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# Psychometric Evaluation and Cultural Correlates of the Mate Retention Inventory–Short Form (MRI-SF) in Iran

**Mohammad Atari[1], Nicole Barbaro[2], Todd K. Shackelford[2], and Razieh Chegeni[3]**

**Abstract**

The current study investigated the psychometric properties of the Persian translation of the Mate Retention Inventory–Short Form (MRI-SF) in Iran. We also investigated sex differences in the use of mate retention tactics and investigated the relationships between mate retention behaviors and a number of related cultural constructs. Participants ($N = 308$) ranged in age from 18 to 57 years. All participants were in a committed romantic relationship, with mean relationship length of 63.5 months ($SD = 73.8$). Participants completed the Persian translation of the MRI-SF and measures of religiosity, relationship satisfaction, self-esteem, and socioeconomic status. Cultural measures specific to Iran were also included, such as Mahr (for married individuals), self-perceived Qeiratiness (for men), and self-perceived jealousy (for women). Mahr is a mandatory amount of money or possessions paid or promised to be paid by the groom to the bride at the time of the marriage contract. Qeirati is a male-specific adjective in Persian meaning protective against unwanted attention toward a man's romantic partner. Female jealousy is usually regarded the counterpart of male Qeiratiness in Iranian culture. The 19 mate retention tactics formed a two-component structure, consistent with previous research. Results demonstrate adequate internal consistency of 2-item assessments of mate retention tactics. Observed sex differences accorded with previous mate retention research and are discussed in reference to evolutionary perspectives on human mating. Several significant associations emerged between mate retention tactics and Iranian culture-specific variables and are discussed from a cross-cultural perspective.

**Keywords**

mate retention, evolutionary psychology, psychometrics, sex differences, Iran

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Humans are among the 3% of mammals that form long-term pair bonds that can last years or decades (Buss & Schmitt, 1993; Reichard, 2002; Symons, 1979). Given that long-term, committed romantic relationships are a common mating arrangement in humans (Buss, 2003), men and women allocate significant time, energy, and resources to attract and retain a long-term mate. Retaining a long-term romantic partner and preventing a romantic partner's defection from the relationship are evolutionarily recurrent, adaptive problems for humans.

Men and women incur sex-specific costs resulting from a romantic partner's infidelity. A man whose partner is sexually unfaithful risks cuckoldry—unwitting investment in another man's offspring (Symons, 1979). A woman whose partner is emotionally unfaithful risks losing partner-provisioned resources should these be diverted to another woman (Buss, Larsen, Westen, & Semmelroth, 1992). Long-term pair-bonding bestows reproductive benefits on men and women (Gallup & Frederick, 2010), including facilitation of offspring survival via biparental care (Sear & Mace, 2008; Winkling, Gurven, & Kaplan, 2011). Replicative benefits of mate retention over deep evolutionary time motivated men and women to retain a long-term mate (Buss, Shackelford, & McKibbin, 2008).

[1] Department of Psychology, University of Tehran, Tehran, Iran
[2] Department of Psychology, Oakland University, Rochester, MI, USA
[3] Department of Psychology, Alzahra University, Tehran, Iran

**Corresponding Author:**
Mohammad Atari, Department of Psychology, University of Tehran, Tehran, Iran.
Emails: mohammad.attari@yahoo.com; atari@ut.ac.ir

Buss (1988) developed the Mate Retention Inventory (MRI) to assess mate retention behaviors that men and women use to thwart a romantic partner's infidelity. The MRI is a taxonomy of 104 behaviors clustered into 19 mate retention tactics. The tactics are organized into five components: (1) direct guarding, (2) intersexual negative inducements, (3) intrasexual negative inducements, (4) positive inducements, and (5) public signals of possession. Mate retention categories can be further grouped into broad, higher order domains. One common way to organize mate retention categories is into the domains of intrasexual manipulations (i.e., behaviors directed at same-sex rivals; Categories 3 and 5, above) and intersexual manipulations (i.e., behaviors directed at one's romantic partner; Categories 1, 2, and 4, above). Miner, Starratt, and Shackelford (2009) suggested an alternative higher order domain structure of mate retention behaviors by organizing the mate retention categories into the domains of cost-inflicting behaviors (i.e., behaviors that reduce the likelihood of infidelity by inflicting or threatening to inflict costs on the romantic partner; Categories 1, 2, and 3, above) and benefit-provisioning behaviors (i.e., behaviors that reduce the likelihood of partner infidelity by giving benefits to the partner and increasing relationship satisfaction; Categories 4 and 5, above).

The MRI has been shown to have adequate psychometric properties (Shackelford, Goetz, & Buss, 2005). Considering that brevity of psychometric measures is important in psychological research, Buss et al. (2008) developed a 38-item Mate Retention Inventory–Short Form (MRI-SF), which demonstrated adequate reliability and validity in accordance with the long-form MRI. The MRI-SF is organized into tactics, categories, and domains, reflecting the structure of the original MRI (Buss, 1988). Each of the 19 mate retention tactics is measured by 2 items on the MRI-SF. Each 2-item tactic has demonstrated adequate internal consistency and convergent validity, indicating the psychometric robustness of the 2-item scales for the assessment of these mate retention tactics (Buss et al., 2008).

Research utilizing the MRI and MRI-SF has elucidated important findings in regard to evolutionarily predicted sex differences in use of mate retention tactics in nonmarried couples (Buss, 1988) and newlywed couples (Buss & Shackelford, 1997; Kaighobadi, Shackelford, & Buss, 2010). For example, men, more than women, display their status and resources because women prioritize these traits in their long-term mates (e.g., Fales et al., 2016). In contrast, women, more than men, highlight their reproductive value by enhancing their appearance because men value youth and fertility in their mates (Buss & Shackelford, 1997). Men are more likely to use mate retention tactics when they perceive that the risk of partner sexual infidelity is greater (Goetz et al., 2005; Starratt, Shackelford, Goetz, & McKibbin, 2007) and when their partner displays cues to high mate value, such as physical attractiveness and youthfulness (Buss & Shackelford, 1997).

