

# Attachment Styles And Happiness In The Elderly: The Mediating Role of Reminiscence Styles

Khodamorad Momeni (✉ [kh.momeni@razi.ac.ir](mailto:kh.momeni@razi.ac.ir))

Razi University

Rozita Amani

Bu-Ali Sina University

Parisa Janjani

Kermanshah University of Medical Sciences

Mohammad Reza Majzoobi

University of Siegen

Simon Forstmeier

University of Siegen

Parisa Nosrati

Razi University

---

## Research Article

**Keywords:** attachment styles, reminiscence styles, happiness, elderly, Iran

**Posted Date:** February 2nd, 2022

**DOI:** <https://doi.org/10.21203/rs.3.rs-1300760/v1>

**License:**   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

---

# Abstract

**Background:** The current study aims to investigate the relationship between attachment styles and happiness through the mediating role of reminiscence styles in the elderly.

**Methods:** This was a correlational study of structural equations modelling (SEM) type. The statistical population included all the elderly aged at least 60 years living in Kermanshah province, Iran in 2021, among whom 380 (182 men and 198 women) were selected using convenience sampling method. Participants filled out the questionnaires of Adult Attachment Styles, Oxford Happiness, and Amani et al.'s Reminiscence Styles.

**Results:** The results indicated that secure attachment style has a positive and negative relationship with positive reminiscence (PR) and negative reminiscence (NR), respectively. However, the opposite held true for both avoidant and ambivalent attachment styles. It was also found that secure attachment style has a positive relationship, and avoidant and ambivalent attachment styles have a negative relationship with happiness. Moreover, participants' gender and age had no moderating effect on the mentioned relationships. The results of SEM indicated that secure and ambivalent attachment styles were associated with happiness through both PR and NR, and avoidant attachment style was associated with happiness only through NR.

**Conclusions:** The findings emphasize the significance of the development of internal working models based on the kind of parent-child's reminiscences and narratives, and the lifelong effects of these models.

## Background

Aging refers to a biological and inevitable process that inevitably affects all people (1). The phenomenon of aging appears to be one of the substantial issues of the current century, mainly because the world's population is rapidly aging (2). Social, economic and scientific developments in recent years have contributed to an increase of life expectancy and a decrease of mortality rates, which in turn have led to a significant increase in the elderly population (3). In 2010, the World Health Organization (WHO) estimated that there are 524 million people aged 65 and over worldwide. This number, which is about 8% of the global population, is projected to increase to 1.5 billion by 2050 and to cover about 16% of the global population, and the growth rate seems to be more in developing countries (World health organization, 2011). Iran, as one of these developing countries, is no exception to this population change. According to the Statistical Center of Iran (SCI), the elderly population of this country has increased from 6.4% in 1966 to 9.1% in 2016 (5). One of the consequences of aging is a decrease in the extent of happiness (6). Studies have shown that happiness declines with age (3) and more than ninety percent of the elderly have a moderate level of happiness (7).

Happiness as a positive inner experience seems to be one of the indicators of mental health that stem from the cognitive and emotional evaluation people carry out in their own lives (8). Happiness produces passion, vitality, energy, movement and dynamism, and protects human beings against stressful events

(9). Studies have demonstrated that happiness is associated positively with prominent variables in the elderly such as life satisfaction (10, 11), mental health (11–13), self-transcendence (14), and social health (15). Mass et al. (16) figured out that the low level of happiness is related directly to poor mental health and the high degree of disability among the elderly. Lobos et al. (17) also found that happiness is correlated with perceived physical and mental health, life satisfaction and quality of life in older adults. Due to the significance of happiness and its positive consequences in improving individual and social life, efforts have been made by a great number of psychologists toward a better understanding of happiness and its relationship with diverse variables (18). The previous studies have introduced the role of various variables such as economic status (7, 19), social participation (20), religious attitude (21), self-esteem (Amani, 2016; Nanthamongkolchai et al., 2009) and perceived social support (23) in predicting happiness in the elderly. Attachment style, as well, has been presented as one of the most central predictors of happiness (24, 25).

Bowlby defined attachment as a “lasting psychological connectedness between human beings.” (1969, p. 194). Bowlby has also stated that attachment can be understood within an evolutionary context in which the parents (or caregivers) provide the infant with safety and security (27). Hollist and Miller (28) defined attachment as a deep emotional connection and affective communication with certain people in life whom a person feels enjoyment and comfort when interacting with. This connection predicts people’s interaction with the world around them. Shaver and Hazan (29) divided adult attachment styles into three categories of secure, avoidant, and ambivalent. Secure people, who have a history of warm and responsive interaction with their attachment figures (parents), are usually characterized by having a positive view of themselves and others. These people, who find it relatively easy to involve in an intimate relationship with others, are comfortable depending on others and having others depend on them, and are not worried about being alone and not being accepted by others (30). Avoidant individuals, however, are usually uncomfortable having close relationship with others and they are likely to find it hard to trust others. Finally, ambivalent adults, who seems to be overly dependent on others, believe that others are reluctant to build a close relationship with them (31). Attachment style affects individuals’ perception of themselves and others, and the way they manage their interpersonal relationships. According to this theory, attachment style appears to have lifelong effects, and determine how individuals cope with their interpersonal problems during their lives (32–35). Therefore, secure attachment is thought to be a protective resource for the elderly as well (36). In a way that the ability to establish and maintain a secure attachment may protect a person against physical and psychological damage such as physical decline, cognitive and social disability, lack of self-esteem, and death of spouse, other family members or friends late in life (37).

Although the aforementioned studies have outlined the relationship between attachment styles and happiness in the elderly, few studies have examined how this relationship may work, namely the pathways through which attachment styles may affect happiness. Almost no studies to our knowledge have examined this pathway in the elderly. For instance, Kamari and Shekhaeslami (38) stated that attachment styles are associated with happiness through optimism in college students. Zhang et al. (39) also figured out that attachment styles are associated with happiness through self-esteem and social

support in children. Though studies have indicated the mediating role of optimism, self-esteem, and social support in the relationship between attachment styles and happiness, no study, as of yet, has focused on reminiscence styles as the mediator variable between attachment styles and happiness neither in ages other than the elderly nor in the elderly.

Reminiscence refers to the process of thinking or talking about past experiences and memories (40). Watt and Wong (41) divided reminiscence into six different types including integrative (reviewing life and finding meaning and value from past experiences), instrumental (reminiscing about past experiences in order to solve problems and reinforce present performance), transmissive (recalling memories in order to share specific knowledge), escapist (reviewing the past and perceiving it as a better time than it is now), obsessive (reminiscing about negative times in life and repeatedly thinking about them), and narrative reminiscence (reviewing the past experiences in the shape of a story). Studies on the effectiveness of different types of reminiscence have illustrated the impact of integrative reminiscence on depression, well-being, integrity, self-esteem and life satisfaction (42), instrumental reminiscence on coping (43) and depression (44, 45), transmissive reminiscence on general health (46), as well as narrative reminiscence on happiness (47) and the meaning of life (48) in the elderly. Studies have also shown that attachment styles play a significant role in shaping the type of reminiscence in individuals. For example, Molinari et al. (49) found that compared to unsecure older adults, secure ones scored higher on the teach/inform (transmissive) reminiscence. They also found that there is a significant negative correlation between fearful attachment and teach/inform reminiscence. In addition, it has been realized that the extent of coherence on mothers' adult attachment interview (which is a valid sign of secure attachment) has a significant positive relationship with their elaborative reminiscence along with their children and their children's interpersonal self-concept (50).

