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ASSESSING THE VALIDITY AND RELIABILITY OF THE TURKISH VERSION OF THE MATE RETENTION INVENTORY - SHORT FORM

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ABSTRACT

The current study examined the psychometric features of the Turkish translation of the Mate Retention Inventory-Short Form (MRI-SF) in Turkey. For this study, 286 participants were recruited with 78 participants (27.3%) being men and 208 participants (72.7%) women between the ages of 18 and 34 (M = 22.1, SD = 2.79). Participants were requested to complete a demographic form, the Turkish version of the Mate Retention Inventory-Short Form (MRI-SF), Rosenberg Self-Esteem Scale, and Multidimensional Jealousy Scale. Consistent with the earlier studies, the 19 mate retention tactics constituted a two-component structure. Sex differences in the adoption of mate retention strategies were investigated in order to assess the construct validity of the Turkish version of the MRI-SF. Additionally, the relationship between mate retention strategies and sexual jealousy and self-esteem was examined to determine the construct validity. The findings were in accordance with the previous studies and the analyses revealed that the Turkish MRI-SF is a valid measurement tool.

Keywords: Inventory, Short Form, Validity and Reliability, Turkish

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INTRODUCTION

From the point of evolutionary psychology, humans throughout their lives face several adaptive problems. Mating is one of the adaptive problems (Buss & Shackerford, 1997). People must reproduce in order to pass on their genes to the next generation, hence they must first find a mate. According to evolutionary psychology, mate selection is not a random process. Males are attracted to physical qualities like clean skin, which is a sign of a healthy condition, whereas females often prefer a mate who exhibits physical strength (Carducci, 2020). For instance, numerous research have supported the waist-to-hip ratio hypothesis of evolutionary psychology that a lower waist-to-hip ratio is associated with higher rankings of a woman's attractiveness among men (Henss, 2000). Furthermore, it was discovered that a man's perceived appeal to women was influenced by his waist-to-shoulder ratio, which may be an indicator of his physical strength (Braun & Bryan, 2006).

Selecting and attracting a mate does not guarantee the successful retention of the acquired mate (Buss & Shackelford, 1997). All of the effort, resources, and time that the human invested in the relationship runs the risk of being wasted when mate attraction is effective but mate retention is unsuccessful. Therefore, it is important for both males and females to retain their mates. The evolutionary drivers of mate retention motivation are different for each gender (Dally & Wilson 1983). When mate retention is inadequate, the main risk for males is to invest parental effort in someone else's offspring, which would entail spending significant resources for someone else's reproductive success (Buss, 2002). On the other hand, the resources that females have acquired through their mates, including money, status, and protection, are at risk of being lost if the acquired mate is not retained (Buss, 2002). Given that both sexes benefit reproductively from long-lasting pair bonding, both are driven to hold on to a long-term partner using different strategies (Buss, Shackelford, & McKibbin, 2008).

Mate retention behaviors, which can be divided into cost-inflicting and benefit-providing behaviors, pertain to tactics used to lessen the possibility that present romantic partners would leave or be unfaithful (Miner et al., 2009). The first effort to define and evaluate mate retention behavior in humans was made by Buss in 1988. The first measurement tool developed by Buss (1988) contained 104 items that corresponded to specific behaviors that people engage in to retain their partners. The

MRI was condensed by Buss et al. (2008) to 38 items. The short version of the MRI's total scores had a correlation with the long version of the scores of r = 0.96 (Buss et al., 2008).

Western and American samples have been the focus of the majority of studies on human mate retention. However, to assess the generalizability of some of the major findings identified in earlier research samples, it is crucial to use populations from different nations and people from various cultural backgrounds. Therefore, the availability of the Mate Retention Inventory Short-Form (Buss, Shackelford, & McKibbin, 2008) in different languages is important to fully understand mate retention behaviors.

Mate Retention Tactics

In 1988, Buss conducted the initial study on the topic of human mate retention. He grouped the various mate retention behaviors into 19 tactics that covered 104 distinct behaviors, ranging from vigilance to violence. With the publication of this study by Buss (1988), the first tool for assessing mate retention strategies emerged, making it feasible to measure the frequencies of the 19 mate retention tactics used by humans. Buss (1988) listed a number of strategies, some of which may be socially acceptable (such as giving a spouse a present of great value), while others may be socially unfavorable or undesirable (such as strategies involving violence, either toward the partner or the rival). The 104-item MRI has appropriate psychometric qualities (Shackelford, Goetz, & Buss, 2005). However, Buss et al. (2008) created the Mate Retention Inventory Short-Form in response to the time-consuming aspect of the original Mate Retention Inventory (Buss, 1988) which, in line with long-form MRI, showed adequate reliability and validity.

A lot of studies organized these 19 Mate Retention Tactics into two overarching domains. One way of grouping the mate retention tactics is through the categorization of each tactic as either intrasexual focused or intersexual focused. The former set of tactics are directed at same-sex rivals, while the latter are directed at one's romantic partner (Buss, 1988; Buss et al., 2018). Moreover, in the study of Miner, Starratt, and Shackelford (2009) a different structure for categorizing the 19 mate retention tactics was suggested. They used the terms cost-inflicting and benefit provisioning as two different groups that the different mate retention tactics fall into. While cost

inflicting behaviors refer to inflicting or threatening to inflict cost on the romantic partner in order to reduce the risk of mate infidelity, benefit provisioning acts refer to boosting relationship satisfaction of the partner in the interest of increasing the success rate of retaining the partner (Atari et al., 2017). When the partner, however, displays cost-inflicting behaviors in order to retain the mate, such that a man limiting his partner's social contacts and demanding her to devote her free time to spend with him, or derogating his partner in front of others (Miner, Shackelford, & Starratt, 2009), this could lead to side effects occurring. Such acts can harm a woman's self-esteem, or a decline in her social support system (McKibbin, Goetz, Shackelford, Schipper, Starratt, & Stewart-Williams, 2007; Miner, Shackelford, & Starratt, 2009). On the other hand, benefit provisioning mate retention behaviors include acts like complimenting on a partner's appearance, being available and showing compassion when she is feeling down, or bestowing expensive gifts to the partner. Because the benefit provisioning behaviors may have a positive impact on the partner's self-esteem and boost the satisfaction that the partner gets from the relationship, these acts may hinder the risk of partner infidelity and relationship withdrawal (Miner et al., 2009).

Sex differences in mate retention tactics

The possible consequences of the failure of mate retention determine the leading motive for both the males and females for retaining their current mate. In case of a withdrawal of a partner from the relationship, both sexes face the danger of losing all the investments that they have devoted so far to the relationship. Females are not at risk for cuckoldry and have absolute confidence in their offspring. However, as a result of partner infidelity, men would risk investing their resources in someone else's offspring. On the other hand, partner infidelity might harm females insofar that their partner can divert their resources away from her and their offspring (Albert & Arnocky, 2016). Since partner infidelity for both males and females causes a threat to reproductive success, mate retention and the behaviors devoted to that purpose are vital for all human beings.

The purpose of reproductive success has drawn females and males to partners that demonstrate particular characteristics. Across cultures, males report finding the physical attractiveness -key cues to fertility- of a partner more important than females

(Buss 1989). On the other hand, research by Buss (1989) revealed that women showed a stronger preference for men who are high in resource-provisioning abilities. These sex-linked aspects of mate value determine the intensity of displaying mate retention tactics for both females and males. Men who are together with a young and physically attractive woman tend to use mate retention tactics more frequently than men whose partners do not have such features (Buss & Shackelford, 1997). Moreover, males more than females engage in mate retention behaviors as the perceived risk of sexual infidelity of the partner is greater (Goetz, Shackelford,, Weekes-Shackelford, Euler, Hoier, Schmitt, & LaMunyon, 2005). The concern of men on paternal certainty might lead them to feel more threatened by potential sexual infidelity. The frequency of the women's engagement in the mate retention tactics, in contrast, is affected by the current resource holdings of their male partner, therefore male partners' higher status and resource holdings led women to use more mate retention tactics (Buss & Shackelford, 1997).

