrum, particularly in psychopathology, where it is associated with dysfunctional emotion regulation patterns linked to various mental health issues such as depression, anxiety, and personality disorders. In this context, IER emerges as a fundamental research area for understanding and treating mental health disorders (Zaki 2020). Hofmann et al. (2016) noted that IER strategies might be dysfunctional under certain conditions and that inappropriate use of IER strategies could cause or exacerbate mental health problems. For instance, individuals struggling with regulating their emotions may seek more reassurance from others, which can lead them to become more dependent on others for emotional regulation. Hofmann and colleagues (2016) found positive correlations between IER strategies and psychological symptom levels such as depression, persistent anxiety, and social anxiety. Studies have reported that reassurance seeking, an IER strategy, is highly associated with depression (Hofmann et al. 2016, Koç et al. 2019, Gökdağ 2021, Ray-Yol et al. 2022). These studies demonstrate significant effects of IER strategies on individuals' mental health and relationships.

Emotion regulation systems are significantly influenced by social factors in the environment, including interpersonal interactions (Marraquin 2011). Although the interpersonal influences on emotion regulation have been relatively under-researched, there is a universal consensus that emotions themselves serve social functions (Keltner and Gross 1999). According to Cohen (2004), the concept of social support represents the psychological and material resources provided through social networks or environments designed to help an individual cope with stress. Coan and Maresh (2014) assert that humans regard social resources as part of their basic needs, and support obtained from these resources can alleviate the distress involved in the emotion regulation process required to achieve goals. This approach highlights the role of social relationships in emotion regulation, emphasizing the importance of social bonds in providing emotional support for individuals. Furthermore, they have noted that factors such as a lack of social support networks or low satisfaction in social relationships can severely affect an individual's capacity to effectively manage emotions, leading to mental health issues. Interpersonal Emotion Regulation (IER) plays a crucial role in maintaining psychological health and social harmony. In the context of close relationships, it encompasses behaviors by partners, friends, or family members aimed at regulating each other's emotional states. Such behaviors include offering support during stressful times, sharing positive experiences to elevate mood, or using humor to alleviate tension (Feeney and Collins 2015, Hofmann and Doan 2018).

Social support relies on the presence and provision of assistance from social networks and relationships external to the individual, encompassing emotional, informational, and instrumental support, and promoting an overall state of well-being. In contrast, interpersonal emotion regulation (IER) is a targeted behavior that involves

managing emotions through social interactions, addressing more specific situations, and requiring a high level of social and emotional intelligence. Social support is often sought across a broad spectrum, generally independent of an individual's social skills, based on the knowledge of a supportive network. Conversely, IER is used more situationally to respond to emotional needs at specific moments and depends on the context of the interaction and the responsiveness of the participants. Despite their differences, these two processes play complementary roles in meeting an individual's emotional and social needs and supporting overall well-being (House 1981, Cohen and Wills 1985, Gross 1998, Lakey and Orehek 2011, Zaki and Williams 2013).

Interpersonal emotion regulation (IER) is seen as an integral part of the support provided between friends and romantic partners (Butler and Randall 2013). Studies focusing on IER strategies in married couples have shown that positive interpersonal emotion regulation is linked to relationship satisfaction (Rusu et al. 2019). Research by Florean and Pasarlu (2019) has indicated that IER predicts relationship satisfaction and has revealed the impact of cognitive empathy and individual difficulties in emotion regulation on relationship satisfaction. Chan and Rwana's (2021) study has demonstrated that IER strategies, such as positive affectivity and perspective-taking, are positively correlated with psychological well-being and negatively correlated with internalization symptoms. Findings by Levy Gigi and Shamay-Tsoory (2017) suggest that IER is more effective in reducing distress in romantic partners compared to intrapersonal emotion regulation strategies. These studies highlight the significant effects of IER on the well-being and mental health of couples.

There are several self-report scales designed to measure interpersonal emotion regulation (IER), some of which have been adapted into Turkish. The "Interpersonal Emotion Regulation Scale," developed by Hofmann et al. (2016), has been frequently studied in its Turkish version (Malkoç et al. 2018, Gökdağ et al. 2019, Koç et al. 2019, Saruhan et al. 2019, Sarısoy-Aksüt and Gençöz 2020). Additionally, the "Interpersonal Emotion Regulation Questionnaire: Co-Rumination and Co-Reappraisal Questionnaire" developed by Horn and Maercker (2016) to assess emotion regulation processes that emerge during interactions between individuals in romantic or marital relationships has been adapted into Turkish by Ata and Yalçınkaya-Alkar (2020). These tools are essential for researching the dynamics of emotional regulation within interpersonal contexts and have contributed significantly to the field by providing culturally relevant measurements.

The "Interpersonal Regulation Interaction Scale" (IRIS) developed by Swerdlow and Johnson (2022) differentiates itself from other scales used in the field by focusing on interactions involving interpersonal internal emotion regulation strategies. Unlike other measures that assess dimensions of behaviors provided by others in IER interactions, this tool specifically evaluates how these interactions are perceived by the recipients, addressing a gap in the national literature. This adaptation study aims to fill this gap. According to the researchers, interpersonal emotion regulation interaction is a process necessitated by purposeful social operations in which two or more individuals are motivated to regulate their own and each other's emotional states. The main objective of the scale developed within this framework is to investigate the support processes autobiographically recalled during instances when individuals seek help from others to regulate and manage their emotions, thereby attempting to bridge perceived social support and interpersonal emotion regulation. The study culminates in identifying four fundamental dimensions that describe interpersonal emotion regulation interactions: reponsiveness, hostility, cognitive support, and physical presence.

