

# Structural Relations of Personal and Collective Self-Esteem to Subjective Well-Being: Attachment as Moderator

Omer Faruk Simsek

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**Abstract** A model indicating that the relationship between collective self-esteem and indicators of subjective well-being, happiness and life satisfaction, was mediated by personal self-esteem was tested by structural equation modeling. The model, including all participants, fitted well to the data. The results suggested that the relationship of collective self-esteem to happiness was fully mediated by personal self-esteem, whereas a partial mediation was the case for life satisfaction. When tested in four groups of attachment styles, however, the results indicated a full mediation for fearful, preoccupied and dismissing groups, but a partial mediation for the secure group. The results are discussed in the “pursuing self-esteem” framework.

**Keywords** Collective self-esteem · Personal self-esteem · Attachment · Happiness · Life-satisfaction · Identity

## 1 Introduction

In recent years, different sources of identity have been emphasized, focusing on shared or collective identities rather than on the individual or unique personal identities predominant in Western theories of self (Crocker et al. 1994; Katz et al. 2002; Reid and Deaux 1996). There is a growing interest in the interplay between these sources of identity and their implications for self-worth and mental health. Two of the prominent theories in this context, social identity theory—SIT (Tajfel 1981; Tajfel and Turner 1979), and terror management theory—TMT (Pyszczynski et al. 1997) posit that personal self-worth is derived from shared cultural and collective practices, defined as social identities in SIT and cultural worldview in TMT. SIT, by definition, assumes that personal self-worth is dependent upon collective sources of esteem. One of the basic assumptions of TMT, in a similar vein, is that personal self-worth is derived from a

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O. F. Simsek (✉)  
Department of Psychology, Izmir University of Economics, Sakarya Cad. No: 156,  
35330 Balçova, Izmir, Turkey  
e-mail: faruk.simsek@ieu.edu.tr

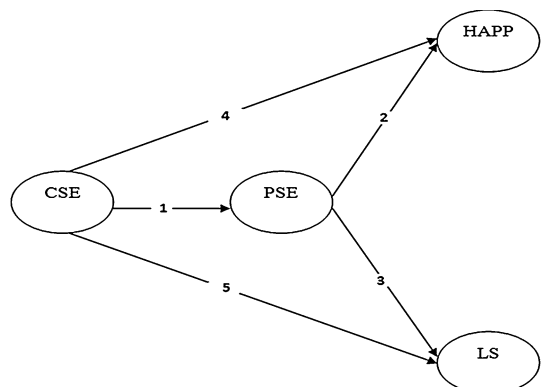
cultural worldview (Pyszczynski et al. 1997; Rosenblatt et al. 1989). Although TMT discusses these two sources of identity with reference to death anxiety, the main argument underlying the theory is that self-esteem is related to people's beliefs about their social identities. Recent developments suggest that group identification could be considered as a general factor underlying the cultural worldview (Arndt et al. 2002). According to Arndt et al. (2002), group identifications play a major role in people's sense of who they are and how they feel about themselves. Accordingly, "to the extent that the groups with which one is affiliated are positively valued, these identifications reflect positively on the self and thus provide a useful buffer against existential fears" (p. 26). Collective self-esteem (CSE), as an important component of the cultural worldview, is, in this respect, considered as a crucial factor for the feeling of self-worth from the TMT perspective (Pyszczynski et al. 1997, 2004). Indeed, research has shown that self-worth derived from collective affiliations is important for personal self-esteem (PSE) (Cameron 1999; Cremer and Oosterwegel 2000; Marmarosh and Corazzini 1997).

It is evident that these conceptualizations have certain implications for mental health, given that self-esteem, whether personal or collective, is associated with mental health and happiness (Bettencourt and Dorr 1997; Crocker et al. 1994; Diener and Diener 1995). A plausible explanation supported by the literature is that people derive their self-worth from their identifications with larger groups or categories, which, in turn, make them happy (Ashmore et al. 2004). Although there is no research directly testing the mediator role of personal self-esteem in the relationship between CSE and subjective well-being (SWB), research gives promising evidence that this might be the case. Cameron (1999), for example, showed that the relationship between aspects of collective identity and depression is partially mediated through self-esteem. Consequently, the first aim of this research is to obtain preliminary support for the hypothesis that the relationship between CSE and the indicators of SWB are mediated by personal self-esteem (Fig. 1).

