2024-01-01

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Published in:
Personality and Individual Differences

DOI:
10.1016/j.paid.2024.112685

Publication date:
2024

Document version:
Publisher's PDF, also known as Version of record

Personality and Individual Differences 225 (2024) 112685

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Association of life history strategy and mate retention behavior in men and women

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ARTICLE INFO

Keywords:
Mate retention behavior
Cost-inflicting
Benefit-provisioning
Life history strategy

ABSTRACT

From an evolutionary perspective, both men and women use a variety of guarding tactics to keep their romantic partners in the relationship. For men, these benefits increase paternity certainty, while for women, they guarantee male investment in the woman and her children. The current research aimed to explore the association between life history strategy (LHS) and mate retention behaviors in men and women from Iran and the UK. We hypothesized that individuals with a slower life history strategy will show a positive association with benefit-provisioning mate retention (e.g., gift-giving, affection), and a negative association with cost-inflicting mate retention (e.g., emotional manipulation, threats). Across three studies we explored the link between life history strategy and mate retention behaviors among heterosexual adults in Iran and the United Kingdom, revealing that a slower life history strategy predicted benefit-provisioning mate retention strategies in men. Specifically, Iranian men with a slower life history strategy and better health were more inclined to employ benefit-provisioning behaviors to retain mates, unlike Iranian women, where education level and age inversely related to mate retention efforts. In the UK, women who considered financial benefits important in maintaining a relationship positively predicted cost-inflicting while age was negatively associated. For UK men, a slower life history and perceived financial importance in relationships were linked to employing both types of mate retention strategies. These findings highlight cultural differences in mate retention approaches and suggest socioeconomic and educational factors significantly impact these behaviors. The research underscores the complex interplay between ecological factors, life history strategy, and mate retention efforts, suggesting that individuals with a slower life history strategy are more inclined to use positive strategies for maintaining relationships, a trend more pronounced in men across both studied regions.

1. Introduction

From an evolutionary perspective, in a long-term relationship, men and women exhibit various mate retention behaviors to keep their partners in the relationship and prevent infidelity (Buss, 1988, 2002). A woman's sexual infidelity may lead her mate to unintentionally invest in another man's offspring, and, conversely, a man's infidelity may lead to the loss of material, social, or emotional resources for a woman and her offspring (Buss & Shackelford, 1997; Davis et al., 2021). It has been proposed that partners employ different mate retention tactics, ranging from vigilance to violence, to keep their romantic partners close and prevent infidelity (Buss, 2002). Mate retention behaviors fall into two main categories: benefit-provisioning and cost-inflicting (Miner et al., 2009), with the former considered low-risk (e.g., positive inducement and public signs), while the latter is considered high-risk (direct guarding, intersexual, and intrasexual negative inducement) (Buss et al., 2008; Miner et al., 2009; Shackelford et al., 2005). Cost-inflicting is considered a high-risk /low-cost strategy, as the partner does not have to employ many resources but runs the risk of losing a partner if the strategy is not implemented. Conversely, cost-inflicting strategies are considered low-risk/high-cost strategies as the partner invests in many resources for partner retention but the effect of partner retention is low (Holden et al., 2014).

Organisms adjust their behavior and life strategies to fit their specific ecological niche. Since resources and energy are limited, organisms must prioritize how they use these resources based on their physical and

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https://doi.org/10.1016/j.paid.2024.112685
Received 25 February 2024; Received in revised form 13 April 2024; Accepted 15 April 2024
Available online 22 April 2024

resource-related constraints (Ellis et al., 2009). Life history theory offers a framework to understand how organisms make trade-offs in allocating resources, energy, and time for maintenance, growth, and reproduction (Stearns, 1992). According to life history theory, organisms in harsh and unpredictable environments tend to adopt "fast strategies," which involve early puberty, having more offspring, and investing less in each individual offspring. Conversely, organisms in safer environments tend to adopt "slow strategies," such as delayed puberty, having fewer offspring, and investing more in each offspring's well-being (Ellis et al., 2009). Individuals also exhibit behavioral and psychological variations along a fast-slow continuum, reflecting their life strategies (Figueredo et al., 2006; Réale et al., 2010). Fast strategies are associated with seeking short-term gains and displaying opportunistic attitudes, while slow strategies involve delayed gratification and a focus on long-term goals and plans (Griskevicius et al., 2013).