Men's preference for physical attractiveness and women's preference for status and resources in the potential partner have affected the use of mate retention tactics of males and females. Research from Croatia (Kardum, Hudek-Knezevic, & Gracanin, 2006), America (Buss & Shackelford, 1997) and Spain (Miguel & Buss, 2011) have demonstrated that women engage in appearance-enhancement which is one of the mate retention tactics and include behaviors like using makeup and dressing nicely more than men. Males in the same studies, in contrast, were more prone to engage in resource display as mate retention tactic than females. Moreover, males in Iran were as well found to be using mate retention behavior of resource display more than females (Atari et al., 2017).

Studies done in America revealed further sex differentiation on the mate retention tactics. According to the result of these studies, men (both unmarried and married) more than women use submission and self-abasement tactics as mate retention tactics (Buss, 1988b; Buss & Shackelford, 1997). Moreover, studies that used Croatian and Spanish samples replicated this sex difference and men in these samples as well reported greater use of the submission and self-abasement tactics (Kardum et al., 2006; De Miguel & Buss, 2011).

Self-Esteem and Mate Retention Tactics

Although the construct of self-esteem is being one of the most researched terms in the area of social and personality psychology, it is relatively recently that psychologists have attempted to discover the function of self-esteem from the evolutionary point of view (Bale & Archer, 2013). One of the most influential evolutionary theories that attempts to understand self-esteem as a construct and to examine its functionality is the sociometer theory (Leary and Downs 1995). Sociometer theory argues that not only the persons' belief about themselves but also the perceived inclusion of the person into a particular group setting as well as the evaluation of others contributes to the building of the persons' self-esteem. Moreover, the original sociometer research led to results in favor of the theory, and the relationship between perceived social exclusion and state self-esteem was observed (Leary, Tambor, Terdal, & Downs, 1995). Our ancestors were prone to evaluate themselves positively, and this predisposition was supported by the feeling of social inclusion (Kernis, 2013). Moreover, several studies done on the area of psychopathology revealed strong correlation between a person's feelings of social anxiety and loneliness and a person's self-esteem (Leary 1990, 2003).

In several studies the relationship between self-esteem and the use of mate retention behaviors which function as to reduce the risk of mate infidelity, was examined (Zeigler-Hill, Fulton & Mclemore, 2012; Holden, Shackelford, Zeigler-Hill, Miner, Kaighobadi, Starratt, & Buss, 2014). The research conducted by Zeigler-Hill, Fulton, and McLemore (2012) revealed the relationship between self-esteem and mate retention tactics and the results showed that the men who had a low self-esteem reported the highest levels of the mate retention tactics of direct guarding. Moreover, the people who scored lower on self-esteem, reported greater use of mate retention strategies, including, intersexual and intrasexual negative inducements and public signals of possession. On the other hand, those who had relatively higher self-esteem reported lower concerns about their partners infidelity and engaged in relatively fewer numbers of mate retention tactics (Zeigler-Hill et al., 2012). Therefore, a person's self-esteem can be the predictor of the frequency of his engagement on mate retention behaviors, so that the partner that has lower self-esteem engages more frequently in mate retention behaviors (Holden et al., 2014).

Romantic Jealousy and Mate Retention Tactics

Jealousy is an emotion that is led by the perceived or real threat to an interpersonal relationship. This emotion is frequently recognized as a negative emotion (Buunk & Bringle, 1987). Due to some studies that revealed a connection between jealousy and a number of damaging occurrences in human relationships, jealousy has come to be stigmatized as a negative emotion. For instance, the study by Arnocky, Sunderani, Miller, and Vaillancourt (2012) showed a positive correlation between a woman's predisposition to engage in relational aggression and her level of jealousy. Additionally, the feeling of satisfaction that couples have in their relationships may suffer as a result of their experiences with jealousy. The adverse correlation between jealousy and relationship satisfaction has been found in several studies (Shrestha, Rees, Rix, Hore, & Faragher, 1985; Barnett, Martinez, & Bluestein, 1995). Daly, Wilson, and Weghorst (1982) showed that male sexual jealousy was the primary motivation for homicide, which represented the worst possible outcome of male sexual jealousy.

Despite the research that reported the aversive outcomes of jealousy, this emotion has not always been perceived as negative. Evolutionarily, the emotion of jealousy has provided human beings with a number of adaptive functions (Buss, 2000). Jealousy might lead human beings to detect the threats to their romantic relationships quicker, therefore it diminishes the risk of the deterioration of that particular relationship. In the species with internal fertilization, the absolute confidence of the males about the parenthood of the offspring that was brought to the world by their partners is not possible. It was presumed by evolutionary psychologists that one of the adaptive problems that jealousy has helped to solve human beings was the problem of paternal certainty (Shackelford, Goetz, Buss, Euler, & Hoier, 2005). Females, on the other hand, hold no concern about maternal certainty. However, the potential loss of the social status gained through the partner as well as the potential loss of time, resources, and commitment of the partner are the risks for women. Consequently, the situations or the cues that elicit jealousy differ for males and females. Buss, Larsen, Westen, and Semmelroth (1992) reported that for men potential sexual infidelity caused the most distress, for women it was the potential emotional attachment of their partner to someone else that induced the feeling of distress utmost.

Both the jealousy as an emotion, and the behaviors that are evolutionarily called as mate retention tactics function as to solve the adaptive problems within the problem

of human mating. Mate retention behaviors are symptoms of jealousy (Shackelford et al., 2005), in other words, the behavioral outputs of feeling of jealousy are the mate retention tactics that human beings use in order to retain the acquired mate successfully. Furthermore, the type of jealousy that a person experiences might predict which domain of mate retention tactics the person would engage in. According to Davis et al. (2018), those who experience more preventative jealousy were more likely to utilize cost-inflicting mate retention strategies, whereas experience of anxious jealousy was linked to benefit-providing strategies.

Current Study and Rationale

Previous research on human mate retention tactics has primarily focused on Western samples; there has been limited research with non-Western samples. The availability of scales, questionnaires, or survey questions that have already been tested for their reliability and validity and have been reported to be reliable and valid in the local language of the specific country is another factor that may have an impact on the plausibility of the research that is to be conducted there. The Mate Retention Inventory was created in 1988 (Buss, 1988a; 1988b) and the revised short form of it was published in 2008 (Buss, Shackelford, & McKibbin, 2008). It was translated into several different languages such as Brazilian Portuguese (Lopes, Shackelford, Santos, Farias, & Segundo, 2016), Persian (Atari et al., 2017), and Spanish (de Miguel & Buss, 2011), and was evaluated in terms of its psychometric properties. To our knowledge, there has been no research that completed the translation and the assessment of reliability and validity of the Mate Retention Inventory Short-Form (Buss et al., 2008) in the Turkish language.

Most of the studies that were done in the realm of mate retention tactics used samples consisting of European and American individuals. However, it is important to investigate the influence of the countries' cultural aspects on the individual experiences of mate retention behavior. For instance, women in Brazil, which is a collectivist culture (Triandis, 2018), are more prone to use mate retention tactics than women in England, a more individualistic culture (Hofstede, 1984) (Nascimento & Little 2019).

This study seeks to cross-culturally adapt the Mate Retention Inventory Short-Form to the Turkish language and to offer the new self-report measure to the literature.