Although studies have shown the effectiveness of reminiscence-based interventions on increasing happiness in the elderly (51–54), fewer studies have examined the relationship between reminiscence styles, as a self-report variable, and happiness in the elderly. Conducting an important study, Webster (24) examined the relationship of attachment styles and reminiscence styles with happiness, the results of which indicated that on the one hand, attachment style is a significant predictor of four types of reminiscence, namely bitterness revival (obsessive), identity (integrative), problem solving (instrumental) and teach/inform (transmissive). In a way that dismissive and secure groups showed a lower rate of bitterness revival compared to preoccupied and fearful groups, the fearful group showed more identity reminiscence than the dismissive and secure groups did. The dismissive and secure groups showed a lower rate of problem-solving reminiscence compared to fearful group. Finally, the secure group showed a higher extent of teach/inform reminiscence compared to dismissive and fearful groups. On the other hand, bitterness revival, boredom reduction, identity, and problem-solving reminiscences had a significant negative relationship with happiness. Besides, conversation and teach/inform reminiscences showed a significant positive relationship with happiness. Although Webster's study has somewhat outlined the relationship among attachment styles, reminiscence styles and happiness, no information is provided on how all three of these variables are related together in the form of a structural model. Therefore, the study of the relationship between these three variables in the form of a structural model can bridge one of the

existent gaps in the research literature related to this field of inquiry, particularly in the elderly age group, wherein the reminiscence construct serves a very decisive role.

There are also contradictory findings regarding the role of participants' gender and age in the extent and type of reminiscence in the elderly. For example, Webster (24) did not find out any gender difference in the extent and type of reminiscence in the elderly. Webster also found that older people are more inclined to do death preparation, intimacy maintenance, and teach/inform reminiscences, and that young people more tend to do bitterness revival, identity, and problem-solving reminiscences. However, Webster and McCall (54) demonstrated that women score higher on identity reminiscence and lower on bitterness revival. Webster and McCall also figured out that younger people score higher on boredom reduction, bitterness revival and identity, and older people were more likely to do teach/inform and death preparation reminiscences.

Therefore, considering the gaps and contradictions in the research literature related to this field of inquiry, this study was to investigate the relationship between attachment styles and happiness through the mediating role of reminiscence styles. The hypotheses of this study were as follows: (1) avoidant attachment style is related to happiness through reminiscence styles, (2) secure attachment style is related to happiness through reminiscence styles, (3) ambivalent attachment style is related to happiness through reminiscence styles, (4) participants' gender and age moderate the relationship between attachment styles and reminiscence styles, and (5) participants' gender and age moderate the relationship between reminiscence styles and happiness. Presented in Figure 1 is the hypothesized model for the above-mentioned relationships.

———— Please insert Figure 1 about here ————

## Method

### Study Design and Participants

The method of the present study was correlational of SEM type. The statistical population included all the elderly aged at least 60 years living in Kermanshah province, Iran in 2021, among whom 380 (182 men and 198 women) were selected as the study sample using convenience sampling method. Regarding the sample size, it is worth noting that Stevens (1996, as cited in Hooman, 2012) stated that considering 15 items for each predictor variable in the multiple regression analysis with the ordinary least squares, of the minimum squared standard is a good rule of thumb. Based on this, it can be stated that because SEM in some respects is completely related to multivariate regression, 15 cases for each variable measured in SEM are not irrational (55). Loehlin (1992, as cited in Hooman, 2012) states that for models with two or four factors, the researcher must plan to collect at least 100 or more, say 200. Therefore, the sample size of this study seems sufficient to perform a path analysis. Inclusion criteria were (1) age over 60 years, (2) willingness to participate in the study, (3) lack of experience of grief of losing loved ones in the last six months, and (4) absence of illness or severe mental disorders based on

medical records. The mean age of participants in the current study, ranging from 60 to 95 years, was 67.6 (SD=7.19) and the mean age of men and women were 68.73 (SD=7.73) and 66.61 (SD=6.54) years, respectively. In addition, the average of participants' duration of marriage, with a range of one to 47 years, was 10.28 (SD=8.59), and this amount for men and women were 11.08 (SD = 9.03) and 9.5 (SD=7.09), respectively. Out of all participants, 294 (77.37%) were married and the others were single because of the death of their spouse (78 persons, 20.53%), divorce (four persons, 1.05%), and not getting married (four persons, 1.05%). Moreover, 191 (50.3%) had a high school degree and lower, 86 (22.6%) had a diploma degree, 31 (8.2%) had an associate's degree, 48 (12.6%) had a bachelor's degree, 19 (5%) had a master's degree, and five (1.3%) had a doctorate degree. Of the sample members, 368 (96.8%) had children and 12 (3.2%) had no children. Besides, 182 (47.9%) of the sample members were living along with their spouse and children, 112 (29.4%) with their spouse, 50 (13.2%) with their children, and 36 (9.5%) were living alone.

## Measures

### Attachment Styles Questionnaire (ASQ)

ASQ was developed by Dost Mohammadi (56) based on items of Hazan and Shaver's (57) adult attachment scale (AAS). This questionnaire is comprised of 15 items that measure three attachment styles of secure, avoidant, and ambivalent. Participants answer questions through a five-point Likert scale ranging from one (strongly disagree) to five (strongly agree). There are five items for each attachment style and the minimum and maximum scores for each style are from five to 25. Dost Mohammadi reported the reliability coefficient for ASQ to be 0.81 through the retest method and 0.87 through Cronbach's alpha method. Using Cronbach's alpha method in the current study, we obtained the Cronbach's alpha of 0.67, 0.65, and 0.61 for avoidant, secure, and ambivalent components, respectively.

### Oxford Happiness Questionnaire (OHQ)

OHQ, developed by Argyle et al. (58), has 29 items, each of which has four options ranging from zero to three. The sum of the scores of the 29 items determine the total score of the scale. People get a score between zero to 87, with higher scores indicating higher happiness. The questionnaire includes five components of life satisfaction, self-esteem, subjective well-being, self-satisfaction, and positive mood. Using Cronbach's alpha method, Argyle et al. reported the validity of this questionnaire to be 0.9. They also confirmed the divergent validity of OHQ with Beck and Clark (59) depression inventory and reported its reliability through Cronbach's alpha method to be 0.90. Alipoor and Noorbala (60) as well figured out that the validity of OHQ on the Iranian sample was 0.93. Cronbach's alpha for the total score of OHQ was 0.94 in the current study.

### Elderly Reminiscence Questionnaire (ERQ)

ERQ was developed and validated by Amani et al. (61) based on Watt and Wong (41) questionnaire to measure the extent and styles of reminiscence in Iranian elderly. This questionnaire is comprised of 30 items that measure the five subscales of narrative-transmissive, obsessive, integrative, death preparation,

and escapist reminiscence. The sum of the scores of narrative-transmission and integrative subscales provides the positive reminiscence (PR) score and relatedly, the sum of the scores of obsessive, death preparation, and escapist subscales provides the negative reminiscence (NR) score. Using Cronbach's alpha method, Amani et al. figured out that the internal reliability of ERQ is 0.904 for all subscales and are 0.904, 0.826, 0.795, 0.812, and 0.774 for narrative-transmissive, obsessive, integrative, death preparation, and escapist subscales, respectively. In the current study, the internal reliability of ERQ through Cronbach's alpha method was 0.904 for all items, and were 0.808, 0.881, 0.858, 0.799 and 0.844 for narrative-transmissive, obsessive, integrative, death preparation, and escapist subscales, respectively.

## Procedure

Having obtained the necessary permissions to conduct the research from the ethics committee, we conducted the preliminary stage of the research. During this stage, we designed the aforementioned questionnaires in the form of online ones. Then, using a systematic and controlled method, we asked those psychology students of University who were living in Kermanshah city and other cities of Kermanshah province to provide the web link of the online questionnaires for the elderly in their city who were eligible with respect to the inclusion criteria of the study. It is worth pointing out that we sent an email to the students containing elaborative explanation concerning research objectives, inclusion criteria, and the way to implement questionnaires to guide them on how to conduct data gathering stage. Due to the concurrence of the current study and the peak stage of COVID-19 pandemic in Iran, and severe vulnerability of the elderly to this pandemic, we asked students not to visit the elderly in person to avoid the risk of transmitting COVID-19 virus to them. Therefore, the students informed the elderly around them by phone, and the web link of the questionnaires was provided to the elderly through an email or other social networks. Before the individuals reached the stage of filling out the questionnaires, the students presented the research objectives to them, provided them with necessary explanations regarding the lack of identity information on questionnaires, the participants' privacy and confidentiality of their personal information, and finally obtained their informed consent for participating in the study. Participants were also asked to answer preliminary questions concerning inclusion criteria, and those who met the inclusion criteria were allowed access to the main questionnaires. One of the advantages of conducting this study online was that the questionnaires were designed in such a way that they would not be sent until they were fully answered. Therefore, there was no missing data. Finally, reviewing 400 questionnaires completed by the participants, we discarded 20 distorted questionnaires (for reasons such as age outside the scope of this study, and suffering from debilitating mental and physical illnesses) and analyzed 380 questionnaires as the final sample of the research. The data obtained from the questionnaires were analyzed using Pearson correlation coefficient, hierarchical linear regression, and SEM in SPSS-21 and LISREL-9.1 software.