The dimension of responsiveness encompasses empathic concern, understanding, validation, and focusing on the recipient's emotional experience, with items like “Encouraged me to share my feelings with them”, “Expressed sympathy or concern,”, “Made an effort to listen to me.” Hostility includes behaviors such as contempt, criticism, lack of empathic concern, and interpersonal aggression, reflected in statements like “Expressed anger or hostility toward me,” “Ignored or invalidated my feelings”, “Expressed resentment toward me.” The cognitive support dimension involves reappraisal, informational support, and problem-solving skills, with items such as “Gave me advice” “Helped me to see the situation in a new light,”, “Helped me to solve the problem.” Lastly, the physical presence dimension includes physical contact and non-verbal communication, illustrated by items like “Let me know that they were physically present with me”, “Conveyed their availability through body language (for example, eye contact, facial expressions, body posture)”, “Communicated their thoughts and feelings through physical contact (for example, a pat on the shoulder, a hug)” (Swerdlow and Johnson 2022).

This measurement tool, the "Interpersonal Regulation Interaction Scale" aims to identify the fundamental transformation dynamics within interpersonal emotion regulation mechanisms and illuminate the dimensions and structure of recipients' perceptions of support. The lack of an instrument focusing on interactions in interpersonal emotion regulation in the national literature underscores the significance of this study. The scale has been developed to explore internal interpersonal emotion regulation interactions where others regulate our

emotions without our active efforts. The primary goal of this research is to adapt a significant measurement tool to Turkish, making it available for use in studies within Turkey. This study represents the first adaptation of its kind in the international literature and is also crucial as the first in the national literature to examine the relationships between interpersonal emotion regulation interactions and psychological symptom levels. It is anticipated that this study will make significant contributions to the literature on these topics.

To align with the objectives of the research, the stated hypotheses are as follows: Firstly, it is hypothesized that the IRIS will exhibit a similar factor structure to that found in the original study. This prediction is based on the assumption that the underlying dimensions of interpersonal emotion regulation interactions are consistent across different cultural contexts. Secondly, it is expected that there will be statistically significant relationships between the scores on the IRIS and those on the Difficulties in Emotion Regulation Scale, the Multidimensional Scale of Perceived Social Support, and the Depression Anxiety Stress Scales. This hypothesis suggests that the ability to regulate emotions interpersonally is closely linked to individual emotion regulation capabilities, perceived social support, and psychological distress. Thirdly, it is anticipated that the IRIS will meet the necessary validity and reliability criteria for use in Turkey. This involves ensuring that the scale is both psychometrically sound and culturally appropriate for the Turkish population, reflecting the nuances of interpersonal emotion regulation in this specific cultural context. These hypotheses aim to establish the IRIS as a robust tool for assessing interpersonal emotion regulation, contributing to both theoretical advancements and practical applications in the field of psychology and mental health in Turkey.

Method

Sample

The study involved 320 individuals aged between 24 and 62 years (Mean = 36.1, SD = 6.7), who have been married for at least one year. Of the participants, 67.2% (n=215) were female, and 32.8% (n=105) were male. In terms of educational attainment 10% of the participants held a doctoral degree 20% had a master's degree, 64.4% were university graduates, 4.4% had a high school diploma, and 3% completed middle school, while the remaining 6% indicated 'other' for their educational status. Regarding income levels 29.7% of the participants reported having a high income, 50.3% had a middle income, and 20% had a low income. Additionally, 69.1% of the participants stated they had at least one child, whereas 30.9% reported having no children. Participants were required to be currently married and living together, and capable of reading and understanding Turkish, as these were the criteria for adequate participation. Having a psychiatric disorder, living apart from their spouse, or being separated were used as exclusion criteria. As a result, data from 12 individuals were excluded from the study.

Procedure

Prior to the research, the necessary permissions were obtained from the developer of the scale, Benjamin Swerdlow, to carry out the adaptation study. Subsequently, ethical approval was granted by the Ethics Committee of Hacettepe University (No. E-28297300-900-00002141074, dated 18.04.2022). Initially, the scale items were translated into Turkish by four researchers who are experts in the field and proficient in both languages. The translated scale items were then retranslated into English by a linguist to check for any semantic discrepancies between the two versions. Once the final version was approved by the author, the data collection phase commenced. The majority of the participants were staff members at Karadeniz Technical University. Participants were recruited through snowball sampling. An informed consent form was provided to the participants before presenting them with the data collection tools. Volunteers were then given a demographic information form, followed by the Interpersonal Emotion Regulation Interaction Scale and other scale forms. It took approximately 20 minutes for an average participant to complete the forms. Following data collection, confirmatory factor analysis was conducted to assess the structural validity of the tool, and correlations with other scales included in the study were examined to evaluate criterion-related validity. As an additional reliability measure, the test-retest reliability coefficient of the scale was calculated. Data analyses were performed using IBM SPSS 26 and AMOS 24 statistical software packages.

Data Collection Tools

Demographic Form

In the scope of the research, besides the Interpersonal Emotion Regulation Interaction Scale, a demographic

information form was administered to gather data on participants' age, gender, and educational levels. Additionally, to assess the criterion-related validity of the scale, various other measurement tools were employed.