Moreover, this study evaluates the factor structure of the Turkish MRI-SF. Reliability analysis was conducted by assessing the internal consistency of the Turkish version of the MRI-SF. Previous research revealed the association between several variables and the frequency of people displaying mate retention behavior. For instance, it was indicated that those with higher self-esteem use partner retention strategies less frequently (Zeigler-Hill et al., 2012), and individuals with higher levels of jealousy use mate retention strategies more frequently (Davis et al., 2018). Additionally, numerous studies showed that mate retention strategies differ depending on sex. The objective of this study is to confirm the construct validity of the Turkish version of the MRI-SF by replicating previously described correlates of mate retention behavior and cross-cultural sex differences in mate retention strategies.

METHODS

Participants

The data was collected from 286 university students who were currently in a romantic relationship. 78 participants (27.3%) were males and 208 participants (72.7%) were females. The age of the participants ranged from 18 to 32 for males (M=23.1, SD=3.16) and 18 to 34 for females (M=21.7, SD=2.54). The average length of the participant's romantic relationships was 18.8 months (SD=18.5, range=1-84). While for female participants the mean length of the romantic relationship was 18.7 (SD=18.9, range=1-84), and for males the mean length of the romantic relationship was 19 (SD=17.5, range=1-72).

Instruments

Initially, participants were asked to fill out a demographic form in which they were asked questions about their sex, age, their romantic relationship status, and the length of their current relationship. After the demographic information form, only those who were currently involved in a romantic relationship were allowed to continue and display the further questions. A set of scales were given to participants who were currently in a romantic relationship. The set included the Turkish Version of the Mate Retention Inventory Short Form, Rosenberg Self-Esteem Scale, and Multidimensional Jealousy Scale.

Mate Retention Inventory Short-Form

The first instrument to measure the performance frequency of the mate retention tactics of human beings was created by Buss in 1988. However, since the scale consisted of 104 items and was time demanding, in 2017 a shorter version of the scale was presented by Buss et al. (2008). The Mate Retention Inventory Short-Form consists of 38 items in total, with 19 mate retention tactics being measured. On a four-point Likert-type scale ranging from 0 (never) to 3 (often), participants are asked to rate the frequency with which they practice these 38 mate retention behaviors.

In order to accomplish the translation of the scale, a couple of steps were followed. Firstly, the scale was translated into the Turkish language by two bilingual individuals. Then the back translation of the scale was done by two different bilingual individuals. When an agreed upon final version of the scale was constructed, the Turkish MRI-SF was sent to a bilingual scholar for feedback and revision. Consequently, two versions of the Mate Retention Inventory Short Form were created: MRI-SF for heterosexual male and MRI-SF for heterosexual female participants.

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (1965) was used to evaluate the construct validity of the Turkish version of the Mate Retention Inventory Short-Form. Rosenberg's Self-Esteem Scale was created by Rosenberg in 1965. The simplicity, face validity, and the required duration of time being short in order to complete the scale were the features that led this self-report method to be the most widely used scale to assess global self-esteem (Sinclair, Blais, Gansler, Sandberg, Bistis, & LoCicero, 2010).

Rosenberg's self-esteem scale is a Gutmann scale and the response categories consist of 1=strongly agree, 2=agree, 3=disagree and 4=strongly disagree. The measurement tool involves 10 items which 5 of them are being negatively worded (e.g. I feel I do not have much to be proud of) and 5 of the 10 items are being positively worded (e.g. I take a positive attitude toward myself). The psychometric evaluations of the scale proposed this scale to be reliable and valid. The test-retest reliability of the Rosenberg Self-Esteem Scale for the period of 2 weeks showed correlations of .85 and .88, indicating excellent reliability (Rosenberg, 1965). Furthermore, the correlations between other measures of self-esteem and the Rosenberg Self-Esteem Scale were

found to be significant, suggesting the concurrent validity of the scale (Rosenberg, 1965).

The Rosenberg self-esteem scale was adapted to the Turkish language in 1986 by Çuhadaroğlu. The test-retest reliability coefficient of the Turkish Version of the Rosenberg Self-Esteem Scale was reported to be .71 at 4 weeks intervals by Çuhadaroğlu (1986). Moreover, it was reported by Deniz, Kesici, and Sümer (2008) that the Turkish Rosenberg Scale moderately correlated with the Turkish version of the Self Compassion scale (r=.62, p=<.001), indicating the scale's construct validity.

Multidimensional Jealousy Scale

The Turkish version of the Multidimensional Jealousy Scale was included in the research survey with the aim of evaluating the construct validity of The Turkish version of the Mate Retention Inventory Short-Form. Pfeiffer and Wong (1989) developed the instrument and evaluated its psychometric qualities. The Multidimensional Jealousy Scale consists of three subscales, namely cognitive, emotional, and behavioral subscales, and each one of the subscales involves 8 items. The scale was created as a 7 point Likert scale. For the emotional subscale, the response alternatives vary from 1=very pleased to 7=very upset, whereas the response categories for the cognitive and behavioral subscales range from 1=never to 7=all the time.

Reliability analysis was computed by means of Cronbach's alpha for the Multidimensional Jealousy Scale. The alpha values were reported as .92, .85, and .89 for cognitive, emotional, and behavioral subscales, respectively (Pfeiffer & Wong, 1989). Moreover, the test-retest reliability coefficient were found to be significant for cognitive (r=0.75, p=<.001), behavioral (r=0.34, p=<.05) and emotional (r=0.82, p=<.001) subscales (Pfeiffer & Wong, 1989).

The Multidimensional Jealousy Scale was translated to Turkish by Karakurt (2001). In the study that was conducted by Metiner (2017), the Turkish version of the scale was examined in terms of its psychometric properties. The factor structure of the Turkish version of the scale was found to be consistent with the original scale and 3 factors were obtained. Furthermore, as the result of the reliability analysis, the Cronbach alpha values for the behavioral, cognitive, and emotional subscales were reported subsequently as .80, .84, and .81 (Metiner, 2017).

PROCEDURE

Once the ethical approval was received from the University Ethics Committee, the data collection procedure of the study started. The data was collected via Google Forms which is an online survey software for data collection. The data was collected via an online platform due to the higher chance of reaching more participants under the conditions of the Covid-19 pandemic. Convenience sampling was used as a sampling method in the current study and the individuals who were studying at Istanbul Bilgi University and were currently in a heterosexual relationship were involved in the study. The online link for the invitation of the survey participation was distributed to students via the help of social media. Moreover, the students enrolled in the child development class were offered extra credits by their lecturer in case they completed the survey.

At the beginning of the online survey, participants were presented with the Informed Consent Form and they were informed briefly about the aim of the study. Moreover, it was stated in the form that they could leave the survey anytime without completing it, and participants were ensured about the confidentiality of their data. Once the participants gave consent to participate in the research, they were asked to fill out the Demographic Form, Turkish Version of the Mate Retention Inventory Short-Form, Rosenberg Self-Esteem Scale, and Multidimensional Jealousy Scale, respectively.

Statistical Analyses

The Statistical Package for Social Sciences (SPSS), version 28.0 for Windows, was used for statistical analyses. Prior to the further analyses, the skewness and kurtosis of the frequency distribution were tested. Then, correlation coefficients were calculated between the study variables. Moreover, a principal component analysis was conducted in order to examine the factor structure of the Turkish version of the MRI-SF. Afterward, by measuring Cronbach's alpha, the internal consistency of the Turkish MRI-SF was assessed. Lastly, with the aim of establishing the construct validity of the new scale, multiple t-tests were run to examine sex differentiation in performance frequencies in the mate retention tactics, and a hierarchical multiple regression analysis was conducted to evaluate the association between self-esteem and sexual jealousy with mate retention tactics.