## Results

Prior to the analysis, the assumptions of SEM including normal distribution, error independence, and multiple alignment were examined. To examine the normal distribution of the research variables, the

skewness and kurtosis of the distribution of scores were used, the results of which showed that the distribution of scores of all variables is normal (range of distribution between +2 and -2). The Dorbin-Watson test was used to check the independence of the errors, the results of which showed no correlation between the errors (D.W=1.84, range between 1.5 and 2.5 is acceptable). Inflation variance (VIF) and tolerance factors were used to evaluate the multiple alignment between the predictor variables. The results showed that there is no alignment between the variables (VIF amplitude was less than 10 and tolerance was higher than 0.1). Another assumption is the establishment of a linear relationship between independent and dependent variables, which was examined by Pearson correlation, the results of which are reported along with the mean and standard deviation of the study variables in Table 1.

Table 1  
The mean, standard deviation, and correlation of the variables

variable	M	SD	1	2	3	4	5
Avoidant attachment style	9.31	2.48	-				
Secure attachment style	13.97	2.50	-.35**	-			
Ambivalent attachment style	10.66	2.93	.29**	-.17**	-		
PR	52.79	8.25	-.26**	.48**	-.24**	-	
NR	44.32	9.06	.35**	-.32**	.46**	-.05	-
Happiness	67.62	15.12	-.38**	.39**	-.32**	.47**	-.43**
*P< 0.05, **P< 0.01							

———— Please insert Table 1 about here ————

As can be seen in Table 1, PR is correlated significantly with avoidance attachment style ( $r=-0.26, p<0.01$ ), secure attachment style ( $r=0.48, p<0.01$ ) and ambivalent attachment style ( $r=0.24, p<0.01$ ). In addition, NR is correlated significantly with avoidance attachment style ( $r=0.35, p<0.01$ ), secure attachment style ( $r=-0.32, p<0.01$ ) and ambivalent attachment style ( $r=0.46, p<0.01$ ). Moreover, happiness is associated significantly with PR ( $r=0.47, p<0.01$ ) and NR ( $r=-0.43, p<0.01$ ). There is also a significant relationship between happiness with avoidance attachment style ( $r=-0.38, p<0.01$ ), secure attachment style ( $r=0.39, p<0.01$ ) and ambivalent attachment style ( $r=-0.32, p<0.01$ ). Utilized to test the research hypotheses was model fit. Accordingly, the structural equation model was used in order to evaluate the hypothesized model of the study. Shown in the Figure 2 is the final structural model for the relationship between attachment styles and happiness through the mediating role of reminiscence styles.

———— Please insert Figure 2 about here ————

First, considered to determine the overall fit of the model was the fit index. The model fit indices are presented in Table 2. For the  $X^2/df$  fit index, values smaller than 3 are appropriate, and the closer it is to

zero, the better the model will fit. For GFI, IFI, CFI and NFI indices, a value close to 0.90 and above is considered as an acceptable goodness of fit, which indicates that the model is good. In relation to the RMSEA index, values close to 0.05 or less indicate a good fit of the model and a value of 0.08 or less indicates a reasonable error of approximation. A value higher than 0.10 indicates the need to reject the model (55). The fit indices presented in Table 2 indicate the good fit of the model.

Table 2  
Fit indices for the developed model

Model fit indices	$\chi^2$	df	$\chi^2/df$	GFI	IFI	NFI	CFI	RMSEA
Obtained values	424.68	154	2.75	.9	.95	.92	.95	.068

———— Please insert Table 2 about here ————

Then, all the effects related to different paths in the SEM were considered, the results of which are presented in Table 3.

Table 3  
Coefficients of the model of the relationship between MS an attachmentstyles through SE and NM

Direct path	Regression coefficient	t
Avoidant → PR	.08	1.19
Avoidant → NR	.25	3.41**
Avoidant → Happiness	-.05	-.86
Secure → PR	.55	8.09**
Secure → NR	-.20	-2.89**
Secure → Happiness	-.06	-.89
Ambivalent → PR	-.20	-3.24**
Ambivalent → NR	.43	6.1**
Ambivalent → Happiness	.03	.46
PR → Happiness	.54	7.49**
NR → Happiness	-.47	-5.5**
**P< 0.01		
<i>Note.</i> NR= Negative reminiscence, PR=Positive reminiscence		

———— Please insert Table 3 about here ————

Analysis of data obtained from standard coefficients in the SEM presented in Table 3 shows that the direct effect of avoidance attachment style on NR ( $\beta = 0.25, p < 0.01$ ) was positive and significant. However, the effect of avoidance attachment style on PR ( $\beta = 0.08, p > 0.05$ ) and happiness ( $\beta = 0.08, p > 0.05$ ) was not significant. Although secure attachment style had a positive and negative significant direct effect on PR ( $\beta = 0.55, p < 0.01$ ) and NR ( $\beta = -0.20, p < 0.01$ ), respectively, it did not have any significant direct effect on happiness ( $\beta = 0.06, p > 0.05$ ). Moreover, ambivalent reminiscence style had a positive and negative significant direct effect on PR ( $\beta = -0.20, p < 0.01$ ) and NR ( $\beta = 0.43, p < 0.01$ ), respectively. However, the direct effect of ambivalent attachment style on happiness was not significant ( $\beta = 0.03, p > 0.05$ ). PR showed a direct significant positive effect on happiness ( $\beta = 0.54, p < 0.01$ ), and NR showed a direct significant negative effect on happiness ( $\beta = -0.47, p < 0.01$ ). The Sobel's test was also used to investigate the mediating role of reminiscence styles in the relationship between attachment styles and happiness, the results of which are reported in Table 4.

Table 4  
results of Sobel's test for investigating the mediating role of PR and NR in the relationship between attachment styles and happiness

variables	Indirect coefficient	Sobel's test (z)	P
Avoidant → PR → Happiness	.04	-1.87	.06
Avoidant → NR → Happiness	-.12	-6.01	.001
Secure → PR → Happiness	.29	7.85	.001
Secure → NR → Happiness	.09	5.66	.001
Ambivalent → PR → Happiness	-.10	-4.38	.001
Ambivalent → NR → Happiness	-.20	-7.22	.001
<i>Note.</i> NR= Negative reminiscence, PR=Positive reminiscence			

———— Please insert Table 4 about here ————

Presented in Table 4, the results of Sobel's test indicated that PR does not serve a significant mediating role in the relationship between avoidance reminiscence style and happiness ( $Z = -1.87, p > 0.05$ ). NR, however, played a significant mediating role in the relationship between avoidance reminiscence style and happiness ( $Z = 6.01, p < 0.01$ ). In addition, both PR ( $Z = 7.85, p < 0.01$ ) and NR ( $Z = 5.66, p < 0.01$ ) had a significant mediating effect in the relationship between secure attachment style and happiness. Finally, both PR ( $Z = -4.38, p < 0.01$ ) and NR ( $Z = 7.22, p < 0.01$ ) indicated a significant mediator role in the relationship between ambivalent attachment style and happiness.