Interpersonal Regulation Interaction Scale (IRIS)

Developed by Swerdlow and Johnson (2022), the IERIS consists of 28 items rated on a 5-point Likert scale and is structured into four sub-dimensions: Responsiveness, Hostility, Cognitive Support, and Physical Presence. According to the results of the original study, an evaluation based on the current sample indicates that each of the four subscales demonstrates high reliability, with internal consistency values ranging from good to excellent, and an omega (ω) coefficient greater than .84. In the context of this study, the Cronbach's alpha values obtained are .92 for Responsiveness, .87 for Cognitive Support, .75 for Hostility, and .80 for Physical Presence. These values suggest that the scale is highly reliable for assessing interpersonal emotion regulation interactions, providing a robust tool for researchers and practitioners to understand how individuals engage in and perceive emotional support and regulation within interpersonal contexts.

Interpersonal Emotion Regulation Scale (IERS)

Developed by Hofmann and colleagues in 2016, the IERS is a measurement tool comprising 20 items rated on a 5-point Likert scale. It encompasses four sub-dimensions: social modeling, reassurance, enhancing positive emotions, and perspective taking. In the original study, the internal consistency coefficients for these dimensions were reported as α = .93, .94, .89, and .91, respectively, indicating high reliability. The Turkish adaptation of the scale was conducted by Gökdağ et al. (2019). Their study found that the internal consistency coefficients for the sub-dimensions ranged from .81 to .89, and the test-retest correlations ranged from .63 to .88, demonstrating good reliability and stability of the scale over time. In this current study, the Cronbach's alpha values obtained are .89 for social modeling, .91 for reassurance, .85 for enhancing positive emotions, and .90 for perspective taking. These values further affirm the reliability of the Turkish version of the IERS, ensuring its effectiveness in measuring interpersonal emotion regulation processes in Turkish populations.

Difficulties in Emotion Regulation Scale (DERS)

Developed by Gratz and Roemer (2004), the Difficulties in Emotion Regulation Scale (DERS) consists of 36 items rated on a 5-point Likert scale. The scale evaluates six different dimensions: goals, strategies, acceptance, impulse, clarity, and awareness. In the original study, the internal consistency coefficient for the overall scale was reported as .93, and the coefficients for the sub-dimensions ranged between .88 and .89. The adaptation of the scale into Turkish was conducted by Rugancı and Gençöz (2010). The Turkish version has an internal consistency reliability coefficient of .94, with sub-dimension coefficients ranging from .75 to .90. An increase in scores indicates greater difficulties in emotion regulation. In this study, the obtained Cronbach's alpha value for the entire scale is .88.

Depression Anxiety Stress Scales (DASS)

Developed by Lovibond and Lovibond in 1995, the Depression Anxiety Stress Scales (DASS) consist of 42 items designed to measure individuals' levels of depression, anxiety, and stress. In the original form, the internal consistency coefficients were determined to be .91 for depression, .81 for anxiety, and .89 for stress. The adaptation of the scale into Turkish was conducted by Akın and Çetin (2007), with the internal consistency coefficients reported as .96 for depression, .89 for anxiety, and .93 for stress. Higher scores on the sub-dimensions reflect higher levels of symptoms in individuals. In this study, the obtained Cronbach's alpha values are .91 for depression, .83 for anxiety, and .88 for stress.

Multidimensional Scale of Perceived Social Support (MSPSS)

Developed by Zimet et al. (1988), this measurement tool is used to assess the level of social support an individual perceives they receive, comprising 12 items. The primary aim of the scale is to determine the level of social support individuals receive from family, friends, and a special person. In the original study, the internal consistency coefficients were reported as .87 for family, .85 for friends, and .91 for a special person. The adaptation of the scale into Turkish was conducted by Eker and colleagues (1995), and later re-evaluated by Eker and his team in 2001. The revised Turkish form reported internal consistency coefficients of .80 for family, .85 for friends, and .92 for a special person. In this study, the obtained Cronbach's alpha values are .82 for family, .81 for friends, and .94 for a special person.

Statistical Analysis

The research was conducted to evaluate the structural validity of the IRIS. In this context, the compatibility of the factor structures of the original version of IRIS and its Turkish version was examined using Confirmatory Factor Analysis (CFA). During the analysis process, the factor loadings of the scale items and the model's fit indices were considered. The convergent validity of the scale was assessed through its relationships with other scales such as the IERS, DERS, DASS and MSPSS. These relationships were analyzed using Pearson correlation coefficients between the scales, supporting the validity of the IRIS. To determine the reliability of the IRIS, reliability analyses were conducted using Cronbach's alpha coefficients and test-retest methods. The Cronbach's alpha coefficient assessed the internal consistency of the scale, while the test-retest analysis was used to test the stability of the scale over time.

Results

To assess the suitability of the data for parametric analysis methods, histograms and z-scores for each variable were examined in detail. These examinations determined that the data generally exhibited a normal distribution. Skewness and kurtosis values were found to be between -1.5 and +1.5, indicating that the data conforms to a normal distribution (Tabachnick and Fidell 2007). Additionally, for handling missing data group averages were assigned to the missing responses of 11 participants, which represents less than 5% of the total number of participants. This method is a recommended approach by Myers (1990) for ensuring data integrity. A confirmatory factor analysis was conducted to evaluate the structural validity of the Turkish version of the IRIS. Data from 8 participants were excluded from the study due to having extreme values as determined by Z scores (Aggarwal 2017).

Structural Validity

During the Confirmatory Factor Analysis (CFA) conducted to analyze the structural validity and the suitability of the factor structures of both the original and Turkish versions of the IRIS, various fit indices were used to evaluate the model's fit to the data. These indices included the chi-square to degrees of freedom ratio ($\chi 2/df$), the goodness-of-fit index (GFI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), the Bentler-Bonett normed fit index (NFI), and the adjusted goodness of fit index (AGFI). These indices were utilized to objectively assess whether the scale's factor structure displayed consistency between the original and the translated forms and how well the model generally fit the research data (Schermelleh-Engel et al. 2003).