RESULTS

Correlation Coefficients Between the Measures of the Study

Pearson correlation coefficients were calculated to examine the intercorrelations between the study variables. Table 1 depicts the bivariate correlations between the study variables.Sexual jealousy was correlated significantly and positively with each mate retention tactic except the mate retention tactic of resource display (r=.10, p=.091). Moreover, sexual jealousy and overall mate retention tactics were significantly and positively correlated with each other (r=.50, p=<.001). Self-esteem was significantly and negatively correlated with the mate retention tactic of monopolization of time (r=-.14, p=.021), punish mate's infidelity threat (r=-.16, p=.009), commitment manipulation (r=-.12, p=.047), appearance enhancement (r=-.14, p=.016), verbal possession signals (r=-.12, p=.037), and overall mate retention tactics (r=-.13, p=.023). Thus, participants who scored lower on self-esteem were more likely to display mate retention tactics of monopolization of time, punish mate's infidelity threat, commitment manipulation, appearance enhancement, and verbal possession signals than participants who scored higher on self-esteem.

Gender was significantly and negatively correlated with concealment of mate (r=-.12, p=.037), emotional manipulation (r=-.21, p=<.001), commitment manipulation (r=-.17, p=.003), resource display (r=-.28, p=<.001), sexual inducements (r=-.13, p=.028), love and care (r=-.13, p=.030), submission and debasement (r=-.29, p=<.001), physical possession signals (r=-.26, p=<.001), intrasexual threats (r=-.30, p=<.001), and violence against rivals (r=-.31, p=<.001). Gender and appearance enhancement was positively correlated with each other (r=.23, p=<.001). Furthermore, gender was negatively correlated with overall mate retention tactics (r=-.23, p=<.001).

The age of participants was significantly and negatively correlated with vigilance (r=-.13, p=.028) and derogation of mate (r=-.127, p=.031). However, there was not a significant correlation between age and overall mate retention tactics. Furthermore, relationship length was significantly and positively correlated with vigilance (r=.219, p=<.001), resource display (r=.188, p=.001), emotional manipulation (r=0.148, p=.012), and possessive ornamentation (r=.168, p=0.004). A significant correlation between the overall mate retention tactics and the relationship length was not detected.

Correlation Coefficients Between the Study Variables

Variables	1		2		3		4		5		6		7		8	
1. Participant's Sex	—															
		*														
		*														
2. Participant's Age	-0.22	*	—													
3. Relationship Length	-0.01		0.14	*	—											
						*										
						*										
4. Vigilance	0.05		-0.13	*	0.22	*	—									
								*								
								*								
5. Concealment of mate	-0.12	*	-0.03		0.12		0.30	*	—							
								*		*						
								*		*						
6. Monopolization of time	0.03		-0.10		0.05		0.41	*	0.35	*	—					
								*				*				
								*				*				
7. Jealousy induction	0.05		-0.11		-0.06		0.25	*	0.08		0.22	*	—			
8. Punish mate's infidelity threat	0.09		-0.05		0.08		0.38	*	0.34	*	0.45	*	0.41	*	—	
		*								*		*				
9. Emotional manipulation	-0.21	*	-0.01		0.09		0.15	*	0.21	*	0.29	*	0.11		0.18	*
10. Commitment manipulation	-0.17	*	-0.04		0.08		0.28	*	0.26	*	0.31	*	0.10		0.26	*
11.. Derogation of competitors	-0.10		-0.05		0.07		0.20	*	0.19	*	0.17	*	0.25	*	0.29	*
		*														
12.. Resource display	-0.28	*	-0.02		0.19	*	0.16	*	0.16	*	0.15	*	0.06		0.14	*
13 Sexual inducements	-0.13	*	-0.01		0.02		0.14	*	0.14	*	0.22	*	0.31	*	0.21	*
14. Appearance enhancement	0.23	*	-0.02		-0.04		0.19	*	0.16	*	0.25	*	0.29	*	0.27	*
15. Love and care	-0.13	*	-0.01		0.00		0.05		0.17	*	0.18	*	0.11		0.11	

16. Submission and debasement	-0.29***	0.01	0.07	0.16**	0.22***	0.25***	0.16**	0.14*
17. Verbal possession signals	-0.04	-0.09	-0.06	0.18**	0.18**	0.24***	0.26***	0.12*
18. Physical possession signals	-0.26***	0.01	-0.03	0.11	0.14*	0.16**	0.18**	0.23***
19. Possessive ornamentation	-0.09	-0.04	0.17**	0.21***	0.28***	0.26***	0.12*	0.22***
20. Derogation of mate	0.09	-0.13*	0.09	0.30***	0.13*	0.18**	0.31***	0.26***
21. Intrasexual threats	-0.30***	-0.03	0.07	0.18**	0.42***	0.22***	0.17**	0.27***
22. Violence against rivals	-0.31***	0.04	0.02	0.11	0.17**	0.03	0.24***	0.06
23. Self-Esteem	-0.10	0.07	-0.04	-0.07	-0.10	-0.14*	-0.08	-0.16**
24. Sexual Jealousy	0.04	-0.11	0.08	0.55***	0.38***	0.38***	0.20***	0.42***
25. Overall MRT	-0.23***	-0.07	0.11	0.45***	0.48***	0.51***	0.43***	0.52***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. MRT= Mate Retention Tactics.

Correlation Coefficients Between the Study Variables

Variables	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
1. Participant's Sex								
2. Participant's Age								
3. Relationship Length								
4. Vigilance								
5. Concealment of mate								
6. Monopolization of time								

7. Jealousy induction																				
8. Punish mate's infidelity threat																				
9. Emotional manipulation	—																			
10. Commitment manipulation	0.56	**	—																	
11.. Derogation of competitors	0.34	**	0.32	**	—															
12.. Resource display	0.15	**	0.16	**	0.12	**	—													
13 Sexual inducements	0.25	**	0.22	**	0.28	**	0.25	**	—											
14. Appearance enhancement	0.15	**	0.25	**	0.26	**	0.13	**	0.50	**	—									
15. Love and care	0.35	**	0.22	**	0.18	**	0.20	**	0.39	**	0.33	**	—							
16. Submission and debasement	0.46	**	0.37	**	0.20	**	0.24	**	0.27	**	0.27	**	0.45	**	—					
17. Verbal possession signals	0.42	**	0.30	**	0.33	**	0.10		0.30	**	0.31	**	0.37	**	0.36	**				
18. Physical possession signals	0.34	**	0.28	**	0.31	**	0.22	**	0.36	**	0.28	**	0.44	**	0.30	**				
19. Possessive ornamentation	0.26	**	0.31	**	0.10		0.23	**	0.23	**	0.21	**	0.10		0.29	**				
20. Derogation of mate	0.02		0.11		0.25	**	0.14	**	0.11		0.17	**	-0.02		0.06					
21. Intrasexual threats	0.40	**	0.43	**	0.33	**	0.25	**	0.15	**	0.12	**	0.20	**	0.36	**				
22. Violence against rivals	0.14	**	0.25	**	0.20	**	0.19	**	0.17	**	0.11		0.10		0.21	**				
23. Self-Esteem	-0.10		-0.12	*	-0.07		0.02		-0.05		-0.14	*	-0.11		-0.06					

			*		*		*						*				*			
24. Sexual			*		*		*						*				*			
Jealousy	0.26	*	0.36	*	0.26	*	0.10		0.15	*	0.23	*	0.13	*	0.24	*				
			*		*		*		*		*		*		*					
25. Overall			*		*		*		*		*		*		*					
MRT	0.62	*	0.62	*	0.56	*	0.42	*	0.56	*	0.52	*	0.51	*	0.59	*				

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. MRT= Mate Retention Tactics.