In order to test the fourth hypothesis of the study, considered in the first step was the role of individuals' gender in the extent of reminiscence. Results showed that the mean score of integrative ( $t_{(378)} = -3.472, p = 0.001$ ), narrative-transmissive ( $t_{(378)} = -3.470, p = 0.001$ ) and positive ( $t_{(378)} = -3.826, p < .001$ ) reminiscences are higher in men than in women. Instead, women had higher mean score of obsessive

remembrance ( $t_{(378)} = 4.332, p < 0.001$ ) than men. There was no significant gender difference in the other styles of remembrance. In addition, Pearson correlation coefficient was applied to examine the relationship between age (ranged from 60 to 95 years) and remembrance styles. Results demonstrated that participants' age is positively correlated with narrative-transmissive ( $r_{(378)} = 0.213, p < 0.001$ ), obsessive ( $r_{(378)} = 0.138, p = 0.007$ ), escapist ( $r_{(378)} = 0.162, p = 0.002$ ), death preparation ( $r_{(378)} = 0.215, p < 0.001$ ), positive ( $r_{(378)} = 0.143, p = 0.005$ ), and negative ( $r_{(378)} = 0.222, p < 0.001$ ) remembrance styles. The same relationship, however, did not hold for integrative remembrance ( $r_{(378)} = 0.022, p = 0.672$ ). In the second step, the moderating effect of age and gender on the relationship between PR and NR with happiness was examined using hierarchical regression. As such, first, the effect of age and gender were entered into the model, and then, the remembrance styles, and finally, the interactive effect of gender and age with remembrance styles were entered into the model. Presented in Table 5, results indicated that the effect of gender, age and both styles of remembrance are significant in predicting happiness, but none of the interactive effects is significant predictor of happiness. In other words, the age and gender of the participants did not have a significant effect on the relationship between remembrance and happiness. A similar model was performed to investigate the moderating effect of age and gender on the relationship between attachment styles and remembrance styles. Shown in the Table 5, results displayed no significant effect. In other words, the age and gender of the participants did not have a significant effect on the relationship between attachment styles and remembrance styles.

Table 5  
Summary of hierarchical regression analysis for positive and NR and their interactions with gender and gender in predicting happiness in the elderly

predictors	R <sup>2</sup>	B	SEM	Beta	t
PR					
Model 1: Age	.033	-.312	.104	-.152	-2.993**
Gender		4.259	1.499	.145	2.842**
Model 2: Age	.167	.676	.086	.378	-4.160***
Gender		-.405	.097	-.198	1.614
PR		2.281	1.414	.077	7.846***
Model 3: Age	.174	-1.543	.661	-.754	-2.336*
Gender		-7.191	9.532	-.244	-.754
PR		-.787	.801	-.440	-.983
Gender × PR	.021	.012	.012	1.020	1.724
Age × PR	.176	.178	.178	.332	.991
NR					
Model 1: Age	.033	-.312	.104	-.152	-2.993**
Gender		4.259	1.499	.145	2.842**
Model 2: Age	.069	-.214	.105	-.105	-2.033*
Gender		3.554	1.481	.121	2.399*
NR		-.341	.086	-.202	-3.944***
Model 3: Age	.068	.303	.570	.148	.531
Gender		-3.538	7.777	-.120	-.455
NR		.332	.799	.196	.415
Gender × NR		-.011	.012	-.931	-.931
Age × NR		.158	.170	.930	.930
*P<.05, **P<.01, ***P<.001					
<i>Note.</i> NR= Negative reminiscence, PR=Positive reminiscence					

——— Please insert Table 5 about here ———

## Discussion

The current study aims to investigate the relationship between attachment styles and happiness through the mediating role of reminiscence styles in the elderly. The results of SEM revealed that the hypothesized model of this study has a good fit in the study sample. As such, secure and ambivalent attachment styles were significantly associated with happiness through both PR and NR, and avoidant attachment style was significantly associated with happiness only through NR. Moreover, participants' age and gender did not have a significant moderating effect on the relationship between attachment styles and reminiscence styles, as well as on the relationship between reminiscence styles and happiness. In conclusion, the first, second and third hypotheses of the study were confirmed and the fourth and fifth ones were not confirmed. In other words, it may be concluded that, secure elderly spend more time reminiscing their memories in the form of narratives, and in this way, they transfer their experiences to other people and next generations, which in turn may increase their happiness. Meantime, the secure elderly are not used to reminiscing old days as positive periods, which are preferred to the present (escapist reminiscence), which in turn makes them feel happier. The ambivalent elderly, however, have the exact opposite situation and are less inclined to reminisce their memories in shape of stories, and to transmit of their experiences to other people and next generations. Instead, they are used to reminiscing old days as positive periods, and to talking about their preparation for death, which in turn makes them experience lower level of happiness. Finally, the avoidant elderly are also more likely to reminisce old days as positive periods and to talk about their preparation for death, which in turn reduces their level of happiness.

The findings of the current study regarding avoidant and secure individuals are in line with that of Webster (24), revealing that avoidant and secure people have lower extent of NR compared to preoccupied and fearful ones. The current study also found that the degree of correlation between secure and avoidance attachment styles with NR (death preparation and escapist) are lower than degree of correlation between ambivalent attachment style and NR (death preparation and escapist). In addition, as with Webster's, the findings of the current study indicated that secure attachment style has a significant positive relationship with PR (narrative-transmissive). The mentioned relationship was negative for ambivalent attachment style, and was not significant for avoidant attachment style. The findings of the present study are somewhat consistent with that of Dunlop (62), which showed that avoidant attachment style has a significant negative relationship with the storytelling enjoyment and narrative mindset in adults. Likewise, the finding of this study regarding the moderating effect of gender on the relationship between reminiscence and happiness was consistent with that of Webster (24) and inconsistent with that of Webster and McCall (54). The finding of this study regarding the moderating effect of age on the relationship between reminiscence and happiness was inconsistent with that of Webster and McCall.

## Attachment Styles and Reminiscence

The central role of narrative reminiscence and the content of some kind of memories, such as episodic and autobiographical ones in the attachment theory, has itself drawn from the time period in which Bowlby (63) shifted his focus from the infancy and the sensory-motor representations of attachment to the mental representations of attachment, known as internal working models (IWMs). Accordingly, Bowlby stated that both secure base behaviors and IWMs emerge from the daily child-parent interactions, and although these two characters are potentially stable, they have the potential to change in the shadow of new experiences (64). According to attachment theory, individuals acquire important narrative skills in the context of parent-child interactions. Based on this point of view, once children are able to talk, they start talking about different topics and emotions with their parents (caregivers). Thus, the narratives of caregivers (often parents) with their children about attachment-related experiences and related emotions play a very important role in children's adjustment in the course of their lives. Bowlby believed that the interaction of caregivers and children forms IWMs of these children, which in turn determine the basic features of children's attachment-related narratives. IWMs also determine the ease and openness in presenting narratives and interpersonal communication, and the degree of coherence of these narratives.

IWMs formed in childhood are relatively stable structures that persist in adolescence and adulthood and shape individuals' behaviors. The basic aspects of IWMs embed in individuals' various types of memories (e.g., procedural, sensory, semantic, episodic, connotative, and working). Among mentioned types of memories, episodic and autobiographical ones play an important role in the function of individuals' IWMs (65). These memories, which integrate cognitions and emotions by gathering information from different parts of the brain, play a significant role in people's ability to tell stories or to reminisce. In other words, the formation of narrative and memory skills requires the integration of semantic, episodic, sensory and procedural memories in the process of development of children's IWMs through interaction with their parents (65). Therefore, children who experience two important characteristics of reflective functioning (the ability to examine and think about the inner state of the other person) and metacognition (thinking about thoughts) (66), which is related to meta-interaction (communication about communication in order to clarify misunderstandings and confusions) (67), during the interaction with their parents, have a high ability to integrate the above mentioned memories, which in turn leads to the development of higher narrative skills and, as a result, more coherent narratives and stories.