Figure 1 indicates that individuals' self-esteem is a crucial underlying variable in accounting for the relationship between CSE and SWB. According to TMT, this is because "when personal self-esteem is high and anxiety thereby controlled, people are more able to experience positive affect and feel psychologically well" (Arndt et al. 2002: p. 452). DuBois and Flay (2004) propose a similar account, that self-esteem is derived from an individual's surrounding environment and results in better mental health and well-being.

An examination of the literature, however, indicates that the mediator role of self-esteem could be sensitive to other variables. As Marmarosh (1999) points out, contextual

**Fig. 1** The proposed model: The mediator role of self-esteem in the relationship between collective self-esteem and SWB. *CSE* collective self-esteem, *PSE* personal self-esteem, *HAPP* happiness, *LS* life satisfaction; Paths 1, 2, and 3 indicate the indirect effects of CSE on HAPP and LS whereas 4 and 5 the direct effects of CSE on HAPP and LS

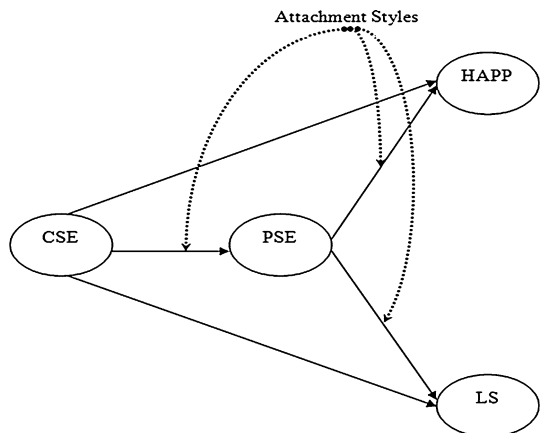


factors concerning the importance of social identity for mental health have been ignored. Crocker and Park (2004) propose, in this respect, that self-esteem should be acknowledged as a dynamic human striving (e.g., pursuing self-esteem) rather than a personality characteristic, resulting in different consequences for different individuals in different contexts. According to the authors, each individual has a different self-valuing system and seeks improving self-esteem in different ways. When considered from such a perspective, the model in Fig. 1 may be understood as a process of pursuing self-esteem. Crocker et al. (1994) indeed state that the pursuit of self-esteem is an important underlying motivation in the context of collective identities. It is plausible, then to expect that the importance of the role of self-esteem, regarded as an underlying motive in the relationship between socially derived self-worth and well-being, may change according to certain personality characteristics.

One possible variable which is crucial, at this point, is the sources that can be located between the collective and the personal, namely, interpersonal identities (Breckler and Greenwald 1986; Greenwald and Breckler 1985). Interpersonal identity refers to those aspects of self which are sensitive to the evaluations of significant others, and which consist of evaluations of the self based on face to face interactions and relationships with those significant others, which is not, however, a requirement for collective identity processes (Brewer and Gardner 1996). As an important dimension of interpersonal identity, and attachment styles may be considered as a crucial background variable moderating the mediator role of PSE in the relationship of CSE with SWB. According to Edwards and Lambert (2007), a moderated-mediation situation is accepted to be the case if the relationship of the mediator variable (self-esteem) with the independent variable (CSE) or with the dependent variable (SWB), or both, differentiate according to the levels of the moderator variable (attachment style) (Fig. 2). Consequently, there follows a presentation of the literature supporting the moderator role of attachment styles in the relationship of self-esteem with both CSE and SWB.

First, although there is no research directly testing the moderator role of attachment styles on the relationship between CSE and PSE, the literature implies that this might be the case. One source of difference between secure and insecure groups is that insecure individuals including dismissives (Carvalho and Gabriel 2006), need others' approval to feel self-worth whereas those who are secure are not dependent on ongoing external

**Fig. 2** The moderated mediation model. *CSE* collective self-esteem, *PSE* personal self-esteem, *HAPP* happiness, *LS* life satisfaction



validation because of their positive model of self which reflects their internalized sense of self-worth (Park et al. 2004). When the approving “others” are collective sources or groups to which individuals affiliate, the difference between secure and insecure individuals is apparent. Although CSE affects individuals’ self-evaluation through in-group versus out-group comparisons, research findings show that secure individuals are less affected by their affiliations to groups with regard to their personal self-esteem. This line of research shows that dispositional and situational attachment security is related to lower levels of defensiveness and aggressiveness towards out-groups, even when the out-group is perceived as a threat to self-esteem (Mikulincer 1998; Mikulincer et al. 1998).