Different individuals might choose various forms of mate retention based on their life-history strategy. While individual differences in mate retention behaviors have been proposed to be explained by individual differences in LHS (Figueredo et al., 2006), to the best of our knowledge, no prior research has set out to test this relationship. Previous research has shown that individual differences in life history influence various mating behaviors, including mate choice, mating patterns, and parental behavior. Indeed, a slow life history indirectly inhibits violent and negative behaviors, which, in turn, affect intimate partner aggression negatively (Figueredo et al., 2010, 2018). This inhibition is partially explained by slow life history individuals demonstrating higher executive functioning, which, in turn, is associated with emotional control and greater self-regulation (Kaighobadi et al., 2021). Conversely, males with a faster life history are more likely to engage in intimate partner violence when they suspect infidelity in their partner (Kiire, 2019). Considering that men are more likely to pursue short-term partners, they may benefit from using a high-risk mate retention strategy, such as a cost-inflicting approach (Kiire, 2019). Accordingly, in the current study, we test whether individual differences in life history strategy are associated with mate retention strategies. In particular, we predict that a slower LHS is positively associated with benefit-provisioning and negatively with cost-inflicting mate retention behaviors. Benefit-provisioning mate retention includes positive inducements such as expensive gift-giving, being attractive and affectionate, and displaying public signals of possession, while cost-inflicting mate retention involves negative inducements such as lowering one's partner's self-esteem, emotional manipulation, and threat (Miner et al., 2009). Although exploratory, we also expect sex differences in these associations. Men and women seek different motives in a relationship, such as men seeking a stronger preference for attractive, young mates and women seeking older mates with good financial prospects (Walter et al., 2020), have different life histories (Tanha et al., 2010), and employ different mate retention strategies (VanderLaan & Vasey, 2008). To test our predictions, we investigate the association between mate retention behaviors and life history, as well as education, health, and income, which are additional indicators of LHS (Pepper & Nettle, 2017).

2. Study 1

2.1. Method

2.1.1. Participants

A total of 205 individuals (107 women and 98 men) in a committed relationship (married or in a relationship) aged between 19 and 61 years ($M = 34.26$, $SD = 9.21$) were recruited via social media (i.e., WhatsApp messenger through the snowballing technique) from Iran. A power analysis indicated that given our female and male sample sizes, we had respectively 89 % and 86 % power to detect a medium effect size ($r = 0.30$) for using correlations.

2.1.2. Measures

2.1.2.1. Mate retention behaviors. We used the Mate Retention Inventory-Short Form (MRI-SF; D.M. Buss et al., 2008) to measure mate retention behaviors. The MRI-SF comprises 38 items and evaluates two categories of mate retention: cost-inflicting behaviors (22 items; for example, "Talked to another woman at a party to make my partner jealous") and benefit-provisioning behaviors (16 items; for instance, "Complimented my partner on her appearance"). The Cronbach α for cost-inflicting and benefit-provisioning of our sample were 0.80 and 0.86. The participants were asked to indicate how frequently they had performed each behavior in the past year, using a scale that ranged from 1 (never performed this act) to 4 (often performed this act). Each sex answered to the version of the survey designed for them.

2.1.2.2. Life history. The Mini-K Life History Battery, a shorter version of the Arizona Life History Battery (Figueredo et al., 2006), was used to assess the life history of participants. It comprises 20 items, rated on a seven-point scale, ranging from '–3' (strongly disagree) to '+3' (strongly agree). The responses were averaged to determine individual scores (Cronbach $\alpha = 0.87$), with higher scores indicating a slower strategy.

2.1.3. Procedure

After consenting to participate in the study, participants answered sociodemographic questions, including their health and income (both on a 5-point scale, from 1 (very bad) to 5 (very good), as well as their level of education and age. Next, participants were asked to answer Mini-K and MRI-SF surveys. The scores for Mini-K, cost-inflicting, and benefit provisioning scales were averaged.

2.2. Results

Table 1 shows the Pearson correlation results between the variables for male participants. Cost-inflicting and benefit-provisioning mate retention categories were significantly correlated. Benefit-provisioning was significantly correlated with life history strategy, income, education and health. The latter results suggests that those men with slower life history (indicated by higher Mini-K, income, education and health) more frequently engage in benefit-provisioning as mate retention strategy.