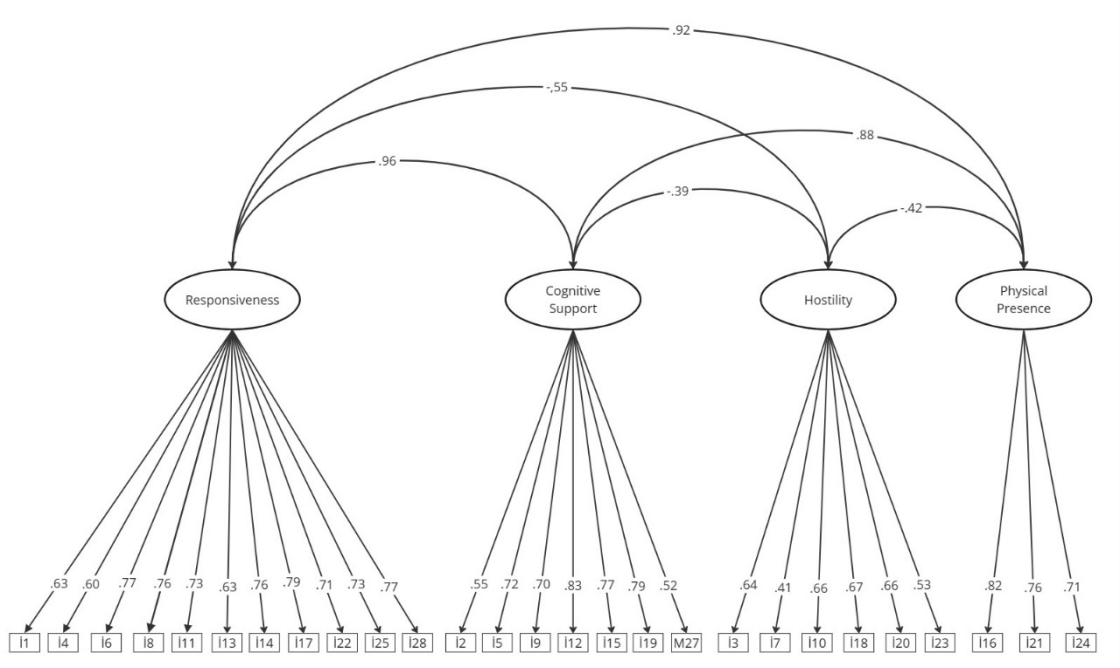

Figure 1: Confirmatory factor analysis results

All coefficients reported in this study without specified significance levels are considered significant at p = .000 level, İ: İtem.

A confirmatory factor analysis was applied to evaluate the structural validity of the Turkish form and its compatibility with the original form's factor structure ($\chi 2/df = 2.33$, CFI = .905, RMSEA = .065, GFI = .851, NFI = .850, and AGFI = .810, $p<.05$). Based on the original factor structure, after analyzing the factor loadings, item 26 from the hostility sub-dimension, which showed a loading below .35 (β=.191), was observed to decrease the reliability coefficient and was therefore removed from the model. After the removal of item 26, the resulting values were as follows: $\chi 2/df = 2.088$, CFI = .925, RMSEA = .058, GFI = .864, NFI = .866, and AGFI = .838 ($p<.05$). These values indicate an acceptable level of fit (Marcoulides and Schumacker 2001, Erkorkmaz 2013) (Table 1). The CFA model, indicating the factor loadings for each item, is presented in Figure 1.

Table 1. Goodness of fit indices and model fit criteria of the CFA model

Goodness of Fit Indices After Modification		Model Fit Criteria	References
CMIN/DF	2.088	3≤ acceptable fit	Kline 2005
GFI	.86	≥ .85 acceptable fit	Sürücü et all. 2021
CFI	.92	.90≤ CFI ≤1 God fit	Munro 2005
NFI	.86	≥ .80 acceptable fit	Shevlin et all. 2000
RMSEA	.05	.05≤RMSEA≤.08 acceptable fit	Yılmaz and Çelik 2009
AGFI	.85	.85≤AGFI≤.90 acceptable fit	Munro 2005

CMIN/DF: Chi-square to degrees of freedom ratio, GFI: Goodness-of-fit index CFI: Comparative fit index, RMSEA: The root mean square error of approximation, NFI: The Bentler-Bonett normed fit index and AGFI: The adjusted goodness of fit index

Criterion-Related Validity

To determine the validity of the IRIS, external criteria such as the Depression Anxiety Stress Scales (DASS), Interpersonal Emotion Regulation Scale (IERS), Multidimensional Scale of Perceived Social Support (MSPSS), and the Difficulties in Emotion Regulation Scale (DERS) were used. The relationships between the sub-dimensions of the scale and their total scores were examined and are presented in Table 2. Upon evaluating the relationships among the sub-dimensions of the IRIS, moderate positive correlations were found between the sub-dimensions of responsiveness, cognitive support, and physical presence. However, the hostility sub-dimension exhibited negative relationships with all other sub-dimensions. When correlated with the IERS, the sub-dimensions of responsiveness and cognitive support displayed moderate relationships with the sub-dimensions of interpersonal emotion regulation, the hostility sub-dimension showed a low negative correlation with enhancing positive emotions and low positive correlations with reassurance and perspective taking. The physical presence sub-dimension appeared to be related to enhancing positive emotions and social modeling. In terms of relationships with psychological symptom levels, the sub-dimensions of responsiveness, cognitive support, and physical presence reported negative correlations with all symptom levels, whereas the hostility sub-dimension exhibited positive correlations with all symptom levels. In the context of emotion regulation difficulties, the sub-dimensions of responsiveness, cognitive support, and physical presence showed moderate negative correlations with emotion regulation difficulties. The hostility sub-dimension displayed a moderate positive and significant relationship with emotion regulation difficulties. In the context of perceived social support, all sub-dimensions were observed to be related to perceived social support. Responsiveness, cognitive support, and physical presence sub-dimensions showed positive and moderate significant relationships with perceived social support, while the hostility sub-dimension exhibited a moderate negative and significant relationship with perceived social support.