As shown in a previous research, group-affiliation is a compelling need for insecure individuals (Hart et al. 2005). Hart et al. (2005) state that “self-worth can be derived both from interactions with attachment figures throughout life and from living up to the standards defined by a cultural worldview” (p. 1001). Baumeister and Leary (1995) indicate that the need to belong is a universal human need based on interpersonal attachments and crucial for self-worth and happiness. It seems plausible, in this respect, to argue that since secure individuals meet their esteem needs from close relationships or family support (Park et al. 2004), they are less likely to base their personal self-worth on collective sources of esteem. In a similar vein, Mikulincer and Shaver (2001) state that secure individuals tend to get support from significant others who function as exemplars of their positive models of self. In contrast, significant others are less likely to be regarded as sources of esteem for insecure individuals, and it is much more likely to be the case that they rely on collective identities for deriving esteem. Since affiliation to groups functions more symbolically in the self-system rather than in face-to-face relationships with significant others, group affiliations have a much greater potential to act as a compensation for insecure individuals. Given that insecure individuals have more problems with their close relationships (Park et al. 2004) they are more likely to use other sources of identity or affiliation to satisfy their need for belonging and self-worth (Brewer and Gardner 1996). As Baumeister and Leary (1995) suggest, individuals who have no family or intimate relationships can, nonetheless, find contentment through connections with social-political movements. It seems clear from the above literature that insecure individuals base their self-esteem more on collective sources of self-worth than more secure individuals.

Second, self-esteem seems to be more important for the well-being of individuals with insecure attachment styles, a factor which increases the moderating effect of attachment styles on the mediator role of self-esteem in the proposed model. It is a general principle that unfulfilled needs are the most important determinants of behavior. Given that insecure individuals have lower levels of internalized sense of self-worth, or that their self-worth is dependent on conditional rewards from the environment, their sense of esteem would seem to be a strong predictor of their happiness (e.g., SWB). Ryan and Deci (2004) suggest that the more one’s self-worth is contingent on external sources, the more that person is concerned with self-esteem. Further, Crocker and Park (2004) state that once one’s self-worth become conditional in this way, it becomes critical for mental health and general well-being indefinitely.

In conclusion, the above mentioned literature suggests that since secure individuals’ self-worth is not dependent on other’s approval and since they have an internalized sense of self-worth, collective sources of self-worth is less important for them. In turn, because they have an unconditional and stable level of self-worth provided by a secure base, self-esteem would be a less powerful determinant of their SWB. Thus, the second aim of this research is to obtain preliminary evidence to show that the mediator effect of personal

self-esteem on the relationship between CSE and SWB varies according to different attachment styles (Fig. 2).

Although previous research has identified a number of contextual differences concerning the mediator role of self-esteem (e.g., Crocker et al. 1994), these studies are all primarily focused on ethnic identity. This current research argues that the interplay between collectively and privately derived self-worth and happiness, or SWB, is in fact, strongly influenced by attachment styles. More specifically, it was expected that the effect of CSE on SWB indicators would be fully mediated by PSE among insecure individuals, but only partially mediated among secure individuals. In other words, for insecure individuals, pursuing self-esteem may be the major means of achieving happiness when their collective identities are taken into consideration.

## 2 Method

### 2.1 Subjects

The sample of the research consisted of 463 university students (306 female, 157 male). The mean age was 21 (ranging from 17 to 31). The data was collected from different faculties of Ankara University (Faculty of Communication, Politics, Education, and Law). All scales were administered in one session.

### 2.2 Variables and Measures

#### 2.2.1 *Self-Esteem*

The Ten-Item Rosenberg Self-Esteem Scale (RSES—Rosenberg 1965) was used to measure self-esteem, since it is a common global self-esteem measure. The respondents' levels of agreement with 10 self-evaluative statements are averaged to produce an index of self-esteem. Responses are specified on a 5-point Likert-type scale with higher scores reflecting more positive self-evaluations. The scale was first translated into Turkish by Tugrul (1994), who also reported a Cronbach alpha coefficient of 0.86. In this study, Cronbach's Alpha was defined by 0.84.

#### 2.2.2 *Collective Self-Esteem*

Luhtanen and Crocker (1992) developed the collective self-esteem scale (CSES) for assessing self-esteem reliant on belonging to collective groups such as those based on ethnicity, gender, and religion. The general form of the scale was used in this study because this allows individuals to take the most important personal reference groups into account when answering the items (Luhtanen and Crocker 1992; Crocker et al. 1994). The scale consists of four subscales, each of which has four items. Although the scale consists of multiple factors, the original measurement study showed that a higher-order general CSE factor produced better results (Luhtanen and Crocker 1992). The scale was adapted into Turkish by Aslitürk (2001), who conducted a factor analysis study. The results revealed four factors explaining 58% of the variance. Since the factor analysis results did not supported the original factor structure, Aslitürk used only the total score

of the scale. Cronbach's Alpha coefficient of the scale was found to be 0.85 in the present study.