Correlation Coefficients Between the Study Variables

Variables	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**
1. Participant's Sex									
2. Participant's Age									
3. Relationship Length									
4. Vigilance									
5. Concealment of mate									
6. Monopolization of time									
7. Jealousy induction									
8. Punish mate’s infidelity threat									
9. Emotional manipulation									
10. Commitment manipulation									
11.. Derogation									

of competitors																		
12.. Resource display																		
13 Sexual inducements																		
14. Appearance enhancement																		
15. Love and care																		
16. Submission and debasement																		
17. Verbal possession signals	—																	
18. Physical possession signals	0.42	* * *	—															
19. Possessive ornamentation	0.16	* * *	0.20	* * *	—													
20. Derogation of mate	0.20	* * *	0.01		0.12	* * *	—											
21. Intrasexual threats	0.29	* * *	0.35	* * *	0.30	* * *	0.16	* * *	—									
22. Violence against rivals	0.17	* * *	0.17	* * *	0.30	* * *	0.10		0.42	* * *	—							
23. Self-Esteem	-0.12	*	-0.02		0.02		-0.02		-0.03		-0.02		—					
24. Sexual Jealousy	0.19	* * *	0.15	* * *	0.28	* * *	0.28	* * *	0.34	* * *	0.23	* * *	-0.13	* * *	—			

		*		*		*		*		*		*				*						
25. Over-		*		*		*		*		*		*				*						
all MRT	0.60	*	0.60	*	0.47	*	0.33	*	0.63	*	0.39	*	-0.13	*	0.50	*	—					

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. MRT= Mate Retention Tactics.

Factor Structure of the Turkish Version of the MRI-SF

Principal component analysis was conducted to examine the Turkish MRI-SF's factor structure. As a preliminary step, to test the data's suitability for conducting PCA, Kaiser–Meyer–Olkin (KMO) and Bartlett's test of sphericity were conducted. Both KMO (.84) and Bartlett's test of sphericity [$\chi 2$ (171) = 1465, $p \leq .001$] confirmed the suitability of the data for conducting PCA. Five factors with eigenvalues over 1 were obtained as a result of the first PCA with varimax rotation and these factors accounted for 56.9% of the total variance. However, only the first 2 eigenvalues of the data had a bigger value (λ=5.22, λ=1.77) than the eigenvalues from the parallel analysis (λ=1.59, λ=1.56) and the third component had a lower eigenvalue (λ=1.49) than its corresponding eigenvalue from the parallel analysis (λ=1.52). The Horn criterion recommends keeping components whose eigenvalue in observed data is larger than the corresponding eigenvalue from the parallel analysis (Horn, 1965). Moreover, parallel analysis has established a solid agreement in the literature as one of the most accurate methodologies for retaining factors (Hayton, Allen, and Scarpello 2004; Lance, Butts, and Michels 2006). Therefore, a second PCA analysis with varimax rotation was run and the number of components was fixed to number 2.

Results of the second PCA revealed that the factors had eigenvalues of 5.22 and 1.77 and accounted for 36.8% of the total variance together. Factor loadings for the first factor ranged from 0.39 to 0.70 and for the second factor from 0.48 to 0.72. Cronbach's alphas of the factors calculated as 0.83 for the first component and 0.71 for the second component. See Table 2.

Table 2.

Results From the Principal Component Analysis of the Mate Retention Inventory Short Form

Item	Factor 1	Factor 2	h^2
Love and care	**0.70**		.50
Emotional manipulation	**0.69**		.49
Submission and debasement	**0.68**		.47
Physical possession signals	**0.68**		.46
Verbal possession signals	**0.62**		.41
Commitment manipulation	**0.57**		.41
Sexual inducements	**0.54**		.34
Intrasexual threats	**0.53**		.38
Appearance enhancement	**0.42**		.32
Derogation of competitors	**0.42**		.33
Possessive ornamentation	**0.41**		.31
Violence against rivals	**0.41**		.23
Resource display	**0.39**		.25
Punish mate's infidelity threat		**0.72**	.55
Vigilance		**0.69**	.49
Derogation of mate		**0.61**	.39
Monopolization of time		**0.60**	.41
Jealousy induction		**0.55**	.33
Concealment of mate		**0.48**	.32
Eigenvalue	5.22	1.77	
% Variance	21.5	15.4	

Internal consistency (α)	0.83	0.71

Note. *N*=286. Factor 1 = benefit-provisioning mate retention; Factor 2 = cost-inflicting mate retention.

Reliability Analysis of the Turkish version of the MRI-SF

The reliability of the MRI-SF was assessed by the method of internal consistency. Cronbach's alpha values for each mate retention tactic and Cronbach's alpha value of the MRI-SF, including all 38 items, were calculated.

Cronbach's alpha values of 19 mate retention tactics ranged from .33 to .91. Punish mate's infidelity threat and commitment manipulation had the lowest internal consistency with the alpha value of .33. Moreover, intrasexual threats showed the highest internal consistency with the alpha value of .91. Cronbach's alpha value for the Turkish version of the MRI-SF was .87. See Table 3.

Table 3.

Cronbach Alpha Values for the Turkish MRI-SF

Mate Retention Tactics	Item Number	Cronbach's alpha
Vigilance	01 and 20	0.43
Concealment of mate	02 and 21	0,61
Monopolization of time	03 and 22	0.42
Jealousy induction	04 and 23	0.86
Punish mate's infidelity threat	05 and 24	0.33
Emotional manipulation	06 and 25	0.72
Commitment manipulation	07 and 26	0.33
Derogation of competitors	08 and 27	0.75
Resource display	09 and 28	0.63
Sexual inducements	10 and 29	0.37
Appearance enhancement	11 and 30	0.55
Love and care	12 and 31	0.60
Submission and debasement	13 and 32	0.63
Verbal possession signals	14 and 33	0.65
Physical possession signals	15 and 34	0.76

Possessive ornamentation	16 and 35	0.50
Derogation of mate	17 and 36	0.40
Intrasexual threats	18 and 37	0.91
Violence against rivals	19 and 38	0.55
Turkish MRI-SF	All Items	0.87

Validity Analysis of the Turkish Version of the MRI-SF

To evaluate the construct validity of the Turkish version of the MRI-SF, sex differences in the use of mate retention tactics were examined. Moreover, construct validity was investigated by assessing the association of mate retention tactics with self-esteem, and sexual jealousy.

Sex Differences in Mate Retention Tactics Performance Frequency

To investigate the sex differences in the performance frequency of mate retention tactics, a set of independent samples t-tests was conducted. To reduce the risk of occurrence of type 1 error, the critical p-value was adjusted according to the Bonferroni correction and the comparisons were considered significant at a p-value of .003. According to the t-test results, a significant effect of gender was observed on the performance frequency of the mate retention tactics of emotional manipulation, resource display, appearance enhancement, submission and debasement, physical possession signals, intrasexual threats, and violence against rivals. Turkish male participants reported a significantly higher frequency of performing emotional manipulation, $t(284)=3.64$, $p<.001$, resource display, $t(284)=4.9$, $p<.001$, submission and debasement, $t(284)=5.01$, $p<.001$, physical possession signals, $t(284)=4.59$, $p<.001$, intrasexual threats, $t(284)=5.30$, $p<.001$, and violence against rivals, $t(284)=5.52$, $p<.001$. On the other hand, Turkish female participants scored significantly higher than Turkish male participants on the performance frequency of appearance enhancement, $t(284)=3.91$, $p<.001$.

As a measure of effect size, Cohen's d was calculated for each tactic and reported as $d=0.48$ for emotional manipulation, $d=0.65$ for resource display, $d=0.67$ for submission and debasement $d=0.61$ for physical possession signals, $d=0.70$ for intrasexual threats, $d=0.73$ for violence against rivals, and $d=-0.52$ for appearance enhancement. See Table 4.

Table 4.