In general, IWMs of avoidant, ambivalent, and secure individuals are closely related to their narratives, memories, and stories. In a way that, on the one hand, avoidant people usually have narratives that are based on shutting down episodic memory and removing emotions, leading to dry and formal narratives. Some of the other essential features of avoidant people's narratives are the minimization of negative experiences, and the strong denial of negative emotions. Ambivalent people, on the other hand, often have confusing narratives that are difficult to follow. They give a lot of information about their emotions. Coming from different types of memory such as semantic and episodic ones, this information is often contradictory and does not have an accurate timing. Other characteristics of ambivalent narratives include the presence of irrelevant details during the discussion, passive semantic thoughts that usually do not lead to a specific conclusion or point, and the stream of consciousness during speech, without a

focused and clear direction. At last, secure people have a fine coherence between their memory systems and have a well capability to remember positive and negative events, to react to them, and to integrate them. Some of the other characteristics of the narrations of secure people are limited speech dysfluency, not to the extent of distorting information, simultaneous recognition of contradictions and new thoughts, lack of emotional disturbance at the time of narration, clarity of time and place in narrations, even during disruptive narration (65).

## **Reminiscence Styles and Happiness**

Bryant et al. (53) believe that there are several factors that contribute to happiness in the elderly who engage in PR. They believe that creating insights into the self and the present time, as well as mental imagery of the old times are two factors that create positive emotions and happiness during reminiscence. They explicitly state that the adaptive value of reminiscence is not in escaping the problems of the present time and taking refuge in the past times, but rather reminiscing is a constructive way for creating a sense of insight into the present time. The elderly at this age are looking to reintegrate different components of their lives to do their final developmental task. In fact, reminiscence helps them put these components together again and gain some kind of insight into themselves and their age. Therefore, they may experience positive emotions through reminiscing about past times, and as a result, feel happier. Moreover, the mental imagery of past positive events in the elderly may remind them of the same positive emotions. Bryant et al. believe that in mental imagery, what creates positive emotions in a person is the imagination about memories, and the mental imagery increases this imagination about past memories. During mental imagery, the details of some particular memories, which can sometimes be negative, are not remembered, in turn may lead the elderly to feel happier.

## **Attachment Styles, Reminiscence Styles and Happiness**

Based on the previous two sections, it can be concluded that secure people, on the one hand, had caregivers who interacted a lot with their children and promoted their children's narration and reminiscence. Having both a better memory capability and a greater ability to reminisce their memories, along with greater openness and comfort in interpersonal communication, secure people are more likely to tend to express memories in the form of coherent and attractive narratives with an accurate structure (narrative reminiscence). On the other hand, being nurtured by parents who provide a safe haven for them and a secure base for their exploration of the world around them, secure people have IWMs formed based on the security of the world around them. Therefore, they explore the world around them more confidently, which in turn provide them with the opportunity in old age to transmit their experiences in the form of reminiscence about their memories (transmissive reminiscence) to other people and the next generations. Thus, high extent of PR in secure people cause them to experience more positive emotions and feel happier. In addition, because of their high ability to integrate their cognition and emotions, they are less likely to engage in maladaptive strategies such as NR to escape current negative emotions and move toward death.

People with avoidant attachment style, however, tend to shut down episodic and autobiographical memories due to their IWMs formed based on the low level of interaction and dry and soulless atmosphere between them and their caregivers. Due to lack of interpersonal skills and unwillingness to establish a relationship, avoidant people have neither much ability to reminisce in form of narratives and stories, nor much interaction to reminisce their memories in the context of those interactions. Further, it seems that their desire to minimize negative experiences and deny negative emotions leads them to apply escapist and death preparation reminiscences, which in turn can cause them to experience negative emotions and lower level of happiness.

Finally, ambivalent individuals whose caregivers provided them with an environment full of contradictions and contradictory messages may not be able to form suitable narratives and reminiscences. They also are not capable to present coherent and integrated reminiscences with a clear message, and their messages during the reminiscence are sometimes contradictory, without accurate timing. This can lead to their reluctance to express narrative-transmissive reminiscence and, as a result, reduces their sense of happiness.

## **The Implication of the Current Study**

Understanding the basics of attachment styles in the formation of the reminiscence styles, and reviewing this process from childhood to adulthood and old age, along with explaining how it relates to happiness, provide therapists working in the field of the elderly with an in-depth look at this issue. Emphasizing the interaction of parents with their children in the formation of IWMs and its survival into old age and its role in the reminiscence styles of individuals, this article provides some of the necessary elements for building reminiscence therapy protocols for working with the elderly. Of the therapies having been developed based on attachment-related perspective on reminiscence, one seems to be Attachment-Focused Integrative Reminiscence (68). The findings of the current study are likely to be useful for therapists who apply this treatment method. Sabir et al. have modified the Hyatt and Hyatt's (69) integrative reminiscence protocol to address the lifelong attachment needs of individuals during their reminiscence about different periods of their lives. The logic behind this treatment is that the mere reminiscence of memories does not result in integration, but rather it is the expression of unresolved attachment-related experiences that determines the effectiveness of treatment and the degree of coherence created by the treatment. Hence, to achieve coherence through attachment repair, people are encouraged by this treatment method to reminisce attachment-related narratives. In other words, this treatment seeks to integrate those undesirable life experiences that have developed within attachment relationships.

Findings of the present study may contain important implications for researchers and therapists who work in the field of AFIR. Having scientific evidence about the styles of reminiscences that people with different attachment styles may engage in, therapists can predict the path these individuals will take during the reminiscence of their memories. For example, based on the evidence from this study and similar studies, therapists realize that one of the (non-causal) reasons behind experiencing negative emotions and unhappiness in avoidant and ambivalent individuals is their inability to engage in PR such as narrative/transmissive and integrative ones, and their strong tendency for NR such as escapist, death

preparation, and even obsessive ones. Moreover, the current study represented reasoned explanations regarding the path through which people's reminiscence styles are formed based on their attachment styles and the narratives between them and their parents that can help therapists in determining the variables crucial on the path of growth.

## **The Limitations of the Study**

One of the limitations of this study is data collection through self-assessment questionnaires. Although these questionnaires provide useful information, they can sometimes reduce the validity of the results themselves. Meanwhile, although SEM is used in this study, still the nature of the obtained relationships is of the relational type and not causal, and due to the statistical method used and the cross-sectional nature of this study, causal perceptions are not suitable for this type of study. In addition, this study has been used a sample of Iranians, and due to the deep cultural differences in Eastern and Western societies, extreme caution should be exercised in extending these findings to other societies. It should be noted, however, that theories of an ecological nature, such as the attachment theory, are relevant to the human species, and that cultural divisions are less influential than in other areas.

## **Suggestions for Further Studies**

Due to the limitations mentioned in the present study, it is suggested that future studies use highly precisionist tools and control disturbing variables to examine the relationship expressed in this study. These studies can use adult attachment interviews to determine individuals' attachment style, and coding people's reminiscence to examine their reminiscence styles, and use longitudinal designs to provide a causal relationship between these psychological structures. Besides, re-conducting this type of study in different cultural contexts helps to form more accurate and universal findings in this field.

## **Declarations**

### **Ethics approval and consent to participate**

The necessary permissions to conduct the research were obtained from the ethics committee of Kermanshah University of Medical Sciences. the ethic code allocated to this study is IR.KUMS.REC.1400.500. it needs to be mentioned that all methods were carried out in accordance with relevant guidelines and regulations. Moreover, before the individuals reached the stage of filling out the questionnaires, we presented the research objectives to them, provided them with necessary explanations regarding the lack of identity information on questionnaires, the participants' privacy and confidentiality of their personal information, and finally obtained their informed consent for participating in the study.

### **Consent for publication**

Not applicable

### **Availability of data and materials**

The datasets generated and/or analysed during the current study are not publicly available due to some legal limitations imposed by ethics committee of Kermanshah University of Medical Sciences, Iran, but are available from the corresponding author on reasonable request.

### **Competing interests**

The authors declare that they have no competing interests.

### **Funding**

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

### **Authors' contributions**

KM: Conception, the acquisition, design of the work; RA: Conception, the acquisition, design of the work; PJ: Design of the work, interpretation of data; MM: Design of the work, analysis, interpretation of data, draft the work and revise it; SF: Design of the work, draft the work and revise it; PN: Analysis, interpretation of data. All Authors read and approved the final manuscript.