An evolutionary psychological perspective has successfully predicted sex differences in the use of mate retention tactics (Buss, 1988; Buss & Shackelford, 1997; Pham, Barbaro, Mogilski, & Shackelford, 2015). Mate retention research in cultures, such as Croatia (Kardum, Hudek-Knezevic, & Gracanin, 2006), Spain (de Miguel & Buss, 2011), and Brazil (Lopes, Shackelford, Santos, Farias, & Segundo, 2016), has replicated evolutionarily predicted sex differences in mate retention tactics, including the finding that men more than women performed resource display and women more than men performed appearance enhancement. Although the MRI has been utilized in Croatia (Kardum et al., 2006) and Spain (de Miguel & Buss, 2011), the factor structure was not examined. Lopes, Shackelford, Santos, Farias, and Segundo (2016), however, did examine the factor structure of the MRI-SF in Brazil and replicated the two-domain structure suggested by Miner et al. (2009) of benefit-provisioning mate retention behaviors and cost-inflicting mate retention behaviors.

The current research seeks to extend cross-cultural research on mate retention behavior and examines the psychometric properties of the MRI-SF (Buss et al., 2008) in Iran. We evaluate the Persian MRI-SF factor structure, expecting to replicate the factor structure identified by Lopes et al. (2016) and suggested by Miner et al. (2009). Internal consistency of the 2-item mate retention tactics is evaluated. We also aim to replicate previously documented correlates of mate retention behavior (e.g., age, relationship length, relationship satisfaction, and self-esteem) to establish its construct validity and replicate previously documented cross-cultural sex differences in mate retention performance frequencies in Iranian romantic couples.

Previous cross-cultural research on mate retention behavior has not investigated how specific aspects of a culture may be related to mate retention behaviors. The current research, therefore, investigated the relationships between mate retention behavior and several culture-specific variables. Specifically, we included the variables (1) "Mahr," which is a mandatory amount of money or possessions paid or promised to be paid by the groom to the bride at the time of the marriage contract (see Mir-Hosseini, 1993), (2) "Qeirati," which is a male-specific adjective in Persian meaning protective against unwanted attention toward a man's romantic partner (Atari & Jamali, 2016a), and (3) female jealousy, which is regarded the counterpart of male Qeiratiness in Iranian culture.

Mahr, Qeiratiness, and female jealousy variables are unique to Iranian culture. Mahr is originally an Islamic concept that protects the wives against unilateral divorce. In contemporary Iran, Mahr differs from that in Arabic countries—although research shows that many Iranian women consider Mahr to be an unnecessary tradition (Atari & Jamali, 2016b). Iranian culture affords men and women with socially acceptable behaviors to protect their partner as well as their family members. Qeirati deems behaviors as extreme as physically beating someone who stares at one's wife as socially acceptable. Qeiratiness is conceptually similar to "culture of honor" in the United States (Atari & Jamali, 2016a; also see Uskul, Cross, Sunbay, Gercek-Swing, & Ataca, 2012). Shackelford (2005) suggests that the manifest behaviors defined as the indicators of a culture of honor might be the output of psychological mechanisms that evolved in response to the evolutionarily

recurrent problem of mate retention. Thus, it is expected that Qeirati individuals perform mate retention behaviors more frequently. The female equivalent of "Qeiratiness" is female jealousy, or "Hesadat-e Zananeh," in Persian. Jealousy in Iran, however, seems to differ slightly from that of women in some individualistic cultures. The collective nature of Iranian culture permits Iranian women to engage their family members when they perceive that their partner may commit infidelity. For example, it is traditionally acceptable for a wife to ask for help from her husband's family members if she feels that the relationship is in danger. The adaptive features of jealousy are evident through an evolutionary perspective that accentuates the need to guard mates from potential mate poachers (Schmitt & Buss, 2001). It is also expected that jealous women report more frequent performance of mate retention behaviors.

To our knowledge, no previous research has examined the relationships between these cultural variables and mate retention in Iran. Although cross-cultural adaptation of self-report measures would generally add to the literature (Hambleton, Merenda, & Spielberger, 2004), Iran provides a particularly interesting cultural setting for testing evolutionary psychological hypotheses because of recent historical and cultural changes. Iran (previously known as Persia) may be considered heir to one of the oldest civilizations (Yarshater, 2013). After Achaemenid Empire (550 BC), different kingdoms have ruled in Iran. The religion of Iranians was Zoroastrianism until the Arab Conquest of Iran in 651 which put an end to Zoroastrianism and turned the official religion to Islam. In 1979, an Islamic Revolution took place and Iran was officially renamed to Islamic Republic of Iran. Following the revolution, Islamic rules were strengthened in the constitution. With regard to romantic relationships, premarital relationships became limited, and divorce was strongly discouraged and stigmatized in the 1980s and 1990s. Social and political figures encouraged couples to produce a large number of offspring, which lead to a doubling of the Iranian population in less than 25 years. Recent reports (e.g., Atari & Jamali, 2016b; Honarvar et al., 2016), however, suggest that contemporary Iran may be quite similar to Western societies with regard to premarital relationships and mate preferences. Iran has great diversity in subcultures and different ethnicities (e.g., Kurd, Turk, Turkmen, Balooch, Arab, Guilaki, Lor, etc.), rendering Iran an interesting country of investigation.