Reliability

To determine the reliability level of the scale, item-total correlation coefficients were first calculated, followed by an examination of the Cronbach's alpha reliability coefficients. The item-total correlation coefficients ranged between .45 and .77. Upon examining the Cronbach's alpha reliability coefficients, the values were found to be .92 for the responsiveness sub-dimension, .87 for the cognitive support sub-dimension, .75 for the hostility sub-dimension, and .80 for the physical presence sub-dimension. The overall reliability coefficient was determined to be .88.

Test-Retest Reliability

To determine the test-retest reliability, a study was conducted with participants completing the assessment twice, four weeks apart. A total of 50 participants (39 women: 78% 11 men: 22%) returned for the second assessment (Mean age = 31, SD = 3.75). The intraclass correlation values were examined, and the correlation for the total scores was reported as .89. When the values were calculated for each sub-dimension, the results were

as follows: .92 for the responsiveness sub-dimension, .88 for the cognitive support sub-dimension, .86 for the hostility sub-dimension, and .94 for the physical presence sub-dimension.

Table 2: Correlation coefficients between the Interpersonal Regulation Interaction Scale, Interpersonal Emotion Regulation Scale, Depression Anxiety Stress Scale, and Multidimensional Perceived Social Support Scale

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
1.IRIS_RES		.260*	-.456**	.461**	.227**	.350**	.131*	.042	-.311**	-.289**	-.392**	-.341**	.454**
2.IRIS_CS			-.275**	.451**	.284**	.329**	.173**	.127*	-.197*	-.176**	-.303**	-.195**	.403**
3.IRIS_HOST				-.311**	.073	-.143*	.111*	.142*	.356**	.346**	.375**	.415**	-.221**
4.IRIS_PP					.236**	.310**	.097	.017	-.284**	-.261**	-.352**	-.279**	.397**
5.İERS_SM						.472**	.567**	.474**	.007	.097	-.046	.046	.194**
6.İERS_EPA							.381**	.208**	-.073	-.025	-.137*	-.176**	.269**
7.İERS_S								.457**	.146**	.183**	.101	.254**	.054
8.İERS_PT									.047	.025	-.152**	.003	.083
9.DASS_S										.826**	.855**	.626**	-.311**
10.DASS_A											.830**	.594**	-.291**
11.DASS_D												.632**	-.373**
12.DERS													-.394**
13.MSPSS													
Mean	3.90	3.98	1.98	3.92	3.52	4.13	3.12	2.79	1.95	1.67	1.65	2.71	5.22
SD	.65	.62	.66	.81	.77	.60	.88	.88	.67	.58	.65	.44	1.20

*p‹.05, **p‹.01, IRIS_RES: Interpersonal Regulation Interaction Scale/Responsiveness, IRIS_CS: Interpersonal Regulation Interaction Scale/Cognitive Support, IRIS_HOST: Interpersonal Regulation Scale/Hostility, IRIS/PP: Interpersonal Regulation Interaction Scale/Physical Presence, İERS_SM: Interpersonal Emotion Regulation Scale/Social Modeling, KDDÖ_ODA: Interpersonal Emotion Regulation Scale/ Enhancing Positive Affect, İERS/S: Interpersonal Emotion Regulation Scale/Soothing, İERS_PT: Interpersonal Emotion Regulation Scale/ Perspective Taking, DASS_S: Depression Anxiety Stress Scale/Stress, DASS_A: Depression Anxiety Stress Scale/Anxiety, DASS_D: Depression Anxiety Stress Scale/Depression, DERS: Difficulties in Emotion Regulation Scale, MSPSS: Multidimensional Perceived Social Support Scale, SD: Standard deviation.

Discussion

In this study, the adaptation of the Interpersonal Regulation Interaction Scale (IRIS), developed by Swerdlow and Johnson (2022), to the Turkish culture was carried out. According to the analysis results, the Turkish version of the IRIS was found to possess the necessary psychometric properties. The confirmatory factor analysis (CFA) indicated that the four-factor structure of the scale has satisfactory reliability. Item 26 from the hostility sub-dimension, due to its low standardized regression coefficient and item-total correlation, was removed from the scale as it was negatively affecting the model's fit. The specific item, " Told me I was being too emotional " is presumed not to be interpreted in a hostile context by the Turkish sample.