Regression analyses were conducted to identify the variables that most significantly predict the use of cost-inflicting and benefit-provisioning mate retention strategies among male participants. The regression model was significant in predicting benefit-provisioning, $F(5, 92) = 13.86$, $p < .001$, $R^2 = 0.40$, but not cost-inflicting mate retention strategies, $F(5, 92) = 1.10$, $p = .367$, $R^2 = 0.01$. Table 2 presents the standardized coefficients for each of the predictors in the benefit-provisioning model. In the model, life history (Mini-K) and health were associated with a higher likelihood of using a benefit-provisioning mate retention strategy. That is, men who have a slower life history and a better health condition were more likely to use benefit-provisioning mate retention strategies such as positive inducement and public signals of possession. There was also a significant effect for age. Younger males were more likely to use benefit-provisioning strategies.

Table 3 shows the Pearson correlation results between the variables for female participants. Similar to men, cost-inflicting and benefit-provisioning mate retention categories were significantly correlated. For female participants, education was negatively associated with cost-inflicting and benefit-provisioning mate retentions.

Regression analyses were conducted to identify the variables that most significantly predict the use of cost-inflicting and benefit-provisioning mate retention strategies among female participants. The regression models was significant in predicting cost-inflicting, $F(5, 101) = 4.98$, $p < .001$, $R^2 = 0.20$, but not benefit-provisioning mate retention strategies, $F(5, 101) = 1.43$, $p = .219$, $R^2 = 0.07$. Table 4 presents the

Table 1
Zero-order correlation matrix for male participants ($N = 98$).

	1	2	3	4	5	6	7
1. Cost-Inflicting	–						
2. Benefit-Provisioning	0.42**	–					
3. Mini-K	0.13	0.55**	–				
4. Income	−0.08	0.33**	0.28**	–			
5. Education	0.00	0.38**	0.37**	0.63**	–		
6. Health	0.10	0.43**	0.41**	0.23*	0.32**	–	
7. Age	−0.14	0.03	0.21*	0.47***	0.38***	0.22*	–

* <0.05.
** <0.01.
*** <0.001.

Table 2
Multiple regression model for life history variables predicting benefit-provisioning mate retention strategies for Iranian men, $F(5, 92) = 13.86$, $p < .001$, $R^2 = 0.40$.

	B	*SE*	CI	*p*
Mini-K	0.40	0.05	[0.22, 0.58]	< 0.001***
Income	0.20	0.07	[−0.01, 0.41]	0.067
Education	0.13	0.06	[−09, 0.34]	0.247
Health	0.23	0.03	[0.05, 0.41]	0.011*
Age	−0.24	0.01	[−0.42, −0.06]	0.009**

* <0.05.
** <0.01.
*** <0.001.

Table 3
Zero-order correlation matrix for female participants ($N = 107$).

	1	2	3	4	5	6	7
1. Cost-Inflicting	–						
2. Benefit-Provisioning	0.57**	–					
3. Mini-K	−0.08	0.03	–				
4. Income	−0.03	−0.07	0.16	–			
5. Education	−0.38**	−0.20*	0.10	0.19*	–		
6. Health	−0.01	0.07	0.07	0.30**	0.16	–	
7. Age	−0.25*	−0.11	0.11	−0.10	0.08	−0.16	–

* <0.05.
** <0.01.

Table 4
Multiple regression model for life history variables predicting cost-inflicting mate retention strategies for Iranian women, $F(5, 101) = 4.98$, $p < .001$, $R^2 = 0.20$.

	B	*SE*	CI	*p*
Mini-K	−0.02	0.04	[−0.20, 0.16]	0.853
Income	0.02	0.05	[−0.17, 0.41]	0.804
Education	−0.38	0.05	[−56, −0.19]	< 0.001**
Health	0.01	0.03	[−0.18, 0.20]	0.893
Age	−0.21	0.01	[−0.39, −0.03]	0.025*

* <0.05.
** <0.001.

standardized coefficients for each of the predictors in the cost-inflicting model. In the model, education and age were associated with a lower likelihood of using a cost-inflicting mate retention strategy. That is, women who are older and higher education were less likely to use cost-inflicting mate retention strategies such as direct guarding or negative intrasexual inducement. No other predictor was significant.