### **Acknowledgements**

We hereby thank all the competent authorities of Kermanshah University of Medical Sciences who helped us conduct this research, and all the elderly who participated in the current study.

## **References**

1. Fakari FR, Hashemi MA, Fakari FR. A Qualitative research: Postmenopausal women's experiences of abuse. *Procedia-Social Behav Sci.* 2013;82:57–60.
2. Paltasingh T, Tyagi R. Demographic transition and population ageing: Building an inclusive culture. *Soc Change.* 2012 Sep;42(3):391–409.
3. Elias SMS, Neville C, Scott T. The Effectiveness of group reminiscence therapy for loneliness, anxiety and depression in older adults in long-term care: A Systematic review. *Geriatr Nurs (Minneap).* 2015;36(5):372–80.
4. World Health Organization. Global Health and Aging [Internet]. National Institute on Aging National Institutes of Health; 2011. Available from: [https://www.who.int/ageing/publications/global\\_health.pdf](https://www.who.int/ageing/publications/global_health.pdf)
5. Yazdanbakhsh K. Effects of life review on social adjustment of retirees' elderly persons. *Aging Psychol [Internet].* 2016;1(3):179–85. Available from: [https://jap.razi.ac.ir/article\\_330.html?lang=en](https://jap.razi.ac.ir/article_330.html?lang=en)
6. Myers DG, Diener E. Who Is Happy? *Psychol Sci [Internet].* 1995 Jan;6(1):10–9. Available from: <http://journals.sagepub.com/doi/10.1111/j.1467-9280.1995.tb00298.x>

7. Almasi M, Mahmoudiani S, Jafari M. Factors associated with feelings of happiness among the elderly. *Iran J Nurs*. 2015;27(92):23–32.
8. Singh K, Jha SD. Positive and negative affect, and grit as predictors of happiness and life satisfaction. *J Indian Acad Appl Psychol [Internet]*. 2008;34(2):40–5. Available from: <https://psycnet.apa.org/record/2008-10784-005>
9. Won D, Bae J, Byun H, Seo K. Enhancing subjective well-being through physical activity for the elderly in Korea: A Meta-Analysis approach. *Int J Environ Res Public Health [Internet]*. 2019 Dec;17(1):262. Available from: <https://www.mdpi.com/1660-4601/17/1/262>
10. Nemati S, Maralani FM. The Relationship between life satisfaction and happiness: The Mediating role of resiliency. *Int J Psychol Stud*. 2016;8(3):194–201.
11. Lara R, Vázquez ML, Ogallar A, Godoy-Izquierdo D. Psychosocial resources for hedonic balance, life satisfaction and happiness in the elderly: A Path analysis. *Int J Environ Res Public Health*. 2020 Aug;17(16):Article 5684.
12. Moeini B, Rezapur-Shahkolai F, Tapak L, Geravandi A, Parsamajd S. Relationship between happiness and mental health with social capital among health workers. *J Educ Community Heal*. 2020 May 1;7(2):119–25.
13. Luchesi BM, de Oliveira NA, de Morais D, de Paula Pessoa RM, Pavarini SCI, Chagas MHN. Factors associated with happiness in the elderly persons living in the community. *Arch Gerontol Geriatr*. 2018;74:83–7.
14. Lalehkani M, Davati A, Isanejad A, Jadid-Milani M. The Correlation between happiness and self-transcendence in the elderly of Khoshkrud, Zarandieh city. *Iran J Nurs*. 2020;33(123):6–22.
15. Narimani M, Samadifard H. Social health in the elderly: The Role of self-esteem, self-efficiency and happiness. *Aging Psychol [Internet]*. 2017;3(3):199–206. Available from: [https://jap.razi.ac.ir/article\\_813.html?lang=en](https://jap.razi.ac.ir/article_813.html?lang=en)
16. Mass M, Buckwalter KC, Hardy MD, Tripp-Reimer T, Titler MG, Specht JP. *Nursing care of older adults-diagnosis, outcomes& interventions*. St. Louis, MO: Mosby; 2001.
17. Lobos G, Grunert KG, Bustamante M, Schnettler B. With health and good food, great life! Gender differences and happiness in Chilean rural older adults. *Soc Indic Res [Internet]*. 2016 Jun;127(2):865–85. Available from: <http://link.springer.com/10.1007/s11205-015-0971-0>
18. Amani R. Happiness in the elderly: The Role of self-esteem. *Aging Psychol [Internet]*. 2016;2(1):73–80. Available from: [https://jap.razi.ac.ir/article\\_501.html?lang=en](https://jap.razi.ac.ir/article_501.html?lang=en)
19. Chyi H, Mao S. The Determinants of happiness of China's elderly population. *J Happiness Stud*. 2012;13(1):167–85.
20. Oerlemans WGM, Bakker AB, Veenhoven R. Finding the key to happy aging: A Day reconstruction study of happiness. *Journals Gerontol Ser B Psychol Sci Soc Sci [Internet]*. 2011 Nov;66B(6):665–74. Available from: <https://academic.oup.com/psychsocgerontology/article-lookup/doi/10.1093/geronb/gbr040>

21. Aliakbari Dehkordi M, Peymanfar E, Mohtashami T, Borjali A. The Comparison of different levels of religious attitude on sense of meaning, loneliness and happiness in life of elderly persons under cover of social welfare organisation of urmia city. *Iran J Ageing* [Internet]. 2015;9(4):297–305. Available from: <http://salmandj.uswr.ac.ir/article-1-682-en.html>
22. Nanthamongkolchai S, Tuntichaivanit C, Munsawaengsub C, Charupoonphol P. Factors influencing life happiness among elderly female in Rayong Province, Thailand. *J Med Assoc Thai*. 2009;92(Suppl 7):8–12.
23. Ahmadi A, Soleimani MA, Pahlevan Sharif S, Motalebi SA. Association between perceived social support and happiness among community-dwelling elderly adult. *J Qazvin Univ Med Sci*. 2019;23(4):320–31.
24. Webster JD. Attachment styles, reminiscence functions and happiness in young and elderly adults. *J Aging Stud*. 1998;12(3):315–30.
25. Shunqin Y. Review of effects of “attachment” of the elderly on physical and mental health of old chronic patients. *Stud Asian Soc Sci*. 2015 Jul;2(2):15.
26. Bowlby J. *Attachment and Loss, Vol.1: Attachment*. New York, NY: Basic Books; 1969.
27. Bowlby J. The Nature of the child’s tie to his mother. *Int J Psychoanal* [Internet]. 1958 [cited 2021 Aug 9];39:223–73. Available from: <https://psycnet.apa.org/record/1960-02815-001>
28. Hollist CS, Miller RB. Perceptions of attachment style and marital quality in midlife marriage. *Fam Relat* [Internet]. 2005 Jan 7 [cited 2020 Jul 3];54(1):46–57. Available from: <https://digitalcommons.unl.edu/famconfacpub/43>
29. Shaver P, Hazan C. Being lonely, falling in love: Perspectives from attachment theory. *J Soc Behav Pers* [Internet]. 1987;2(2):105–124. Available from: <https://psycnet.apa.org/record/1988-26476-001>
30. Sable P. What is Adult Attachment? *Clin Soc Work J* 2007 361 [Internet]. 2007 Aug 24 [cited 2021 Aug 10];36(1):21–30. Available from: <https://link.springer.com/article/10.1007/s10615-007-0110-8>
31. Mickelson KD, Kessler RC, Shaver PR. Adult attachment in a nationally representative sample. *J Pers Soc Psychol*. 1997;73(5):1092–106.
32. Bayrami M, Heshmati R, Mohammadpour V, Gholamzadeh M, Hasanloo HO, Moslemifar M. Happiness and willingness to communicate in three attachment styles: A Study on college students. *Procedia - Soc Behav Sci* [Internet]. 2012;46(2012):294–8. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1877042812012384>
33. Amani R, Majzoobi MR. The predict of identity styles through attachment styles. *Sci J Clin Psychol Personal* [Internet]. 2011;2(5):13–24. Available from: [http://cpap.shahed.ac.ir/article\\_2651.html?lang=en](http://cpap.shahed.ac.ir/article_2651.html?lang=en)
34. Amani R, Majzoobi MR, Azadi Fard S. Mother-Infant Attachment Style as a Predictor of Depression among Female Students. *J Midwifery Reprod Heal*. 2017;5(1):834–41.
35. Amani R. Mother-infant attachment styles as a predictor of aggression. *J Midwifery Reprod Heal*. 2016 Jan 1;4(1):506–12.