Cultural differences can affect the interpretation and evaluation of emotional expressions. For instance, while being emotional might be viewed as a positive attribute in some cultures, expressing personal feelings openly, it can be perceived as uncontrolled, weak, or overly reactive in others (Tsai 2007). In Turkish culture, being emotional typically signifies openly expressing one's inner thoughts, feelings, and maintaining warmth and sincerity in social relationships, which holds significant importance in interpersonal interactions (Kağıtçıbaşı 1996). Thus, the interpretation that the phrase " Told me I was being too emotional " is not considered hostile, suggests that emotionality is generally viewed as a positive trait within the Turkish cultural context (Kağıtçıbaşı 2014). Following this modification, the new model finalized with twenty-seven items and a four-factor structure. The fit of the newly created model and the fit indices obtained from the confirmatory factor analysis are presented in Table 1. Initially, the CFI index, which evaluates the fit between the hypothesized model and the actual model, indicated an acceptable fit with a score of .92. Moreover, the RMSEA value, also used to assess the model's fit, typically should be below .08 to represent an acceptable fit. In this study, this value was found to be below .08, indicating a good fit. Lastly, the GFI index, assessing the fit between the observed data and the theoretical model, should generally be above .85 to denote an acceptable fit. The GFI score of .864 in this study suggests an acceptable fit (Shevlin et al. 2000, Kline 2005, Munro 2005, Yılmaz and Çelik 2009, Sürücü et al. 2021). When looking at the original structure of the scale, the fit indices were similar to the main study: SRMR = .07, CFI = .91, RMSEA = .07 confidence interval [.064, .071]. Considering all these aspects, it is reported that the current model's fit indices are adequate and the model achieves results similar to the original study (Swerdlow and Johnson 2022). Therefore, we can assert that the first hypothesis has been supported.

In the criterion-related validity analyses of the study, when examining the relationships within the sub-dimensions of the scale, positive correlations were reported between responsiveness, cognitive support, and

physical presence as expected, while the hostility sub-dimension showed negative relationships with other sub-dimensions. The findings indicate that there are distinct relationships among the sub-dimensions of the Interpersonal Emotion Regulation Interaction Scale. The research demonstrates a connection between the display of physical proximity, the sensation of emotional support, and the endorsement of ideas. This suggests a positive relationship between physical closeness (such as hugging and touching) and both feeling emotionally valued and having one's thoughts validated. These results are consistent with studies that consider a partner's touch as a strategy for emotion regulation and show its impact on interpersonal emotion regulation and overall affect (Debrot et al. 2013). The hostility sub-dimension was found to be inversely related to physical presence, responsiveness, and cognitive support. This indicates that when individuals perceive physical closeness from others, receive sensitive responses to their emotions, and feel mental or cognitive support, they experience fewer hostile behaviors. Such findings align with social support theories and the literature on close relationships. For instance, the "Social Support Model" (Sarason et al. 1990) suggests that the quality of social support among individuals has a significant effect on relationship satisfaction and functionality. This model emphasizes that elements such as physical closeness, responsiveness, and cognitive support reinforce positive interactions among individuals, thereby potentially reducing negative relational traits like hostility. Moreover, studies by Gottman and Levenson (1986) on couples have reported that sensitivity and supportive behaviors within relationships increase satisfaction among couples and decrease conflicts.

When relating to the sub-dimensions of the Interpersonal Emotion Regulation Scale, the positive relationships between the sub-dimensions of responsiveness, cognitive support, and physical presence with the sub-dimensions of social modeling and enhancing positive emotions are notable. The hostility sub-dimension has a negative relationship with the sub-dimension of enhancing positive emotions, while it displays positive relationships with reassurance and perspective-taking. These findings suggest that the perceived significance, cognitive support, and physical closeness from others, in relation to the sub-dimensions of responsiveness, cognitive support, and physical presence, interact with efforts to engage in social learning and enhancing positive emotions during the use of emotion regulation strategies. In light of the literature, Bandura and Walters' (1977) social learning theory, which proposes that individuals learn through observing and imitating others, supports the influence of responsiveness, cognitive support, and physical presence on social modeling. Particularly, the theory highlights that positive social interactions provide models for individuals to learn social skills and emotional responses. Gross's (1998) emotion regulation theory examines how individuals manage their emotions. This theory offers a theoretical framework on how responsiveness and cognitive support are related to strategies for enhancing positive emotions. The negative relationship between the hostility sub-dimension and strategies for enhancing positive emotions indicates that when an individual encounters hostile behavior from another, it diminishes their efforts to enhance positive emotions. Additionally, individuals who prefer strategies like reassurance and perspective-taking for regulating their emotions tend to encounter more hostile attitudes. Current research demonstrates that the perception of hostility negatively impacts individuals' efforts to enhance positive emotions. For example, a study by Butler (2011) reports that individuals in hostile social environments are less likely to use strategies for enhancing positive emotions.

In the relationship between the scale's sub-dimensions and psychological symptom levels, negative and moderate correlations were observed between the sub-dimensions of responsiveness, cognitive support, and physical presence with stress, anxiety, and depression. Conversely, the hostility sub-dimension was found to have a positive and moderate significant relationship with stress, anxiety, and depression. These findings indicate that certain interpersonal emotion regulation interaction strategies are associated with levels of psychological symptoms. The relationships between interpersonal emotion regulation strategies and psychological symptom levels (depression, anxiety, and stress) display a complex structure. While some researchers find high-level relationships between these strategies and psychological symptoms (Hofmann et al. 2016), others report lower-level and specific strategy-related relationships (Koç et al. 2019, Gökdağ and Naldöken 2021, Ray-Yol et al. 2022). These results suggest that more detailed research is needed to understand the impact of interpersonal emotion regulation interaction processes on psychological symptoms.