2.3. Discussion

Our results provide evidence for a positive relation between benefit-provisioning and slow life history strategy among male participants. This means that Iranian men with a slower life history strategy, better health, and younger in age, engage more in benefit-provisioning behaviors to retain their mates. As for the female participants, education was negatively associated with using a cost-inflicting mate retention strategy. This indicates that as education levels increased, Iranian women were less likely to engage in direct guarding or intrasexual negative inducements. The contrast between men and women in the direction of association between education and benefit-provisioning mate retention suggests that while higher educated men might choose to adhere to positive inducements more frequently to retain their partners, an increase in women's education leads to a decrease in positive inducement behaviors as well as negative ones.

To explore if the findings from Iranian women in the first study replicate in another culture, we recruited female participants from the UK for the second study. Moreover, in the second study, we explicitly asked the participants about their opinion on how much providing material or financial benefits is important in maintaining a relationship. This question was included to investigate whether the link between benefit provisioning and Mini-K scores stems from variations in life history strategy or differences in wealth.

3. Study 2

3.1. Method

3.1.1. Participants

A total of 154 undergraduate female students in a committed relationship (married or in a relationship) from the United Kingdom ($M = 20.40$, $SD = 2.97$) were recruited to participate in this study in exchange for course credit. The sample demographics were White ($N = 137$), Asian ($N = 9$), Mixed ($N = 4$), Black ($N = 1$), and Other ($N = 1$).

3.1.2. Materials and procedure

The measures were identical to Study 1. Upon consent, women answered sociodemographic questions, including their health and income (both on a 5-point scale, from 1 (very bad) to 5 (very good), and their level of education. They answered the Mini-K and MRI-SF. Like Study 1, the scores for the Mini-K were averaged, and the subscales for the MRI-SF were averaged to include one score for cost- inflicting and one score for benefit-provisioning. The Mini-K demonstrated acceptable reliability (Cronbach $\alpha = 0.67$), and the MRI-SF demonstrated good reliability (Cronbach $\alpha = 0.88$). In addition to these questions, women were also asked how important providing material or financial benefits were important in maintaining a relationship, which was measured on a 5-point Likert scale, where "1 = not at all important" to "5 = extremely important".

3.2. Results

Table 5 shows the Pearson correlation results between the variables for female participants. Cost-inflicting and Benefit-provisioning were

Table 5
Zero-order correlation matrix for female participants ($N = 154$).

	1	2	3	4	5	6	7
1. Cost-Inflicting	–						
2. Benefit-Provisioning	0.40**	–					
3. Mini-K	−0.03	0.21**	–				
4. Income	−0.07	0.04	0.28***	–			
5. Education	0.07**	0.05	0.13	−0.02	–		
6. Health	0.01	0.09	0.24**	0.01	−0.08	–	
7. Financial Importance/Relationship	0.26***	−0.005	−0.14	0.09	0.08	−0.07	
8. Age	−0.14	−0.16*	−0.09	−0.21*	−0.06	−0.08	0.01

* <0.05.
** <0.01.
*** <0.001.

significantly correlated. Benefit-provisioning, but not cost-inflicting, was significantly correlated with a slower life history strategy. Education was weakly correlated with using a cost-inflicting mate retention strategy. Furthermore, women who used cost-inflicting mate retention strategies were more likely to find financial benefits important in maintaining and keeping a relationship.

A regression analyses was conducted to determine which variables contributed most in predicting cost inflicting and benefit provisioning mate retention strategies. The regression model was significant in predicting cost-inflicting, $F(6, 147) = 3.00$, $p = .009$, $R^2 = 0.11$, but not benefit-provisioning mate retention strategies, $F(6, 147) = 1.89$, $p = .09$, $R^2 = 0.07$. Table 6 presents the standardized coefficients for each of the predictors in the cost-inflicting model. In the model, financial importance in a relationship was associated with a higher likelihood of using a cost-inflicting mate retention strategy. That is, females who consider financial benefits in maintaining a relationship were more likely to use strategies, such as direct guarding or intrasexual competition inducement. There was also a significant effect for age. Younger females were more likely to use cost-inflicting strategies. There were no other significant predictors in the model.

3.3. Discussion

Study 2 primarily used a university sample in the United Kingdom. The results showed that financial importance in maintaining a relationship and age were associated with using a cost-inflicting mate retention strategy. The results are similar to Study 1, where age was negatively associated with using a cost-inflicting strategy, but education in Study 2 did not predict using a mate retention strategy. However, it should be noted that there is less variability in educational level in the sample of undergraduate students.