The current study is the first to examine the psychometric properties and cultural correlates of the MRI-SF in a non-Western culture. In addition to the validation of the MRI-SF in Iran, the current study seeks to explore the relationships between performance frequencies of mate retention behavior and these three Iranian cultural variables (i.e., Mahr, male Qeiratiness, and female jealousy). We selected these three cultural variables, as they were similar to the conceptualization of mate retention (Buss, 1988). For example, in Moeen Encyclopedic Dictionary, Qeirati is defined as "one who tends to retain and defend the female members of his family and his honor" (Moin, 1985). Exploratory analyses between religiosity and mate retention behaviors will be conducted in the current study. Religiosity plays a crucial role in contemporary Iran (Khosrokhavar, 2007), and it is important to examine evolutionary psychological correlates of religiosity in this country (e.g., Atari & Jamali, 2016b). The current study is the first to examine the relationship between religiosity and mate retention behavior and adds to the existing literature on mate retention.

## Method

### Participants

A total of 308 heterosexual participants (53.6% female) were recruited from Tehran, Iran—considered the political, economic, and cultural center of Iran. All participants were in a long-term romantic relationship, 73.4% of which were marital relationships. The mean romantic relationship length of the participants was 63.5 months ($SD = 73.8$). Participants ages ranged from 18 to 57 years ($M = 29.5$, $SD = 6.8$). Women's mean age was 28.8 ($SD = 6.4$) and men's mean age was 30.3 ($SD = 7.1$). Regarding educational background, 5 participants had some school education, 27 participants had a high school diploma, 22 participants had an associate's degree, 84 participants had a bachelor's degree, 123 participants had a master's degree, and 43 participants had a doctorate degree (4 participants did not provide information regarding their educational background).

### Procedure

Participants were recruited from university settings and public places in Tehran, Iran. Potential participants were approached and asked to participate in a study about romantic relationships as long as they were (1) married or in a long-term romantic relationship and (2) at least 18 years of age. Participants completed a survey and reported basic demographic information (age, partner's age, relationship length, subjective socioeconomic status, and educational background) and completed the Persian version of the MRI-SF and several other self-report measures (see, Measures, below). Participation was voluntary, and participants were not compensated.

### Measures

*MRI-SF.* The MRI-SF (Buss et al., 2008) consists of 38 items measuring 19 mate retention tactics. Participants indicate the frequency with which they performed each behavior within the past year on a 4-point Likert-type scale ranging from 0 (*never*) to 3 (*often*). Following a back-translation procedure, all items were translated into Persian by two bilingual translators. Two independent translators then translated all items back into English, resulting in two Persian versions and two back-translated versions. The authors agreed upon a single final version after considering idiomatic and semantic differences. The preliminary Persian version of the scale was then administered to a sample of 10 dating or married university students in a discussion group, who confirmed that the translated Persian MRI-SF items were clear and easy to understand.

*Self-rating of religiosity (SRR).* The SRR is a single-item measure of intrinsic religiosity (Abdel-Khalek, 2007). Participants responded to the question, "What is your level of religiosity in general?" on an 11-point scale ranging from 0 (*indicating no religiosity*) to 10 (*indicating high level of religiosity*). Although single-item measures are limiting in terms of breadth, single-item measures of religiosity have demonstrated good validity in various samples (e.g., Swami et al., 2013) and cross-cultural studies (Abdel-Khalek & Lester, 2015).

*Kansas Marital Satisfaction Scale (KMSS).* The KMSS is a 3-item measure of marital satisfaction (Schumm et al., 1986). The Persian translation of the KMSS was obtained from Arab, Nakhaee, and Khanjani (2015). Participants responded to each item on a 7-point Likert-type scale ranging from 1 (*very unsatisfied*) to 7 (*very satisfied*). For unmarried couples, the items were modified to refer to relationship satisfaction rather than marital satisfaction. Psychometric characteristics of the KMSS are well-documented (Burnett, 1987), and the KMSS demonstrated good reliability in this sample ($\alpha = .92$ for nonmarried participants and $\alpha =$. 94 for married participants).

*Single-Item Self-Esteem (SISE) Scale.* The SISE is a single-item measure of self-esteem and has been used in various samples (e.g., Robins, Hendin, & Trzesniewski, 2001). Participants responded to the question, "I have high self-esteem," on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Although a single-item measure is psychometrically limiting, single-item measures do have certain advantages such as parsimony and ease of administration, and the psychometric adequacy of single-item measures has been confirmed in the assessment of personality and individual difference constructs (e.g., Gosling, Rentfrow, & Swann, 2003).

*Iranian culture variables.* Participants responded to several culture-specific items. Married individuals reported on Mahr ("How many gold coins are determined as Mahr in your marriage contract?"). Mahr was asked in gold coin, which is the common unit of Mahr in Iran (see Aghajanian & Thompson, 2013). Every full gold coin (i.e., Bahar Azadi Coin) contains approximately 8 g of pure gold (estimated market value of US$300). The minimum of Mahr was zero coins and the maximum was 2,855 coins ($Mdn = 124$). Men reported self-perceived Qeiratiness ("How Qeirati do you think you are?" and "How jealous do you think your partner is?"). Women reported self-perceived jealousy ("How Qeirati do you think your partner is?" and "How jealous do you think you are?"). Men and women responded to Qeiratiness items on an 11-point Likert-type scale ranging from 0 (*not at all*) to 10 (*very much*).