In this study, the finding that strategies such as responsiveness, cognitive support, and physical presence—considered positive—are negatively correlated with psychological symptoms sheds light on an important point. It is noted that individuals who perceive that they are valued by others while using interpersonal emotion regulation interaction strategies, who think they are guided by the other party while solving problems, and who feel physical closeness and warmth, have lower levels of psychological symptoms. Similarly, the opposite is true for individuals who encounter hostile attitudes while regulating their emotions, these individuals have higher levels of psychological symptoms. These results are consistent with the findings of Hofmann and colleagues (2016), which further underscore the complex interplay between interpersonal emotional dynamics and mental

health outcomes.

In the relationship of the scale with emotion regulation difficulties, negative correlations were found between the sub-dimensions of responsiveness, cognitive support, and physical presence with emotion regulation difficulties. Conversely, a positive significant relationship was established between the hostility sub-dimension and emotion regulation difficulties. These results suggest that feeling emotionally understood, receiving cognitive support, and physical closeness can effectively reduce these difficulties. On the other hand, an increase in scores of the hostility sub-dimension with an increase in emotion regulation difficulties indicates that perceived hostile attitudes exacerbate the challenges associated with managing negative emotions. Emotion regulation difficulties describe situations where individuals lack the capacity to effectively manage and modify their emotional responses. These difficulties are a significant risk factor for psychological health and are associated with various mental health problems (Chapman et al. 2014). Zaki and Williams (2013) in their study examining how interpersonal relationships play a role in emotion regulation processes, propose that emotional support from others can enhance individuals' abilities to manage their own emotions. Moreover, studies emphasizing the importance of social relationships in meeting individuals' emotional needs support these findings (Collins and Feeney 2000). These results demonstrate that interpersonal emotion regulation strategies and social interactions have a significant impact on individuals' difficulties in regulating emotions. In the original study by Swerdlow and Johnson (2022), the relationship between the responsiveness sub-dimension and the Difficulties in Emotion Regulation Scale (DERS) was negatively significant ($r = -.27$, $p < .001$), and the relationship between the hostility sub-dimension and DERS was positively significant ($r = .32$, $p < .001$). Additionally, the relationship with the cognitive support sub-dimension was also negatively significant ($r = -.17$, $p < .001$). These results are consistent with the findings of the current study, highlighting similar patterns and validating the relationships between these sub-dimensions and emotion regulation difficulties.

The sub-dimensions of responsiveness, cognitive support, and physical presence have been found to be positively and moderately associated with perceived social support. Conversely, the hostility sub-dimension is negatively associated with perceived social support. These findings indicate that the sub-dimensions of interpersonal emotion regulation interaction are related to perceived social support. In the original study by Swerdlow and Johnson (2022), it was noted that responsiveness ($r = .43$, $p < .001$), cognitive support ($r = .20$, $p < .001$), and physical presence ($r = .10$, $p < .05$) exhibited positive significant relationships with social support, whereas the hostility sub-dimension showed a negative significant relationship with social support ($r = -.41$, $p < .001$). These results are consistent with those found in the Turkish sample and support the outcomes of this study. The literature discusses the central role of social support processes in interpersonal emotion regulation (Marroquin 2011). Gökdağ et al. (2019) reported positive relationships between interpersonal emotion regulation strategies and social support. Zaki and Williams (2013) propose that interpersonal interactions and social support can enhance individuals' interpersonal emotion regulation capabilities. These findings demonstrate that interpersonal emotion regulation processes are positively associated with perceived social support. Additionally, the results that mirror those of Swerdlow and Johnson's (2022) study indicate that research conducted in different cultural contexts can reveal similar trends. From this discussion, we can conclude that the second hypothesis of the study, which posits that the sub-dimensions of interpersonal emotion regulation are positively related to perceived social support, is supported. This underscores the importance of social support in facilitating effective interpersonal emotion regulation and highlights the consistency of these relationships across different studies and cultural contexts.

When examining the reliability analyses of the scale, the Cronbach's alpha coefficients were calculated as .92 for the responsiveness sub-dimension, .87 for the cognitive support sub-dimension, .75 for the hostility sub-dimension, and .80 for the physical presence sub-dimension. The overall reliability coefficient was determined to be .88. Büyüköztürk (2016) has emphasized that for Cronbach's alpha coefficients to be considered at acceptable levels, they should be .70 or higher. In this study, all sub-dimensions and the total reliability coefficient have been calculated to be above .70, indicating that these coefficients are consistent with the original form of the scale. Additionally, it has been reported that item-total correlations in this study range from .45 to .77. Item-total correlation values of .30 and above are considered significant for discriminative validity (Büyüköztürk 2016).

The high correlations obtained in the test-retest analyses of the scale (responsiveness sub-dimension .92, cognitive support sub-dimension .88, hostility sub-dimension .86, and physical presence sub-dimension .94) indicate that the scale measures its constructs with strong consistency. These findings suggest that the scale is highly reliable and the sub-dimensions it measures demonstrate high stability over time. High test-retest correlations are an important indicator of a scale's reliability (Kline 2013). Based on these results, the final hypothesis is also supported, confirming the scale's robustness and consistency in measuring interpersonal

emotion regulation interactions across different measurements.

The current study has several limitations. The sample used is focused on a specific group (married individuals), which may impose restrictions on the generalizability of the findings. Studies involving broader sample groups with diverse demographic characteristics and various age groups could yield more generalizable results. The measurement tools used in the study are self-report forms. A limitation here is the potential distortion of responses and the possibility of subjective answering, which can affect the accuracy and reliability of the data collected. Additionally, no pilot study was conducted during the adaptation process of the scale to Turkish. However, the adaptation and translation phase of the scale was carried out with great care by experts in the field.