In the third study, we recruited a sample of UK men to test whether the results found in an Iranian male sample in the first study also replicate in another sample. In addition to asking about the importance of providing material/financial benefits in maintaining a relationship, we also explored men's perceived current and childhood socioeconomic status as another means of measuring life history strategy.

Table 6
Multiple regression model for life history variables predicting cost-inflicting mate retention strategies, $F(6, 147) = 3.00$, $p = .009$, $R^2 = 0.11$.

	B	*SE*	CI	*p*
Mini-K	0.01	0.05	[−0.15, 0.18]	0.880
Income	−0.10	0.03	[−0.30, 0.02]	0.103
Education	0.04	0.04	[−0.10. 0.21]	0.593
Health	0.03	0.03	[−0.11, 0.20]	0.711
Financial Importance/ Relationship	0.27	0.03	[0.11, 0.43]	0.001**
Age	−0.17	0.009	[−0.33, −0.01]	0.033*

* <0.05.
** <0.001.

4. Study 3

4.1. Method

4.1.1. Participants

A total of 169 men from the United Kingdom ($M = 41.83$, $SD = 12.93$) who reported to be in a committed relationship were recruited through Prolific website to participate in this study. The sample demographics were White ($N = 114$), Asian ($N = 10$), Mixed ($N = 4$), Black ($N = 27$), and Other ($N = 4$).

4.1.2. Materials and procedure

The materials and procedure were identical to Study 2. Upon consent, participants completed a series of demographic questionnaires, the Mini-K (Cronbach α = 0.83), and the MRI-SF (Cronbach α = 0.93). An additional measure for income, the Perceived Resources Availability scale (Griskevicius et al., 2011) was used to measure men's childhood and adult perceived social economic status (Cronbach α = 0.74). The perceived resource availability scale is a 6-item scale measured on a 7-point Likert scale to responses, such as "My family usually had enough money for things when I was growing up," (Childhood SES) and "I have enough money to buy things if I want." (Adult SES).

4.2. Results

Table 7 shows the Pearson correlation results between the variables for male participants. Cost-inflicting and benefit-provisioning mate retention strategies were significantly correlated. Cost-inflicting and benefit-provisioning were positively correlated with a slower life history strategy. Both mate retention strategies were positively correlated education, financial importance in maintain a relationship, and perceived childhood SES, while current income, perceived adult SES, and health were positively correlated with a benefit-provisioning mate retention strategy.

The regression models for predicting cost-inflicting, $F(8, 150) = 6.45$, $p < .001$, $R^2 = 0.26$, and benefit-provisioning, $F(8, 150) = 9.70$, $p < .001$, $R^2 = 0.34$, were significant. Table 8 presents the regression model for cost-inflicting. Across all predictors, financial importance in a relationship significantly predicted using a cost-inflicting mate retention strategy. Males who considered financial benefits important in maintaining a relationship were more likely to use cost-inflicting strategies. Table 8 presents the regression model for benefit-provisioning strategies. Individual differences in life history strategies, as measured by the Mini-K, and financial importance in a relationship were significantly associated with benefit-provisioning strategies, see Table 9. Males with a slower life-history strategy and those who considered financial benefits important in maintaining a relationship were more likely to use a benefit-provisioning strategy, such as using positive inducements and public signs to retain a relationship.

Table 7
Zero-order correlation matrix for male participants ($N = 159$).

	1	2	3	4	5	6	7	8	9
1. Cost-Inflicting	–								
2. Benefit-Provisioning	0.55***	–							
3. Mini-K	0.30***	0.51***	–						
4. Income	0.13	0.21***	0.37***	–					
5. Childhood SES	0.24**	0.18*	0.30***	0.21**	–				
6. Adulthood SES	0.06	0.18*	0.31***	0.67***	0.28***	–			
7. Education	0.14	0.21**	0.19**	0.28***	0.11	0.27***	–		
8. Health	0.14	0.30***	0.43***	0.26**	0.08	0.31**	0.21***	–	
9. Financial Importance/Relationship	0.45***	0.41***	0.38***	0.31***	0.22**	0.17*	0.17*	0.32***	
10. Age	−0.15*	−0.21**	−0.17*	−0.11	−0.12	−0.10	−0.05	−0.26***	−0.08

* <0.05.
** <0.01.
*** <0.001.

Table 8
Multiple regression model for life history variables predicting cost-inflicting mate retention strategies, $F(8, 150) = 6.45$, $p < .001$, $R^2 = 0.26$.