## Results

### Analysis Plan

Following Buss (1988) and previous mate retention research (Barbaro, Pham, Shackelford, & Zeigler-Hill, 2016; Pham & Shackelford, 2013), we calculated average mean scores for each mate retention tactic. We then subjected the 19 tactics to a principal components analysis (PCA). We determined the number of components to be extracted according to the inspection of the scree plot and parallel analysis (Patil, McPherson, & Friesner, 2010). The parallel analysis suggests the retention of components for which the eigenvalues in the real data are larger than the associated eigenvalues in the parallel data (Horn, 1965). We examined sex differences in all 19 tactics using independent-means $t$ tests with Bonferroni correction (at a $p$ value of $.05/19 = .003$). The relationships between mate retention and other study variables were evaluated using Pearson's correlation coefficients and one-way analysis of variance (ANOVA). The internal consistency of the 2-item scales, domains, and the full scale was evaluated by Cronbach's $\alpha$ (Eisinga, TeGrotenhuis, & Pelzer, 2013). All analyses were conducted using SPSS 22.

### Descriptive Statistics

The 2-item tactics showed acceptable internal consistency, considering that each tactic was comprised of only 2 items ($.29 < \alpha s < .82$). Tactic-level $\alpha$ coefficients are presented in Table 1. Descriptive statistics ($M$ and $SD$) for men and women are also presented in Table 1.

### Sex Differences

We conducted a set of 19 independent-samples $t$ tests to examine sex differences in performance frequencies for mate retention tactics. All comparisons were Bonferroni corrected and considered statistically significant at a $p$ value of .003. Cohen's $d$ was also calculated as a measure of effect size. All sex differences comparisons are presented in Table 1. Results indicate that men more frequently used the tactics of concealment of mate, commitment manipulation, resource display, intrasexual threats, and violence against rivals than women ($ps < .003$). The effect sizes were moderate to large (i.e., $d > .50$) for commitment manipulation ($d = .90$), intrasexual threats ($d = .71$), resource display ($d = .57$), and violence against rivals ($d = .50$).

### PCAs

We evaluated the structure of the 19 tactics using a PCA with varimax rotation. Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was .84 and Bartlett's sphericity test was significant, $\chi^2(171) = 1{,}743.80$, $p < .001$. KMO suggested that the Persian MRI-SF tactics had adequate common variance for PCA. The results of Bartlett's test indicated that the correlation matrix of tactics was factorable. The results of an initial PCA revealed five factors with $\lambda > 1$, which accounted for 58.95% of the total variance. However, the inspection of the scree plot indicated two underlying components and a steep cutoff to the third component. The results of the parallel analysis on 1,000 parallel data sets with confidence interval of 95% suggested the extraction of two components. That is, the first two eigenvalues

**Table 1.** Internal Consistency and Sex Differences in Mate Retention Tactics.

| Mate Retention Tactics | Item Number | α | Men | | Women | | Sex Effect (*t*) | Sex Effect (*d*) |
|---|---|---|---|---|---|---|---|---|
| | | | *M* | *SD* | *M* | *SD* | | |
| Vigilance | 01 and 20 | .62 | 0.46 | 0.60 | 0.66 | 0.75 | 2.50 | .29 |
| Concealment of mate | 02 and 21 | .48 | 0.84 | 0.86 | 0.45 | 0.68 | 4.42* | .49 |
| Monopolization of time | 03 and 22 | .58 | 0.82 | 0.83 | 0.85 | 0.83 | 0.37 | .04 |
| Jealousy induction | 04 and 23 | .62 | 0.14 | 0.43 | 0.18 | 0.47 | 0.80 | .09 |
| Punish mate's infidelity threat | 05 and 24 | .58 | 0.87 | 0.92 | 0.82 | 0.86 | 0.47 | .06 |
| Emotional manipulation | 06 and 25 | .74 | 1.58 | 0.98 | 1.32 | 0.93 | 2.42 | .27 |
| Commitment manipulation | 07 and 26 | .29 | 2.00 | 0.97 | 1.16 | 0.70 | 8.67* | .90 |
| Derogation of competitors | 08 and 27 | .58 | 1.00 | 0.80 | 0.78 | 0.69 | 2.68 | .29 |
| Resource display | 09 and 28 | .61 | 1.97 | 0.83 | 1.47 | 0.86 | 5.18* | .57 |
| Sexual inducements | 10 and 29 | .53 | 2.15 | 0.82 | 1.91 | 0.86 | 2.42 | .28 |
| Appearance enhancement | 11 and 30 | .70 | 2.03 | 0.72 | 2.18 | 0.76 | 1.74 | .20 |
| Love and care | 12 and 31 | .59 | 2.39 | 0.70 | 2.37 | 0.68 | 0.25 | .03 |
| Submission and debasement | 13 and 32 | .74 | 1.77 | 0.72 | 1.71 | 0.77 | 0.74 | .08 |
| Verbal possession signals | 14 and 33 | .69 | 1.45 | 0.93 | 1.58 | 0.88 | 1.24 | .14 |
| Physical possession signals | 15 and 34 | .73 | 1.74 | 0.88 | 1.47 | 1.01 | 2.48 | .28 |
| Possessive ornamentation | 16 and 35 | .36 | 1.34 | 0.91 | 1.06 | 0.89 | 2.73 | .31 |
| Derogation of mate | 17 and 36 | .67 | 0.21 | 0.53 | 0.30 | 0.56 | 1.45 | .16 |
| Intrasexual threats | 18 and 37 | .82 | 1.31 | 1.00 | 0.61 | 0.86 | 6.47* | .71 |
| Violence against rivals | 19 and 38 | .59 | 0.35 | 0.72 | 0.07 | 0.30 | 4.55* | .50 |

*Note.* $N = 308$.
*$p < .003$

from the parallel analysis ($\lambda = 1.56$, $\lambda = 1.44$) were smaller than our data ($\lambda = 5.03$, $\lambda = 2.77$), while the third eigenvalue from the parallel data ($\lambda = 1.37$) was larger than the third eigenvalue from our data ($\lambda = 1.31$).