Conclusion

In this study, the adaptation of the IRIS developed by Swerdlow and Johnson (2022) to a Turkish sample was conducted, and the Turkish version of the scale has demonstrated satisfactory reliability and validity findings. The analyses confirmed that the scale's four-factor structure is acceptable, and modifications made to the scale resulted in a model that produces results similar to those of the original study. The findings revealed relationships among the scale's sub-dimensions, particularly showing how the dimensions of responsiveness, cognitive support, hostility, and physical presence reflect various interpersonal emotion regulation strategies and their links to psychopathology, social support, and emotion regulation difficulties. The results underscore the potential of IRIS as a significant tool for understanding emotion regulation processes and examining interpersonal emotion regulation interactions.

Given that the sample was limited to married individuals, future studies could include other demographic groups or use a sample similar to the original study, which incorporated both university and clinical populations. Exploring the relationships of the scale with psychopathology in a clinical sample could be particularly insightful. This study represents the first adaptation of the scale, and future research should delve deeper into its cultural adaptation across a broader sample, and possibly extend the adaptations to other languages and cultures. Further studies are needed to understand how specific interpersonal emotion regulation interaction strategies affect particular psychopathological symptoms. Research with participants from different age groups, cultural, and socioeconomic backgrounds will help better understand the diversity and variability of emotion regulation processes. This scale could also be used in future studies with couples, exploring different variables related to interpersonal emotion regulation interaction strategies. These suggestions could assist future research in developing a more comprehensive and in-depth understanding of interpersonal emotion regulation processes.

The findings from this study highlight the significant impacts of interpersonal emotion regulation strategies on psychological health. Positive emotion regulation strategies such as responsiveness, cognitive support, and physical presence could effectively reduce psychological symptom levels, whereas hostility and negative emotion regulation strategies are associated with increased psychopathology symptoms. These insights could guide the development and implementation of therapeutic interventions. Therapists could encourage individuals to adopt and utilize positive interpersonal emotion regulation strategies to improve their psychological health. Furthermore, interventions aimed at enhancing relational dynamics and strengthening social support systems could enhance individuals' emotion regulation skills and overall psychological well-being. Future studies could explore the effectiveness of using this scale in clinical samples and therapy processes, further clarifying the role of interpersonal emotion regulation interventions in psychotherapy practices. This would enable a better understanding of the impact of emotion regulation and interpersonal relationships on psychological health and aid in developing effective intervention strategies.

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Addendum 1. Interpersonal Regulation Interaction Scale (IRIS)(Turkish version)

Having emotions is a natural part of life. We are interested in how interactions with other people affect our emotions. You might remember times when someone else's presence or something they did or said helped you to manage your emotions or feel better. These other people might include romantic partners, friends, family members, acquaintances, or anyone else.

More specifically, think about a time [or times] when you wanted to feel more or less positive, more or less negative, or more or less calm, and someone else tried to help you.

Rate each of the following statements based on what the other person actually did. They… [1 = Didn't do this at all; 5 = Did a lot of this] (or In general, I prefer it when the other person… [1 = Doesn't do this at all; 5 = Does a lot of this])

Interpersonal Regulation Interaction Scale (IRIS)(Turkish version)

1-Hiçbir zaman yapmaz, 5- Her zaman yapar

	1	2	3	4	5
1.Duygularımı onlarla paylaşmam için beni cesaretlendirdiler.					
2.Bana tavsiye verdiler.					
3. Bana karşı öfke veya düşmanlık gösterdiler.					
4. Bana karşı dürüst oldular.					
5. Durumu yeni bir bakış açısı ile görmeme yardımcı oldular.					
6. Anlayış ve ilgi ifade ettiler.					
7. Bana güldüler.					
8. Beni dinlemek için çaba sarf ettiler.					
9. Bana sahip olduğum güzel şeyleri hatırlattılar.					
10. Duygularımı görmezden geldiler veya geçersiz kıldılar.					
11. Beni yatıştırdılar veya teselli ettiler					
12. Problemi çözmeme yardım ettiler.					
13. Durumla ilgili düşüncelerim hakkında hemfikir oldular.					
14. Duygularımla ilgilendiler.					
15. Plan yapmama yardım ettiler.					
16. Fiziksel olarak yanımda olduklarını bana bildirdiler.					
17. Duygularımı anladılar					
18. Bana karşı kin ifade ettiler.					
19. Umut ışığı görmeme yardım ettiler.					
20. Duygularımı boğucu buldular.					
21. Duygusal olarak ulaşılabilir olduklarını beden dili aracılığıyla ilettiler(örneğin, göz teması, yüz ifadeleri, vücut duruşu)					
22. Duygularımı dışa vurmama izin verdiler.					
23. Duruma verdiğim tepkiyi eleştirdiler					
24. Düşüncelerini ve duygularını fiziksel temas yoluyla gösterdiler (örneğin, , bir omuz dokunuşu, bir sarılma gibi)					
25. Duygularımın anlaşılabilir veya akla yatkın olduğunu anlamama yardımcı oldular					
26. Bana çok duygusal olduğumu söylediler					
27. Duruma yönelik alternatif yorumlar yaptılar					
28. Bana sevgilerini veya olumlu kabüllerini hissettirdiler.					

Presentation

Items may be presented in a random order or in the order shown above.

Scoring

Items are summed to form subscales as shown below:

Responsiveness: 1, 4, 6, 8, 11, 13, 14, 17, 22, 25, 28
Hostility: 3, 7, 10, 18, 20, 23, 26
Cognitive Support: 2, 5, 9, 12, 15, 19, 27
Physical Presence: 16, 21, 24