	B	*SE*	CI	*p*
Mini-K	0.13	0.04	[−0.03, 0.30]	0.107
Income	−0.03	0.05	[−0.23, 0.17]	0.710
Childhood SES	0.11	0.03	[−0.03, 0.27]	0.125
Adulthood SES	−0.06	0.03	[−0.26, 0.13]	0.557
Education	0.06	0.02	[−0.07, 0.21]	0.350
Health	−0.06	0.03	[−0.23, 0.09]	0.423
Financial Importance/ Relationship	0.38	0.03	[0.22, 0.54]	< 0.001*
Age	−0.10	0.002	[−0.25, 0.03]	0.143

* <0.001.

Table 9
Multiple regression model for life history variables predicting benefit-provisioning mate retention strategies, $F(8, 150) = 9.70$, $p < .001$, $R^2 = 0.34$.

	B	*SE*	CI	*p*
Mini-K	0.39	0.05	[0.23, 0.55]	< 0.001**
Income	−0.04	0.06	[−0.25, 0.12]	0.451
Childhood SES	−0.006	0.03	[−0.14, 0.14]	0.837
Adulthood SES	0.03	0.03	[−0.16, 0.21]	0.715
Education	0.09	0.03	[−0.04. 0.23]	0.184
Health	0.006	0.04	[−0.11, 0.19]	0.933
Financial Importance/ Relationship	0.25	0.04	[0.10, 0.40]	0.001*
Age	−0.12	0.002	[−0.26, 0.009]	0.068

* <0.01.
** <0.001.

4.3. Discussion

The results of Study 3 demonstrate a positive association between a slower life history strategy and a benefit-provisioning mate retention strategy. Further, men's attitudes towards financial importance in maintaining a relationship were associated with both mate retention strategies, while controlling for all other variables in the model. The results from the UK sample with men replicated the finding from Study 1 with Iranian men—a positive association of benefit provisioning and life history strategy (Mini-K); however, health and age did not predict benefit provisioning. Moreover, it replicated the lack of association between life history and cost inflicting strategy shown in Study 1 with UK men.

5. General discussion

The main aim of the current studies was to investigate the relationship between life history strategy and mate retention behavior among heterosexual adults. Across three studies involving men and women from Iran and the United Kingdom, we found evidence that a slower life history strategy is associated with a benefit-provisioning mate retention strategy, after controlling for income, education, and health. In Study 1, a slower life history strategy in Iranian men was associated with benefit-provisioning, while for Iranian women, there was no association between life history strategy and mate retention strategies. This means that men with a slower life history strategy engage more in benefit-provisioning behaviors to retain their mates. Although other indicators for men's life history, such as health, mirrored the life history association with benefit-provisioning, women's education was negatively associated with a cost-inflicting strategy. This indicates that as education levels increased, women were less likely to engage in any form of mate retention behaviors. In Iran, higher education is prestigious and competitive, heavily dependent on rigorous entrance exams. The costly preparations, often requiring private tutoring, generally limit access to individuals from higher socioeconomic backgrounds who can afford these expenses.

Interestingly, age negatively predicted benefit-provisioning in Iranian men and cost-inflicting mate retention strategies in Iranian women. That is, younger men were more likely to use benefit provisioning strategies, while younger women were more likely to use cost-inflicting strategies. Age has been shown to negatively predict benefit-provisioning strategies but not cost-inflicting strategies (Degiuli et al., 2023). For younger men, retaining a partner is very important, and if the partner is also of a similar youthful age, they may be more desirable to other men, which may facilitate a mate retention strategy (Buss, 2015). Consistent with our findings, older women are less likely to engage in mate retention strategies, as they are more common in younger women, as they may have less trust and feel more insecure with their new partnership (de Miguel & Buss, 2011).

In Study 2, involving women from the United Kingdom, a slower life history strategy was not associated with using a mate retention strategy but financial importance in maintaining a relationship was associated with cost-inflicting strategies. Similar to Iranian women from Study 1, younger women from the United Kingdom were also more likely to use a cost-inflicting mate retention strategy. Study 3 showed that a slower life history strategy and financial importance in a relationship were associated with a benefit-provisioning strategy. The positive association between financial importance and mate retention strategies, suggests that men oriented towards a faster life history are less likely to consider benefits in using resources to maintain a relationship.