Based on the evaluation of the scree plot and the parallel analysis, we conducted a second PCA with varimax rotation, fixing the number of components to two. The two components cumulatively accounted for 41.05% of the total variance. For Component 1, the tactics had item-component loadings between .53 and .77. The item-component loadings for Component 2 ranged between .46 and .73. Communalities and loadings are displayed in Table 2. The bivariate correlation coefficient between the first and second components was $r = .32$ ($p < .001$), indicating a moderate positive relationship between the two underlying components of the Persian MRI-SF in the present sample.

**Table 2.** Component Structure of the Persian MRI-SF.

| Mate Retention Tactics | Factor Loadings | | $h^2$ |
|---|---|---|---|
| | Component 1 | Component 2 | |
| Love and care | **0.77** | −0.17 | .63 |
| Submission and debasement | **0.71** | 0.02 | .51 |
| Emotional manipulation | **0.70** | 0.12 | .50 |
| Appearance enhancement | **0.66** | 0.07 | .43 |
| Possessive ornamentation | **0.63** | 0.20 | .44 |
| Sexual inducements | **0.62** | 0.11 | .40 |
| Physical possession signals | **0.59** | 0.03 | .35 |
| Verbal possession signals | **0.57** | 0.04 | .33 |
| Resource display | **0.57** | 0.15 | .34 |
| Commitment manipulations | **0.53** | 0.29 | .36 |
| Punish mate's infidelity threat | 0.13 | **0.73** | .55 |
| Concealment of mate | 0.18 | **0.66** | .46 |
| Vigilance | −0.02 | **0.64** | .40 |
| Intrasexual threats | 0.33 | **0.63** | .50 |
| Monopolization of time | 0.19 | **0.62** | .42 |
| Jealousy induction | −0.09 | **0.60** | .37 |
| Derogation of competitors | 0.24 | **0.50** | .30 |
| Violence against rivals | 0.09 | **0.47** | .23 |
| Derogation of mate | −0.23 | **0.46** | .27 |
| Eigenvalue | 5.03 | 2.77 | |
| Explained variance | 26.45 | 14.60 | |
| Internal consistency (α) | .84 | .78 | |

*Note.* $N = 308$. Loadings greater than .33 have been bolded. Component 1 = benefit-provisioning mate retention; Component 2 = cost-inflicting mate retention; MRI-SF = Mate Retention Inventory–Short Form.

## *MRI-SF Correlates*

We examined the relationships between the 19 mate retention tactics and other study variables for men and women, separately following previous research (Barbaro, Pham, & Shackelford, 2015). Bivariate correlations between mate retention tactics and other study variables (i.e., age, partner's age, relationship length, self-esteem, religiosity, Qeiratiness, jealousy, and relationship satisfaction) are displayed in Table 3 (women) and Table 4 (men).

Mate retention tactics and the higher order domains—the components extracted in the PCA—are negatively correlated with age, partner's age, and relationship length. Self-esteem is related to benefit-provisioning mate retention (Component 1) for men and women. Religiosity was related to the benefit-provisioning mate retention in women but not men. For women, socioeconomic status was positively correlated with

**Table 3.** Zero-Order Correlations Between Mate Retention Tactics and Other Study Variables Among Women.

| Mate Retention | Age | Partner's Age | Relationship Length | Self-Esteem | Religiosity | SSES | Partner's Qeiratiness | Self-Rated Jealousy | Mahr | Relationship Satisfaction |
|---|---|---|---|---|---|---|---|---|---|---|
| Vigilance | −.12 | −.11 | .04 | −.00 | −.07 | −.04 | .14 | .00 | .13 | −.25** |
| Concealment of mate | −.25** | −.24** | −.25** | −.13 | −.03 | −.05 | .08 | .10 | .09 | −.15 |
| Monopolization of time | −.15 | −.12 | −.12 | .00 | .20* | .05 | .19* | .04 | .05 | −.07 |
| Jealousy induction | −.09 | −.14 | −.06 | −.03 | .00 | −.07 | .20** | −.08 | .06 | −.19* |
| Punish mate's infidelity threat | −.16* | −.15 | −.18* | .11 | −.03 | −.02 | .21** | .12 | −.02 | −.19* |
| Emotional manipulation | −.25** | −.30** | −.19* | .07 | .23** | .01 | .14 | .23** | .14 | .27** |
| Commitment manipulation | −.23** | −.28** | −.20* | .07 | .13 | −.04 | .20** | .14 | .10 | −.13 |
| Derogation of competitors | −.17* | −.18* | −.07 | −.09 | .08 | .07 | .08 | .13 | .03 | .01 |
| Resource display | −.10 | −.15 | −.09 | .07 | −.10 | .18* | .12 | .10 | .10 | .02 |
| Sexual inducements | −.18* | −.17* | −.22** | .09 | .26** | .18* | .11 | .24** | −.07 | .06 |
| Appearance enhancement | −.25** | −.22** | −.22** | .10 | .23** | .00 | .02 | .40** | −.04 | .08 |
| Love and Care | −.28** | −.28** | −.26** | .15 | .19* | .06 | .01 | .36** | .11 | .31** |
| Submission and debasement | −.12 | −.11 | −.22** | .07 | .29** | .07 | .01 | .36** | −.02 | .24** |
| Verbal possession signals | −.20* | −.23** | −.14 | .11 | .03 | .06 | .04 | .23** | .23* | .17* |
| Physical possession signals | −.30** | −.34** | −.30** | .16* | −.15 | .12 | .16* | .18* | .22* | .15 |
| Possessive ornamentation | −.22** | −.23** | −.30** | .14 | .18* | −.06 | .22** | .13 | .18 | .07 |
| Derogation of mate | .16* | .14 | .12 | −.05 | .03 | −.12 | .04 | .04 | −.05 | −.43** |
| Intrasexual threats | −.17* | −.19* | −.14 | −.03 | −.09 | .09 | .12 | .10 | −.01 | −.13 |
| Violence against rivals | −.12 | −.10 | −.14 | −.12 | .00 | −.05 | .29** | .03 | −.03 | .02 |
| Benefit provisioning | −.34** | −.37** | −.33** | .16* | .18* | .10 | .18* | .36** | .16 | .19* |
| Cost inflicting | −.20* | −.21* | −.15 | −.05 | .02 | −.00 | .23** | .10 | .06 | −25** |

*Note.* Mahr was measured in married women. SSES = subjective socioeconomic status.
*$p < .05$. **$p < .01$

the mate retention tactics of resource display and sexual inducements. For men, socioeconomic status was positively correlated with the mate retention tactics of resource display and physical possession signals.