36. Momeni F, Malekpour M, Molavi H, Amiri S. Comparison of secure, avoidance/anxiety insecure and anxiety insecure attachment styles between young adults with visual or auditory defects and normal people in Isfahan city. *J Behav Sci* [Internet]. 2011;8(2):103–13. Available from: <http://rbs.mui.ac.ir/article-1-173-en.html>
37. Bowlby J. *Attachment and loss: vol. 2, Separation*. New York: Basic books; 1973.
38. Kamari S, Shekhaleslami R. The Mediating role of optimism on the relationship of individual attachment style with the amount of happiness and their life expectancy. *Appl Res Educ Psychol* [Internet]. 2016;2(4):50–67. Available from: [https://aep.journals.pnu.ac.ir/article\\_2282.html?lang=en](https://aep.journals.pnu.ac.ir/article_2282.html?lang=en)
39. Zhang X, Chen X, Ran G, Ma Y. Adult children's support and self-esteem as mediators in the relationship between attachment and subjective well-being in older adults. *Pers Individ Dif* [Internet]. 2016 Jul;97:229–33. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S019188691630215X>
40. Cappeliez P, Lavallée R, O'Rourke N. Functions of reminiscence in later life as viewed by young and old adults. *Can J Aging / La Rev Can du Vieil* [Internet]. 2001 Nov;20(4):577–89. Available from: [https://www.cambridge.org/core/product/identifier/S0714980800012320/type/journal\\_article](https://www.cambridge.org/core/product/identifier/S0714980800012320/type/journal_article)
41. Watt LM, Wong PTP. A Taxonomy of reminiscence and therapeutic implications. *J Gerontol Soc Work* [Internet]. 1991 Apr;16(1–2):37–57. Available from: [http://www.tandfonline.com/doi/abs/10.1300/J083v16n01\\_04](http://www.tandfonline.com/doi/abs/10.1300/J083v16n01_04)
42. Meléndez Moral JC, Fortuna Terrero FB, Sales Galán A, Mayordomo Rodríguez T. Effect of integrative reminiscence therapy on depression, well-being, integrity, self-esteem, and life satisfaction in older adults. *J Posit Psychol* [Internet]. 2015 May;10(3):240–7. Available from: <http://www.tandfonline.com/doi/abs/10.1080/17439760.2014.936968>
43. Satorres E, Viguer P, Fortuna FB, Meléndez JC. Effectiveness of instrumental reminiscence intervention on improving coping in healthy older adults. *Stress Heal* [Internet]. 2018 Apr;34(2):227–34. Available from: <http://doi.wiley.com/10.1002/smi.2776>
44. Karimi H, Dolatshahee B, Momeni K, Khodabakhshi A, Rezaei M, Kamrani AA. Effectiveness of integrative and instrumental reminiscence therapies on depression symptoms reduction in institutionalized older adults: An Empirical study. *Aging Ment Health*. 2010;14(7):881–7.
45. Watt LM, Cappeliez P. Integrative and instrumental reminiscence therapies for depression in older adults: Intervention strategies and treatment effectiveness. *Aging Ment Health* [Internet]. 2000 May;4(2):166–77. Available from: <http://www.tandfonline.com/doi/abs/10.1080/13607860050008691>
46. Tatchell T, Jordan TR, Waite PJ, Tatchell RH. Transmissive reminiscence therapy with college students and institutionalized senior adults. *J Intergener Relatsh* [Internet]. 2004 Jan;1(4):35–52. Available from: [https://www.tandfonline.com/doi/full/10.1300/J194v01n04\\_04](https://www.tandfonline.com/doi/full/10.1300/J194v01n04_04)
47. Yousefi Z, Sharifi K, Tagharrobi Z, Akbari H. The Effect of narrative reminiscence on happiness of elderly women. *Iran Red Crescent Med J*. 2015;17(11).

48. Bohlmeijer ET, Westerhof GJ, Emmerik-de Jong M. The Effects of integrative reminiscence on meaning in life: Results of a quasi-experimental study. *Aging Ment Heal*. 2008;12(5):639–46.
49. Molinari V, Cully JA, Kendjelic EM, Kunik ME. Reminiscence and its relationship to attachment and personality in geropsychiatric patients. *Int J Aging Hum Dev [Internet]*. 2001 Jul 22 [cited 2021 Jun 16];52(3):173–84. Available from: <https://journals.sagepub.com/doi/abs/10.2190/AHUJ-GFUX-MW2J-AB1X?journalCode=ahdb>
50. Reese E. Maternal coherence in the adult attachment interview is linked to maternal reminiscing and to children's self concept. *Attach Hum Dev*. 2008;10(4):451–64.
51. Majzoobi M, Momeni K, Amani R, Hojjat khah M. The Effectiveness of structured group reminiscence on the enhancement of the elderly's life quality and happiness. *Dev Psychol (Journal Iran Psychol [Internet]*. 2013;9(34):189–202. Available from: [http://jip.azad.ac.ir/article\\_512233.html?lang=en](http://jip.azad.ac.ir/article_512233.html?lang=en)
52. Nori Pourlayavali R, Alikhani M, Hoseynian S, Soheylizadeh S, Mohammadifar M. The Effect of group reminiscence on happiness and life expectancy of elderly. *Aging Psychol [Internet]*. 2016;1(3):147–56. Available from: [https://jap.razi.ac.ir/article\\_329.html?lang=en](https://jap.razi.ac.ir/article_329.html?lang=en)
53. Bryant FB, Smart CM, King SP. Using the past to enhance the present: Boosting happiness through positive reminiscence. *J Happiness Stud*. 2005;6(3):227–60.
54. Webster JD, McCall ME. Reminiscence functions across adulthood: A Replication and extension. *J Adult Dev [Internet]*. 1999 [cited 2021 Jun 23];6(1):73–85. Available from: <https://link.springer.com/article/10.1023/A:1021628525902>
55. Hooman HA. Structural equation modeling with LISREL application. 5th ed. Thran, Iran: SAMT; 2012.
56. Dost Mohammadi Y. Investigating the relationship between attachment styles and the three dimensions of love with marital adjustment among married teachers working in education in Shahriar city in the academic year of 2009-2010. (Master Thesis). Allameh Tabatabai University; 2010.
57. Hazan C, Shaver P. Romantic love conceptualized as an attachment process. *J Pers Soc Psychol*. 1987;52(3):511–24.
58. Argyle M, Martin M, Lu L. Testing for stress and happiness: The Role of social and cognitive factors. In: Spielberger CD, Sarason IG, Brebner JMT, Greenglass E, Laungani P, O'Roark AM, editors. *Stress and emotion: Anxiety, anger, and curiosity*. Taylor & Francis; 1995. p. 173–187.
59. Beck AT, Clark DA. Anxiety and depression: An information processing perspective. *Anxiety Res*. 1988;1(1):23–36.
60. Alipoor A, Noorbala AA. A Preliminary evaluation of the validity and reliability of the oxford happiness questionnaire in students in the universities of Tehran. *Iran J Psychiatry Clin Psychol [Internet]*. 1999;5(1):55–66. Available from: <http://ijpcp.iums.ac.ir/article-1-1777-en.html>
61. Majzoobi M, Amani R, Hadian Hamedani K. The Construction and validation of the elderly reminiscence questionnaire. *Aging (Albany NY)*. 2020;5(4):333–45.
62. Dunlop WL. Love as story, love as storytelling. *Pers Relatsh*. 2019;26(1):114–36.