The findings of the current studies offer an insightful overview of the relationship between life history strategy and mate retention strategies. Across three studies, we found evidence that men and women employ mate retention strategies as a function of life history indicators, but there were distinct differences in the type of strategy used, based on cultural differences. A slower life history strategy was positively associated with

benefit-provisioning mate retention in men from both Iran and the UK, as well as women from the United Kingdom, while no association was found for Iranian women. It could be argued that ecological factors, such as environmental harshness and differences in intrasexual competition, could explain the differences in mate retention strategies. Environmental harshness and childhood experiences have been shown to predict life history strategies in adulthood, which may regulate partner retention behaviors (Kaighobadi et al., 2021). Although the current studies did not investigate early adversity or ecological harshness directly, in Study 3, we did measure perceived childhood economic harshness. Men with a higher perception of resource availability in childhood, which may indicate a slower life history strategy, were more likely to employ both mate retention tactics. Although it has been suggested that men with a faster life history strategy are more likely to utilize a cost-inflicting, high-risk retention strategy (Kiire, 2019), in the current studies, we did not find evidence to support that association. Instead, men utilizing a faster life history strategy were less likely to use mate retention strategies overall.

It has been suggested that women with a faster life history strategy may employ cost-inflicting strategies to monopolize resources across relationships (Buss, 2015). However, in the current studies, we did not find any evidence to suggest they did. Instead, Iranian women with a slower life history strategy, as indicated by higher education, were less likely to use either strategy (Study 1), while women from the United Kingdom were more likely to use a benefit-provisioning strategy as a function of a slower life history (Study 2). For women in the United Kingdom, the finding may reflect women's overall preferences for long-term relationships in order to derive benefits over an extended period of time and potentially to benefit their offspring (Buss & Schmitt, 1993). Therefore, it may also be expected that women with a slower life history strategy will employ benefit-provisioning tactics to maintain romantic relationships for a longer period (Kiire, 2019).

Overall, our results provide evidence for a positive relationship between benefit-provisioning and slow life history strategy among male participants. This means that men with a slower life history strategy engage more in benefit-provisioning behaviors, such as positive inducements and public signals of possession, to retain their mates. However, contrary to our hypothesis, none of the variables of life history, income, health, or education were negatively associated with cost-inflicting mate retention for male participants, but it was for age. Younger females in Iran and the United Kingdom were more likely to use cost-inflicting strategies, while the association for younger men and benefit-provisioning strategies was only significant in the Iranian sample.

While previous research suggests that men are more aggressive in their relationships than women and more frequently engage in aggressive behavior with their intimate partners (Figueredo et al., 2010, 2018; Tanha et al., 2010), the lack of association between life history strategy (LHS) and cost-inflicting mate retention for men needs further exploration. Further, a previous study showed that in an Iranian sample, mate value was associated with both cost-inflicting and benefit provisioning strategies (Babaeizad et al., 2022). Future research can include mate value as potential moderator to further understand its role as a mechanism in assessing how individuals utilize mate retention strategies. Lastly, our samples recruited individuals that were in a committed relationship. It is unclear if mate retention strategies change throughout the course of a relationship or do individuals enter a relationship with those strategies. An investigation comparing single individuals with those in relationships accounting for relationship satisfaction could provide a fruitful avenue of research.

In summary, our research across Iran and the United Kingdom reveals a clear link between a slower life history strategy and the use of benefit-provisioning mate retention strategies, particularly among men. This association suggests that socioeconomic factors such as income, education, and health play significant roles in shaping such behaviors. However, the divergence in mate retention strategies between genders and across cultures highlights the complex interplay of ecological, educational, and financial factors. These findings underscore the adaptive nature of human mating strategies within varying social and economic contexts, emphasizing the need for further investigation into how these dynamics influence relationship maintenance strategies differently across genders and environments.

Funding

Not applicable.

Ethics approval

This and the following research was conducted in accordance with the Declaration of Helsinki as it pertains to research with human participants.

Consent to participate

All participants consented to taking part in the study.

Consent for publication

All the authors consent.

Code availability

Authors will share upon request.

CRediT authorship contribution statement

Sepide Pazhouhi: Writing – review & editing, Writing – original draft, Investigation, Conceptualization. **Ray Garza:** Writing – review & editing, Writing – original draft, Formal analysis, Conceptualization. **Farid Pazhoohi:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Investigation, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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