We also examined the association between performance frequency of mate retention behaviors and educational background. Two components (i.e., benefit provisioning and cost inflicting) were compared across six groups (levels) of educational background. Results of a one-way ANOVA indicate that benefit-provisioning mate retention did not differ across educational levels, $F(5, 292) = 1.24$, $p > .05$. Moreover, cost-inflicting mate retention, $F(5, 293) = 5.69$, $p < .01$, did differ across educational levels. Tukey post hoc tests revealed that individuals holding bachelor's, master's, and doctorate degrees performed cost-inflicting mate retention less frequently than individuals having an associate's degree ($ps < .05$). Descriptive statistics indicate that those having the highest educational degree had the lowest mean of cost-inflicting mate retention.

Men's self-report of being Qeirati was positively correlated with several mate retention tactics, benefit-provisioning mate retention, and cost-inflicting mate retention (see Table 4). Women's report of their partners' Qeiratiness was positively correlated with their own performance of several mate retention tactics, benefit-provisioning mate retention, and cost-inflicting mate retention (see Table 3). Women's self-reported jealousy was positively correlated with benefit-provisioning mate retention but not cost-inflicting mate retention (see Table 3). Men's perception of their partners' jealousy was positively correlated with cost-inflicting mate retention but not benefit-provisioning mate retention (see Table 4). For men and women, benefit-provisioning mate retention was positively associated with relationship satisfaction, and cost-inflicting mate retention was negatively associated with relationship satisfaction.

We investigated the relationship between Mahr and mate retention performance frequencies (see Table 3). For women, higher Mahr was positively associated with verbal possession signals and physical possession signals. For men (see Table 4), higher Mahr was significantly associated with jealousy induction, sexual inducements, submission and debasement, physical possession signals, derogation of mate, and Component 1.

## Discussion

The current study aimed to psychometrically adapt the MRI-SF (Buss et al., 2008) for use in Iran. Our findings are consistent with previous psychometric research of the MRI-SF (e.g., Buss et al., 2008; Lopes et al., 2016). PCA revealed a two-factor structure of benefit-provisioning mate retention and cost-inflicting mate retention, consistent with Miner et al. (2009) and Lopes et al. (2016). The Persian translation of the MRI-SF showed tactic-level internal consistency, demonstrating acceptable $\alpha$ coefficients considering that each tactic consisted of only 2 items. Most of the tactics had higher $\alpha$s as compared with Buss et al. (2008) and Lopes et al. (2016).

Some mate retention tactics demonstrated lower internal consistency. The lowest Cronbach's $\alpha$ was for commitment manipulation. This tactic has shown to have low internal

**Table 4.** Zero-Order Correlations Between Mate Retention Tactics and Other Study Variables Among Men.

| Mate Retention | Age | Partner's Age | Relationship Length | Self-Esteem | Religiosity | SSES | Self-Rated Qeiratiness | Partner's Jealousy | Mahr | Relationship Satisfaction |
|---|---|---|---|---|---|---|---|---|---|---|
| Vigilance | −.21* | −.20* | −.09 | −.23** | −.16 | −.13 | .11 | .25** | .11 | −.22* |
| Concealment of mate | −.17* | −.25** | −.07 | −.08 | .19* | −.07 | .36** | .15 | .04 | −.06 |
| Monopolization of time | −.11 | −.12 | −.00 | −.05 | −.05 | −.12 | .19* | .12 | .14 | −.05 |
| Jealousy induction | −.13 | −.11 | .02 | −.21* | −.14 | .05 | .09 | .22** | .36** | −.11 |
| Punish mate's infidelity threat | −.17* | −.25** | −.15 | −.10 | .01 | .03 | .22** | .33** | .00 | −.19* |
| Emotional manipulation | −.15 | −.14 | −.08 | .07 | .15 | −.08 | .29** | −.09 | .08 | .22* |
| Commitment manipulation | −.06 | −.11 | −.05 | .17 | .18* | −.14 | .37** | .00 | −.17 | .26** |
| Derogation of competitors | −.02 | .01 | .09 | −.11 | .03 | −.07 | .09 | .13 | −.07 | −.16 |
| Resource display | −.05 | −.08 | −.13 | .21* | .03 | .17* | .14 | .19* | −.20 | −.10 |
| Sexual inducements | −.10 | −.19* | −.18 | .21* | .11 | −.06 | .16 | −.04 | −.29** | −.00 |
| Appearance enhancement | −.14 | −.18* | −.19* | .29** | .18* | .11 | .31** | −.05 | −.04 | .01 |
| Love and care | −.05 | −.11 | −.19* | .18* | .06 | .01 | .12 | −.17 | −.21 | .22* |
| Submission and debasement | −.06 | −.01 | −.00 | .27** | .01 | −.03 | .10 | −.01 | −.28* | .05 |
| Verbal possession signals | .07 | .06 | .09 | .04 | −.13 | .04 | −.04 | −.07 | −.21 | .04 |
| Physical possession signals | −.12 | −.06 | −.11 | .02 | −.18* | .18* | −.04 | .12 | −.26* | −.09 |
| Possessive ornamentation | −.18* | −.19* | −.09 | .21* | .27** | .03 | .39** | .03 | −.17 | .03 |
| Derogation of mate | −.14 | −.10 | −.05 | −.09 | .01 | −.03 | .13 | .30** | .46** | −.30** |
| Intrasexual threats | −.22** | −.31** | −.21* | −.04 | .15 | −.15 | .42** | .16 | −.03 | .01 |
| Violence against rivals | −.09 | −.15 | −.11 | .07 | .15 | −.02 | .19* | .20* | .01 | −.11 |
| Benefit provisioning | −.13 | −.16 | −.14 | .26** | .11 | .03 | .28** | −.01 | −.27* | .09 |
| Cost inflicting | −.24** | −.29** | −.12 | −.14 | .06 | −.10 | .35** | .33** | .13 | −.20* |