63. Bowlby J. A Secure base: Parent-Child attachment and healthy human development. Basic Books; 1988.
64. Oppenheim D, Waters HS. Narrative processes and attachment representations: issues of development and assessment. *Monogr Soc Res Child Dev.* 1995;60(2):197–215.
65. Dallos R. Attachment Narrative Therapy. Open University Press; 2006.
66. Main M. Metacognitive knowledge, metacognitive monitoring, and singular (coherent) vs. multiple (incoherent) model of attachment: Findings and directions for future research. In: Parkes CM, Stevenson-Hinde J, Marris P, editors. *Attachment across the life cycle.* Tavistock/Routledge; 1991. p. 127–159.
67. Watzlawick P, Beavin JH, Jackson DD. *Pragmatics of human communication.* New York: W.W. Norton & Company; 1967.
68. Sabir M, Henderson CR, Kang SY, Pillemer K. Attachment-focused integrative reminiscence with older African Americans: A randomized controlled intervention study. *Aging Ment Heal [Internet].* 2016 May 3 [cited 2021 Jun 28];20(5):517–28. Available from: <https://doi.org/10.1080/13607863.2015.1023764>
69. Haight BK, Haight BS. *The Handbook of structured life review [Internet].* 1st ed. Health Professions Press; 2007 [cited 2021 Jun 28]. Available from: <https://www.healthpropress.com/product/the-handbook-of-structured-life-review/>

## Figures

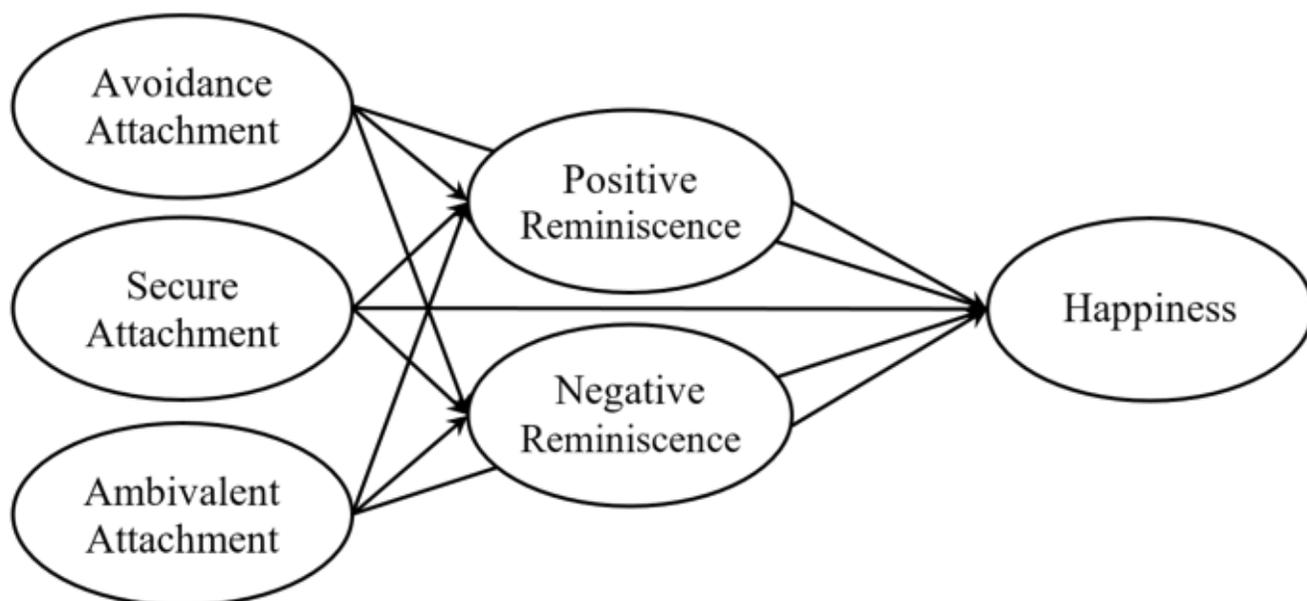


Figure 1

Hypothesized model for the relationship between attachment styles and happiness through mediating role of reminiscence styles

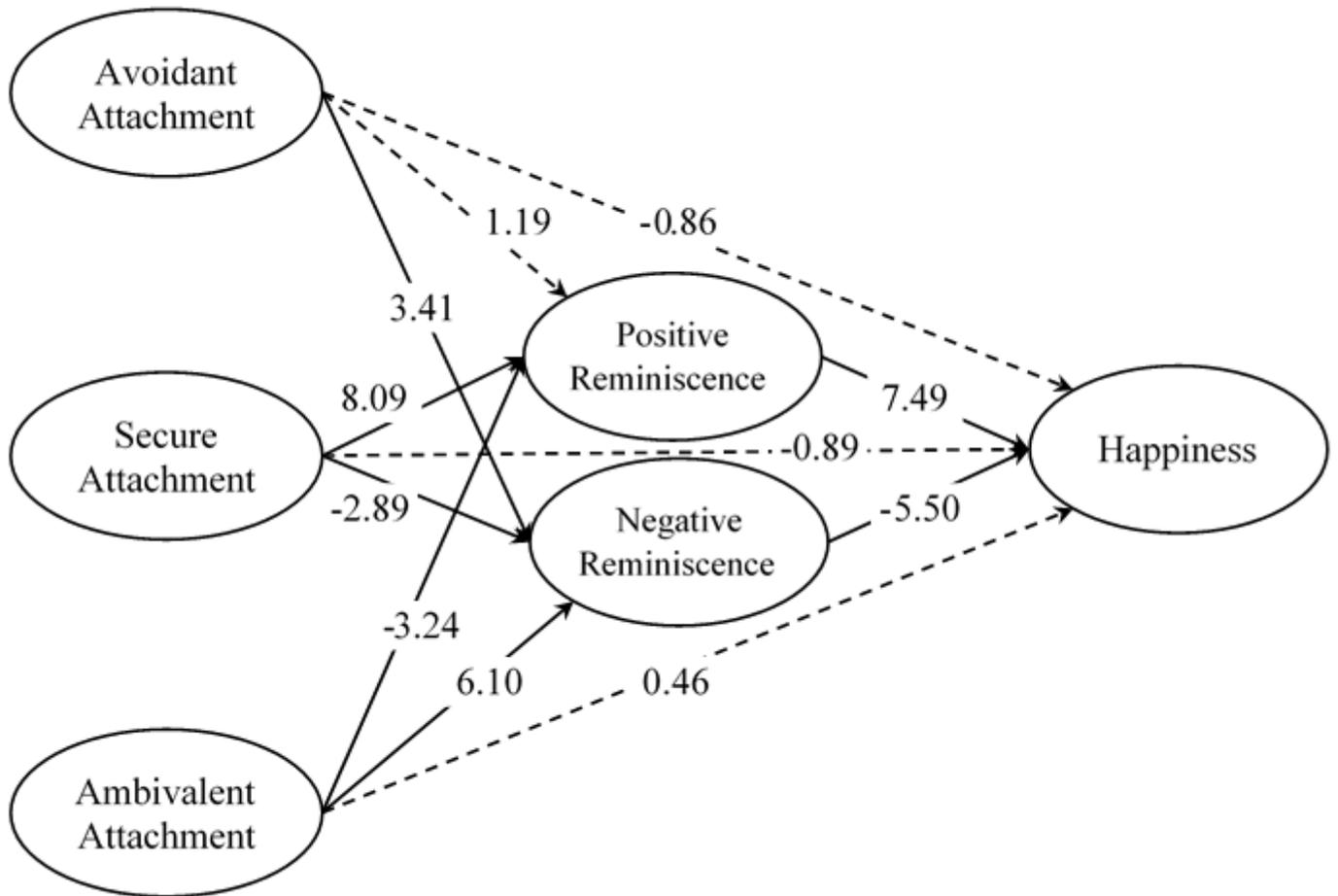


Figure 2

The structural model for the relationship between attachment styles and happiness in the mediating role of reminiscence styles in the elderly