Sex Differences in Mate Retention Tactics

Mate Retention Tactics	Item Number	Men		Women		Sex Effect (*t*)	*p*	Sex Effect (Cohen's *d*)
		M	*SD*	*M*	*SD*			
Vigilance	01 and 20	0.43	0.62	0.50	0.61	-0.87	.385	-0.12
Concealment of mate	02 and 21	0.50	0.60	0.33	0.62	2.09	.037	0.28
Monopolization of time	03 and 22	0.42	0.52	0.47	0.64	-0.54	.591	-0.07
Jealousy induction	04 and 23	0.15	0.46	0.22	0.54	-0.90	.368	-0.12
Punish mate's infidelity threat	05 and 24	0.56	0.66	0.71	0.75	-1.57	.118	-0.21
Emotional manipulation	06 and 25	1.4	0.98	0.96	0.93	3.64*	<.001	0.48
Commitment manipulation	07 and 26	0.97	0.90	0.66	0.73	2.96	.003	0.39
Derogation of competitors	08 and 27	0.99	0.91	0.79	0.90	1.67	096	0.22
Resource display	09 and 28	1.63	0.89	1.09	0.81	4.90*	<.001	0.65
Sexual inducements	10 and 29	1.48	0.76	1.25	0.79	2.21	.028	0.29
Appearance enhancement	11 and 30	1.32	0.77	1.72	0.77	3.91*	<.001	-0.52
Love and care	12 and 31	2.51	0.56	2.32	0.71	2.18	.03	0.29
Submission and debasement	13 and 32	1.44	0.72	0.98	0.68	5.01*	<.001	0.67

Verbal possession signals	14	and	1.52	0.98	1.44	0.87	0.65	.519	0.09
	33								
Physical possession signals	15	and	2.22	0.76	1.64	1.01	4.59*	<.001	0.61
	34								
Possessive ornamentation	16	and	0.4	0.67	0.28	0.57	1.55	.122	0.21
	35								
Derogation of mate	17	and	0.25	0.56	0.36	0.57	-1.50	.135	-0.20
	36								
Intrasexual threats	18	and	1.56	1.14	0.84	0.98	5.30*	<.001	0.70
	37								
Violence against rivals	19	and	0.39	0.73	0.06	0.28	5.52*	<.001	0.73
	38								

**p < .003.*

Self-Esteem and Sexual Jealousy as Predictors of Mate Retention Tactics

Hierarchical multiple regression analyses were conducted to examine the relationships between the criterion variable (mate retention tactics) and predictors (self-esteem and sexual jealousy). The analysis involved two models and both models used the enter method. Gender was entered into the regression equation in the first model as a control variable. Other demographic variables, age and relationship length, were not controlled due to insignificant correlations with mate retention tactics. Gender was significantly associated with mate retention tactics. In the second model, self-esteem and sexual jealousy were entered into the regression equation.

The first step of the analysis revealed that gender accounted for a significant amount of variation in mate retention tactics ($R^2 = .05$, $F(1, 284) = 15.4$, $p = < .001$). It was found that gender predicted a significant variance on mate retention tactics ($\beta = -.13$, $p < .001$).

In the second step, self-esteem and sexual jealousy were entered into the model and these variables significantly contributed to the amount of explained variation in mate retention tactics ($R^2 = .32$, $\Delta R^2 = .27$, $\Delta F(2, 282) = 55.6$, $p < .001$). Both the predictive variables, self-esteem ($\beta = -.11$, $p= .03$) and sexual jealousy ($\beta = .49$, $p < .001$), were found to be significantly associated with mate retention tactics. Additionally, the change in R^2 was 0.27, indicating that these two variables together contributed

an additional 27% of the variance in the mate retention tactics. Results indicated that participants who had lower self-esteem used fewer mate retention tactics. On the other hand, participants who scored higher on sexual jealousy used mate retention tactics more frequently. See Table 5.

Table 5.
Results of the Hierarchical Regression Analysis for Predicting Mate Retention Acts

Predictor	***R***	***R²***	***ΔR²***	***F***	***ΔF***	***B***	***SE***	***β***
Model 1	.23	.05	.05	15.4	15.4			
Gender						-.2	.05	-.23***
Model 2	.57	.32	.27	44.2	55.6			
Gender						-.23	.04	-.26***
Self-esteem						-.07	.03	-.11*
Sexual Jealousy						.23	.02	.49***

Note. N =286*; *p < .05, **p < .01, ***p< .001.*

DISCUSSION

This study was conducted with the aim of testing the psychometric properties, namely the reliability and the validity, of the Turkish version of the Mate Retention Inventory Short-Form. Within the scope of the aims of the study, Cronbach's alpha values of each of the mate retention tactics were calculated for testing the internal reliability of the Turkish translation of the MRI-SF. The minimum Cronbach alpha value for good reliability was suggested to be .70 (Nunnally, 1970). Although for two-item scales Cronbach's alpha appears to be a good measurement for internal reliability (Eisinga, TeGrotenhuis, & Pelzer, 2013), it is expected that the alpha values may be lower than .70 for scales that contain very few items (Lopes et al., 2016).

Findings of the current research revealed that most of the Mate Retention Tactics had Cronbach's alpha values lower than .70. However, the internal consistencies were in accordance with the study of Buss et al. (2008) and previous psychometric studies of the MRI-SF in Persian (Atari et al., 2017), and Spanish languages (de Miguel & Buss, 2011), as in these studies the majority of the Cronbach's alpha values of the tactics were lower than the minimum acceptable level. Moreover, the alpha values in the

current research were comparable to that of previous studies (e.g. Buss et. al., 2008). Taking into account that each tactic consists of only two items, the Turkish version of MRI-SF demonstrated an acceptable level of internal consistency.

With the purpose of establishing the construct validity of the Turkish version of the MRI-SF, the correlates of mate retention tactics with sexual jealousy, and self-esteem were examined. Moreover, as part of the evaluation of the construct validity of the Turkish MRI-SF, the sex differences in the performance frequencies of the mate retention tactics were analyzed. Findings of the current research replicated previously reported cross-cultural sex differences in mate retention tactics. Furthermore, mate retention tactics were found to be significantly associated with sexual jealousy and self-esteem.

In this section, factor structure and the results of reliability and validity analysis of the Turkish MRI-SF will be discussed by referring to the relevant literature. Subsequently, the strengths, contributions, and limitations of the study will be presented and suggestions for future research will be discussed.

Discussion regarding factor structure

To examine the factor structure of the Turkish version of the Mate Retention Inventory Short-Form, a principal component analysis was performed. The results suggested a two-component structure for the Turkish version of MRI-SF. In the original MRI (Buss, 1988), and MRI-SF (Buss et al., 2008) 19 mate retention tactics were organized into two domains. However, the current scale diverged from the conceptualization offered by the original studies as the categorization of Buss (1988) and Buss et al. (2018) were based on who the mate retention tactics were directed, namely intrasexual and intersexual manipulations. In the current study, although both of the mate retention tactics, monopolization of time and love and care, are directed towards one's partner, were loaded into the two different factors. Moreover, vigilance which is a mate retention tactic for intrasexual manipulation, and monopolization of time which is an intersexual manipulation tactic were loaded into the same component.

Another factor structure for MRI-SF was offered by Miner et al. (2009) and they conceptualized the 19 mate retention tactics into two domains, namely, benefit provisioning and cost inflicting tactics. The factor structure of the Turkish MRI-SF identified in the present study resembles the structure proposed by Miner et al. (2009).

The first factor of Turkish MRI-SF contains largely benefit-providing techniques, whereas Component 2 contains only cost-inflicting strategies. Moreover, the first factor which was named following the suggestion of Miner et al. (2009) as benefit provisioning was loaded with five other tactics (violence against rivals, intrasexual threats, emotional manipulation, commitment manipulation, and derogation of competitors) that were identified as cost inflicting tactics in the study of Miner et al. (2009).