*Note.* Mahr was measured in married men. SSES = subjective socioeconomic status.
*$p < .05$. **$p < .01$.

consistency coefficients in Buss (1988), Buss et al. (2008), and Lopes et al. (2016). As suggested by Lopes et al. (2016), this low internal consistency may be attributable to the low variance of Item 26 ("Asked my partner to marry me")—49.4% responded "0" to this item, indicating "*never*" performed. The low variance of this item for the commitment manipulation tactic may account for the low internal consistency. This item (number 26) may simultaneously represent several tactics of mate retention (e.g., physical possession or love and care), which may be considered an issue in regard to content validity. Considering that this issue has occurred in different settings across various cultures, future work could either replace or reword this item in order to enhance its corresponding tactic's clarity and psychometric properties.

Following a PCA and parallel analysis on the 19 mate retention tactics, a two-component solution was derived. All tactics clearly saturated on either Component 1 (benefit provisioning) or Component 2 (cost inflicting). That is, no considerable cross loading was observed (see Table 2). Although the original MRI (Buss, 1988) and MRI-SF (Buss et al., 2008) categorized mate retention tactics into the domains of intersexual manipulations and intrasexual manipulations, the factor structure of the Persian MRI-SF in the current sample was more consistent with Miner et al. (2009) and Lopes et al. (2016). The extracted component structure indicates that Component 1 includes primarily benefit-provisioning tactics, and Component 2 consists of primarily cost-inflicting tactics.

The component structure obtained in the current study diverged slightly from the conceptualization offered by Miner et al. (2009). The benefit-provisioning component included all tactics as proposed by Miner et al. (2009) but, in addition, included two cost-inflicting tactics—emotional manipulation and commitment manipulation. The cost-inflicting component in Iran, therefore, includes all the tactics proposed by Miner et al. (2009), with the exception of the two tactics that loaded onto the benefit-provisioning component in the Iranian sample. For Iranian couples, mate retention tactics of emotional manipulation and commitment manipulation appear to reflect benefit-provisioning mate retention behaviors. Because the items for the emotional manipulation and commitment manipulation tactics are behaviors demonstrating interest in a long-term committed relationship (e.g., "Told my partner that we needed a total commitment to each other"), these acts may be interpreted as benefit-provisioning behaviors, rather than cost-inflicting behaviors—consistent with previous research (Lopes et al., 2016).

Results of the present study support the use of the MRI-SF in Iranian culture by examining the relationship between mate retention behavior and culture-specific variables. Qeiratiness connotes being protective against unwanted attention toward the partner (see Atari & Jamali, 2016a) and is conceptually similar to the evolutionary notion of mate retention and culture of honor (see Nowak, Gelfand, Borkowski, Cohen, & Hernandez, 2016). Men's self-report of Qeiratiness was positively associated with benefit-provisioning mate retention and cost-inflicting mate retention behaviors, and women's perception of their partner's Qeiratiness was correlated with benefit-provisioning mate retention and cost-inflicting mate retention.

These findings may be explained by similarity hypothesis (Buss, 1985; Vandenberg, 1972), such that individuals who end up together usually have similar characteristics and are generally similar on many dimensions. Women, who have Qeirati partners performing frequent mate retention, may then also perform frequent mate retention. The same reasoning may apply to female jealousy.

At the tactic level, Iranian men reported higher mean performance frequency of concealment of mate than Iranian women. Iranian men may conceal their mates in order to reduce the likelihood of partner infidelity. Concealment of mate is conceptually similar to the Qeiratiness variable measured in the current study, such that in Iranian culture, Qeiratiness reflects the social acceptability for men to prevent their female partners (and female family members) from contact with other men. Men also used the mate retention tactics of intrasexual threats and violence against rivals more frequently than did women. Both of these tactics are considered intrasexual negative inducements that are behaviors directed toward potential same-sex rivals. As with the tactic of concealment of mate, these mate retention tactics conceptually reflect Qeiratiness in Iranian culture. For example, if a potential rival flirts a man's partner, it is socially acceptable for him to react or employ violence against the potential poacher. Such reactions are occasionally supported by Islamic law, which currently prevails in Iran. Iranian men also reported higher performance frequency of commitment manipulation than Iranian women. This difference may be attributable to item, "Asked my partner to marry me,"[1] specifically. In Iranian culture, it is uncommon for a woman to ask a man to marry her.

We also investigated the relationships between mate retention behaviors and Mahr (see Mir-Hosseini, 1993). Mahr is a certain amount of money or properties that the groom promises to give to the bride in case of unilateral divorce. For women, higher Mahr was positively associated with mate retention tactics of verbal possession signals and physical possession signals. Married women with higher amount of Mahr may perform possession-oriented tactics of mate retention. A husband who sets high amount of Mahr may be considered a high-value mate with high resources. Iranian women with high Mahr may therefore accentuate partner possession in social settings (e.g., "Bragged about my partner to other women"). For men, Mahr of wife was positively associated with mate retention tactics of jealousy induction and derogation of mate, suggesting that Iranian men who set high Mahr for their wives may perceive that their wife has high mate value. These men may induce jealousy to artificially inflate their own mate desirability by demonstrating their popularity with other women. Additionally, for men, Mahr of wife was negatively associated with tactics of sexual inducements, submission and debasement, and physical possession signals. Iranian men may submit to their partner (e.g., "Gave in to my partner's every wish") to avoid legal costs of the Mahr associated with divorce.

The current research also investigated evolutionarily predicted sex differences in performance frequencies of mate retention behaviors that have been documented in U.S. samples (e.g., Buss & Shackelford, 1997) and cross-cultural samples (e.g., Lopes et al., 2016). In accordance with this previous research, men reported more frequent performance of the mate retention tactics of resource display and violence against rivals than women. In contrast, women reported more frequent performance of the mate retention tactics of appearance enhancement. Although this difference was statistically nonsignificant at the corrected significance level set in the current study ($p < .003$), the effect size for this sex difference in appearance enhancement is moderate in size. Consistent with previous findings (e.g., Lopes et al., 2016), the magnitude of sex difference in resource display was greater than that of appearance enhancement.

To further validate the MRI-SF in Iran, we examined the relationships between mate retention tactics and domains with participant age, partner's age, and relationship length (Tables 3 and 4). All mate retention tactics were negatively correlated with participant age and partner's age except for the derogation of mate tactic.[2] The associations between benefit-provisioning mate retention and cost-inflicting mate retention domains and relationship length were also negative, indicating that the use of mate retention tactics decreases as the romantic relationships progress—consistent with previous research (Pazhoohi, Jahromi, & Doyle, 2016; Shackelford et al., 2004).

Further analyses examined the relationships between mate retention behaviors and self-esteem and relationship satisfaction. Self-esteem is positively associated with benefit-provisioning mate retention among men and women, suggesting those with higher self-esteem are more likely to provision their partner with benefits (e.g., love and care), consistent with previous work addressing the relationship between self-esteem and mate retention behavior (Holden et al., 2014). Also in accordance with previous research (e.g., Salkicevic, Stanic, & Grabovac, 2014; Shackelford & Buss, 2000), for both men and women, relationship satisfaction was positively associated with benefit-provisioning mate retention and negatively associated with cost-inflicting mate retention.

To our knowledge, previous research has not investigated the association between religiosity and mate retention behavior. Results of the current study reveal that intrinsic religiosity was associated with benefit-provisioning mate retention (e.g., submission and debasement) among women. For men, religiosity was positively associated with the tactics of possessive ornamentation, concealment of mate, commitment manipulation, and appearance enhancement. For men, religiosity was negatively associated with the tactics of physical possession signals. The current study utilized a single-item measure of religiosity on an exploratory basis, however. Future research could therefore explore this relationship with broader measures that more fully capture the breadth of religiosity.

## Limitations and Future Directions

There are limitations of the present study that are worth noting. Our sampling strategy was a nonprobability strategy in one city of Iran (Tehran). This sample may not necessarily accurately

represent the total Iranian population, and therefore, the replication of this research is especially warranted. Considering the different cultures and languages (e.g., Kurdish, Turkish, and Guilaki) present in Iran, future investigations could explore performance frequency of mate retention behaviors in relation to the cultural-specific aspects of these areas. Further, exploratory methods were utilized to examine the component structure of the Persian translation of the MRI-SF in Iran. It is recommended that future research uses confirmatory techniques (i.e., confirmatory factor analysis) to evaluate the structure of the MRI-SF in different Iranian samples.

Previous cross-cultural research has examined mate retention behaviors in Croatia (Kardum et al., 2006), Spain (de Miguel & Buss, 2011), and Brazil (Lopes et al., 2016). The validation of the Persian MRI-SF adds to this growing literature and affords continued cross-cultural research on mate retention behavior. Future research can continue to investigate cultural similarities and differences in mate retention behavior in an effort to mirror the established cross-cultural literature on mate preferences (e.g., Conroy-Beam, Buss, Pham, & Shackelford, 2015). For example, comparisons of mate retention behaviors between Western and non-Western societies can seek to establish measurement invariance and structural equivalence of the MRI-SF across the cultures in which mate retention has been previously studied. We recommend continued cross-cultural research on mate retention to extend evolutionary psychological research to other non-Western cultures (e.g., Atari, Barbaro, Sela, Shackelford, & Chegeni, 2017).

## Conclusions

The current study examined the psychometric properties of the MRI-SF in Iran. Results of the current study provide a psychometrically valid and reliable version of the MRI-SF for empirical use in Iran, revealing evidence for component validity and tactic-level internal consistency. The current study provides novel results regarding the associations between Iranian culture and mate retention that have not been previously explored—providing researchers with profitable avenues for future research. This Persian MRI-SF can be used to explore various aspects of romantic relationships from an evolutionary psychological perspective. The findings in the current study contribute to the growing literature on mate retention and add to broader evolutionary psychological research in non-Western samples (e.g., Atari & Chegeni, 2017).

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### Notes

1. We also evaluated the sex differences for Item 7 and Item 26. The mean score of Item 7 did not differ across sexes ($t = 0.22$, $p = .83$); however, the mean score of Item 26 was significantly different across sexes ($t = 14.48$, $p < .001$).
2. The correlation coefficient between derogation of mate and age, controlling for relationship satisfaction, was negative and nonsignificant (partial $r = -.04$, $p > .05$).

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