The tactics of emotional and behavioral manipulation were interpreted as benefit provisioning by Turkish participants in the current research. This finding was consistent with the literature as previous research that examined the factor structure of Persian MRI-SF (Atari et al., 2017) and Brazilian MRI-SF (Lopes et al., 2016) suggested that the tactics of behavioral and emotional manipulation may be interpreted as benefit provisioning behaviors. The participants' interest in a committed relationship and their devotion to the relationship may be shown by emotional manipulation and commitment manipulation (Atari et al., 2017). Moreover, although the tactic of derogation of competitors was considered cost inflicting by Miner, et al. (2009), was interpreted as benefit provisioning by Turkish participants. The tactic of derogation of competitors neither obviously inflicts direct costs on the partner nor clearly imbues benefits on the partner (Lopes et al., 2016).

Lastly, contrary to the factor structure proposed by Miner, et al. (2009), violence against rivals and intrasexual threats were perceived as benefit provisioning by Turkish participants of the current study. These tactics may be interpreted as the outcome behavior of the intention of protecting the partner, therefore, they may be perceived as benefit provisioning rather than cost inflicting by Turkish participants.

Sex differences in the Mate Retention Tactics

Unsuccessful retention of the mate may result in failure to secure relationship resources against mate poachers, therefore ineffective mate retention may cause reduced reproductive ability (de Miguel & Buss, 2011). Retaining the mate is favorable for the sake of the reproductive success of both males and females, therefore, regardless of sex, human beings' devote efforts to retaining their mates. Tactics of mate retention are sex-differentiated (Buss & Shackelford, 1997), as the tactics that are used with the purpose of retaining the mate by females and males are shaped by the

qualities that the opposite sex seeks in the potential mate. During the phase of mate selection, women value the resources and the status of the potential mate, while men prioritize fertility and beauty as the sign of health for the potential mate (Buss & Shackelford, 1997). Previous research revealed that women more than men use appearance enhancement and men more than females use resource display as a mate retention tactic (e.g., Pham et al., 2015; Buss, 1988; Buss & Shackelford, 1997). Furthermore, previous cross-cultural studies replicated these findings in Iran (Atari et al., 2017), Croatia (Kardum et al., 2006), Spain (de Miguel & Buss, 2011), and Brazil (Lopes et al., 2016).

In the current research, evolutionarily based sex differences on performance frequencies of mate retention tactics were replicated. Turkish male participants reported a higher frequency than female participants regarding mate retention tactic of resource display. Moreover, female participants were using appearance-enhancement more frequently than males. These findings are valuable as they strengthen the generalizability of these evolutionarily based sex differences in mate retention tactics to other cultures.

Other tactics that were displayed more by one sex than another in the Turkish context were violence against rivals, intrasexual threats, physical possession signals, and, submission and debasement. Turkish men reported a higher frequency of performing violence against rivals and intrasexual threats. Archer (2009) reported that the great majority of incidents of same-sex violence, including killing, were committed by men. The higher frequency of males displaying acts related to aggression and threats of violence is consistent with both the gender stereotypes and the empirical data (de Miguel & Buss, 2011). Males from Iran (Atari et al., 2017), Croatia (Kardum et al., 2006), Spain (de Miguel & Buss, 2011), and Brazil (Lopes et al., 2016) reported a higher frequency of performing violence against rivals and intrasexual threats.

Moreover, the mate retention tactics of physical possession signals and submission and debasement were performed more by Turkish males than females. These findings did not deviate from the literature as results of previous cross-cultural studies revealed the sex differences in performance frequencies of these tactics (e.g. de Miguel & Buss, 2011). As the characteristic of being submissive is more associated with women, the finding of the current study that men use more submission and debasement was contrary to common gender roles stereotype. This sex differentiation in

displaying submission and debasement as the mate retention tactic was found in other cultures, as well; in Spain (de Miguel & Buss, 2011), America (Buss & Shackelford, 1997), and Croatia (Kardum et al., 2006). One explanation for this finding may be related to the women's higher likelihood than men to end the romantic relationship, so some men may use submission and debasement to avoid a potential breakup (de Miguel & Buss, 2011). However, Persian males were not found to be using submission and debasement more than Persian females (Atari et al., 2017).

Correlates of Mate Retention Tactics

With the purpose of evaluating the construct validity of the Turkish version of MRI-SF, the relationship of mate retention tactics with self-esteem and sexual jealousy was examined. Results of the current research suggested that participants who had higher self-esteem may use fewer mate retention tactics. This finding was in accordance with the previous research. In the research that was done by Zeigler-Hill, Fulton, & McLemore (2012) with 432 American undergraduate students, a negative correlation was found between these variables. Additionally, Holden et al. (2014) suggested that lower self-esteem may predict a higher frequency of displaying mate retention tactics.

Furthermore, the results of the multiple regression analysis revealed a significant and positive association between sexual jealousy and mate retention tactics, suggesting that those who experience higher levels of jealousy over their romantic partner may engage in mate retention tactics more frequently. These results were consistent with previous research. In the study of Davis et al. (2018), jealousy was found to predict mate retention behavior in a positive direction. Moreover, another study that studies the online mate retention acts in the Facebook environment reported a positive correlation between the experience of jealousy and online mate retention tactics (Brem, Spiller, & Vandehey, 2015). It was suggested by Buss & Shackelford (1997) that the primary emotion that promotes mate retention strategies is the emotion of jealousy. The experience of jealousy facilitates an individual to recognize the potential threats to their romantic relationships (Brewer & Riley, 2009). Consequently, once the specific threat is identified, the individual may be encouraged to eliminate the threat by performing mate retention tactics (Buunk, Massar, & Dijkstra, 2007).

Strength and Contributions of The Study

This study has significant contributions to the literature. To our knowledge, prior to the current research, there has been no research that studied the mate retention tactics in the Turkish sample. Most of the previous research that studied mate retention tactics used samples from Western cultures. Atari et al. (2017) were the first to examine the psychometric properties of the MRI-SF in a non-Western culture. This study is unique as it is the first study that translated the MRI-SF to the Turkish language and evaluated the new measurement in terms of its psychometric properties. This study introduces the MRI-SF for use in Turkish samples and provides the researchers with a new non-western sample to include in the cross-cultural research on mate retention behavior.

Current research replicates the previously documented sex differences in mate retention tactics in the Turkish context. Therefore, another contribution of this study is to strengthen the evolutionary hypotheses on sex differentiation in mate selection and mate retention tactics as the finding of this study did not deviate from the previous research. In other words, with this current research, the generality of findings on sex differentiation in mate selection and mate retention tactics that were found in Western cultures were assessed in the non-Western context, Turkey.

Limitations of the Study

The current study has limitations. Firstly, the study sample consisted of Istanbul Bilgi University Students, therefore the participants were either graduate or undergraduate students. Secondly, the majority of participants defined themselves as female, therefore homogeneity of the sample in terms of sex distribution was not established. Lastly, the age range of the participants was narrow as only university students participated in the current study. These aspects of the study sample affect the generalizability of the research findings.

Moreover, the participants of the study were a non-random sample as the current research recruited only the individuals that reside in the city of Istanbul. However, Turkey contains within itself many ethnic groups other than Turkish such as Arabic, Albanian, Bosnian, Armenian, Georgian, and Kurdish (Murat, 2012). The present sample may not be accurately representative of Turkey, therefore, future research is

necessary to investigate the replicability of the findings of this study in these minority groups within Turkey.

Suggestions for Future Research

Some recommendations for future research can be made based on the findings of this study. Firstly, participants that were recruited for this study only consisted of individuals that were university students in Istanbul. Future research should aim to replicate the current study's findings with a larger sample size that represents all components of the general population. Moreover, adapting the MRI-SF to study minority groups in Turkey, such as Arabic, Albanian and Kurdish, may yield valuable results. Furthermore, in the current research, the age of the participants did not correlate significantly with the performance frequency of the mate retention tactics. However, previous research revealed a significant and negative association between age and mate retention tactics (AtariB et al., 2017). Therefore, another suggestion for future research can be to examine the relationship between these variables using a Turkish sample with higher variance in terms of the age of the participants.

Lastly, previously documented sex difference in mate retention tactics of submission and debasement was replicated in the current research. The results of the current study suggested that Turkish men engage in submission and debasement as a mate retention tactic more frequently than Turkish women do. Although this sex difference was revealed by the previous cross-cultural research, it was not predicted by any extant theories (de Miguel & Buss, 2011). Therefore, future research should examine the cross-culturally replicable sex differences in the tactic of submission and debasement.

CONCLUSION

The current study evaluated the psychometric properties of the Turkish translation of the MRI-SF. According to the results, Turkish MRI-SF was found to be psychometrically valid and reliable. Previously reported cross-cultural sex differences in mate retention tactics were replicated in the current research. Furthermore consistent with the previous research, results revealed the predictor role of sexual jealousy and self-esteem for mate retention tactics.

To our knowledge, there has been no research that attempted to translate MRI-SF into the Turkish language and test its psychometric properties. Therefore, this research provides the growing literature on mate retention with a new tool and enables the researchers to extend the evolutionary psychological research in Turkish samples.

Appendix

Mate Retention Inventory Short Form (MRI-SF) – Turkish Version

A number of actions or behaviors are listed on the pages that follow. In this study, we're interested in the behaviors people engage in when they're in a romantic relationship. Use the scale below for each act to indicate how frequently you performed it during the course of the previous year.

	Never (Hic)	Rarely (Nadiren)	Sometimes (Bazen)	Often (Sik sik)
1. Called to make sure my partner was where she/he said she/he would be. (Bana soyledigi yerde olup olmadigini kontrol etmek icin partnerimi aradim.)	**0**	**1**	**2**	**3**
2. Did not take my partner to a party where other men/women would be present. (Başka erkeklerin/kadinlarin olabileceği bir partiye partnerimi götürmedim.)	**0**	**1**	**2**	**3**
3. Insisted that my partner spend all her/his free time with me. (Butun bos zamanini benimle gecirmesi icin partnerime israr ettim.)	**0**	**1**	**2**	**3**
4. Talked to another woman/man at a party to make my partner jealous. (Partnerimi kiskandirmak icin partideki baska bir kadinla/erkekle konustum.)	**0**	**1**	**2**	**3**
5. Became angry when my partner flirted too much.	**0**	**1**	**2**	**3**

(Partnerim çok fazla flörtöz davrandığında sinirlendim.)				
6. Pleaded that I could not live without my partner. (Partnerime onsuz yasayamayacagimi soyledim.)	**0**	**1**	**2**	**3**
7. Told my partner that we needed a total commitment to each other. (Partnerime, birbirimize tamamıyla bağlı olmamız gerektiğini söyledim.)	**0**	**1**	**2**	**3**
8. Pointed out to my partner the flaws of another man/woman. (Partnerime baska erkeklerin/kadinlarin kusurlarini gosterdim.)	**0**	**1**	**2**	**3**
9. Bought my partner an expensive gift. (Partnerime pahali bir hediye aldim.)	**0**	**1**	**2**	**3**
10. Performed sexual favors to keep my partner around. (Partnerimi etrafımda tutabilmek için cinsel cazibemi kullandım.)	**0**	**1**	**2**	**3**
11. Made myself ‘‘extra attractive’’ for my partner. (Kendimi partnerim için “ekstra çekici” hale getirdim.)	**0**	**1**	**2**	**3**
12. Complimented my partner on her appearance. (Partnerime dis gorunusu ile ilgili iltifat ettim.)	**0**	**1**	**2**	**3**
13. Gave in to my partner’s every wish. (Partnerimin her dilegini gerceklestirdim.)	**0**	**1**	**2**	**3**
14. Told my same-sex friends how much my partner and I were in love. (Erkek/kadin arkadaslarima, partnerimle birbirimize ne kadar asik oldugumuzu anlattim.)	**0**	**1**	**2**	**3**

15. Put my arm around my partner in front of others. (Baskalarinin onunde kolumu partnerimin omzuna attim.)	**0**	**1**	**2**	**3**
16. Asked my partner to wear my ring. (Partnerimden yuzugumuzu takmasini istedim.)	**0**	**1**	**2**	**3**
17. Told other men/women that my partner was a pain. (Başka erkeklere/kadinlara partnerimin bir baş belası olduğunu soyledim.)	**0**	**1**	**2**	**3**
18. Stared coldly at a man/woman who was looking at my partner. (Partnerime bakan baska bir adama/kadina dik dik baktim.)	**0**	**1**	**2**	**3**
19. Got my friends to beat up someone who was interested in my partner. (Partnerimle ilgilenen bir baska adamı dövmek için arkadaşlarımı topladım.)	**0**	**1**	**2**	**3**
20. Snooped through my partner's personal belongings. (Partnerimin kisisel esyalarini gizlice karistirdim.)	**0**	**1**	**2**	**3**
21. Took my partner away from a gathering where other men/women were around. (Başka erkeklerin/kadinlarin olduğu bir ortamdan partnerimi uzaklaştırdım.)	**0**	**1**	**2**	**3**
22. Spent all my free time with my partner so that she could not meet anyone else. (Partnerim baskalariyla bulusamasin diye butun bos zamanimi onunla gecirdim.)	**0**	**1**	**2**	**3**
23. Showed interest in another woman/man to make my partner angry.	**0**	**1**	**2**	**3**

(Partnerimi kizdirmak icin baska bir kadina/erkege ilgi gosterdim.)				
24. Threatened to break-up if my partner ever cheated on me. (Eğer partnerim beni aldatacak olursa diye onu ayrılmak ile tehdit ettim.)	**0**	**1**	**2**	**3**
25. Told my partner that I was dependent on my partner. (Partnerime ona ait olduğumu söyledim.)	**0**	**1**	**2**	**3**
26. Asked my partner to marry me. (Partnerime evlilik teklifi ettim.)	**0**	**1**	**2**	**3**
27. Told my partner that another man/woman was stupid. (Partnerime baska bir erkegin/kadinin aptal ol-dugunu soyledim.)	**0**	**1**	**2**	**3**
28. Took my partner out to a nice restaurant. (Partnerimi sik bir restoranda yemege cikardim.)	**0**	**1**	**2**	**3**
29. Had a physical relationship with my partner to deepen our bond. (Partnerimle aramızdaki bağı derinleştirmek için tensel bir ilişki kurdum.)	**0**	**1**	**2**	**3**
30. Made sure that I looked nice for my partner. (Partnerime güzel görünmeye calistim.)	**0**	**1**	**2**	**3**
31. Displayed greater affection for my partner. (Partnerime fazla sevgi gösterdim.)	**0**	**1**	**2**	**3**
32. Went along with everything my partner said. (Partnerimin söylediği her şeye katıldım.)	**0**	**1**	**2**	**3**
33. Bragged about my partner to other men/women. (Diğer erkeklere/kadinlara partnerimi övdüm.)	**0**	**1**	**2**	**3**
34. Held my partner's hand while other men/women were around.	**0**	**1**	**2**	**3**

(Etrafta baska erkekler/kadinlar varken partnerimin elini tuttum.)				
35. Gave my partner jewelry to signify that she was taken. (Partnerime onun biriyle birlikte olduğu anlaşılsın diye mücevher vardim.)	**0**	**1**	**2**	**3**
36. Told other men/women that my partner was not a nice person. (Başka erkeklere/kadinlara partnerimin hoş bir insan olmadığını söyledim.)	**0**	**1**	**2**	**3**
37. Gave a man/woman a dirty look when he/she looked at my partner. (Baska bir adam/kadin partnerime baktiginda, partnerime bakan adama/kadina pis bir bakis attim.)	**0**	**1**	**2**	**3**
38. Slapped a man/woman who made a pass at my partner. (Partnerime asılan bir adama/kadina tokat attım.)	**0**	**1**	**2**	**3**

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