### 2.2.3 Attachment Styles

The Relationship Scales Questionnaire (RSQ—Bartholomew and Horowitz 1991) was developed to define four attachment styles, namely: secure, fearful, preoccupied, and dismissive. The scale was used in the present research to measure general orientations to close relationships. Although it consists of 30 items, only 18 were used to determine the attachment styles of the participants. Although the scale has been shown to have low reliability (Cronbach's alpha ranged from 0.41 to 0.71), Bartholomew and Horowitz showed that it was able to determine four attachment prototypes. The scale was adapted into Turkish by Sümer and Güngör (1999) and was shown to be a reliable measure to differentiate individuals according to their attachment styles both in Turkish and American college students. The authors found that the internal consistencies ranged from 0.35 to 0.65 for the Turkish sample. The internal consistency estimates ranged from 0.45 to 0.73 in the present research. After computing the scores of four attachment styles for all participants, each participant assigned one of these styles which is higher than the other three.

### 2.2.4 Happiness

The Positive and Negative Affect Schedule (PANAS) was developed by Watson et al. (1988) as a brief measure of an affective evaluation of life, namely happiness. A general time frame was used in the present research. The results of the factor analysis employed in the original scale yielded two dominant factors, accounting for the 68.7 of the variance in the general time frame. Internal consistency was 0.88 and 0.87 for PA and NA, respectively. The adaptation of the scale to Turkish was made by Gençöz (2000). The author found that the internal consistencies of PA and NA were 0.83 and 0.86, respectively, compared to 0.73 and 0.79 in the present study.

### 2.2.5 Life Satisfaction

Two measures were used to define satisfaction with life levels of the participants: the Satisfaction with Life Scale (SWLS) and the Life Satisfaction Scale (LSS). Diener et al. (1985) SWLS was used to identify the individual differences concerning the cognitive evaluation of one's own life. The scale allows individuals to evaluate their lives according to their subjective criteria. SWLS was developed in order to define the extent to which individuals are satisfied with life in general. The internal consistency of the scale was 0.87. Durak et al. (2008) adapted the scale into Turkish and reported satisfactory internal consistencies in different studies ( $\alpha = 0.86$  and 0.82). Cronbach's Alpha was 0.81 in the present study. In addition to SWLS, the Life Satisfaction Scale (Young et al. 1995) was used because it was suggested (Diener et al. 1999) that specific areas of life such as family and school should also be evaluated, as well as general life satisfaction. The items from LSS are "I am satisfied with my family", "I am satisfied with my friends", "I am satisfied with myself", and "I am satisfied with my school". The results of the confirmatory factor analysis indicated a single factor with a reliability coefficient of 0.67. These two scales were used in combination by Aydin (1999) to measure life satisfaction of college students

and found to have a satisfactory reliability ( $\alpha = 0.86$ ). Test–retest reliability was found as 0.81 by the researcher for a two-week interval. The reliability coefficient was found to be  $\alpha = 0.84$  in the present study.

### 3 Results

#### 3.1 Test of Mediation

##### 3.1.1 Descriptive Statistics

Means, standard deviations, and zero-order correlations for the 9 measured variables are shown in Table 1. All skewness and kurtosis values were less than 1, ranging from 0.003 to 0.806 for skewness and from 0.040 to 0.776 for kurtosis, indicating that there is no problem with the data in terms of a normality assumption.

##### 3.1.2 Test of the Measurement Model

The measurement model posits the relations of the observed variables to their underlying constructs, which were allowed to intercorrelate freely. Item parceling method was used in the present study to create latent variables. Although there are different kinds of item parceling, the method used in this study creates relatively equivalent indicators by spreading “better” and “worse” items across the different parcels. Indicators as parcels were created for each latent variable by rank-ordering items according to the size of item-total correlations and then summing sets of items to obtain equivalent indicators for those constructs. Four latent variables were created using this method: CSE (two parcels from the CSES), personal self-esteem (two parcels from the RSES), happiness (three parcels from the PANAS), and life-satisfaction (two parcels from the SWLS and LSS).

**Table 1** Means, standard deviations, and correlations among 9 observed variables

Variable	M	SD	CSE1	CSE2	SE1	SE2	HAPP1	HAPP2	HAPP3	LS1	LS2
1. CSE1	23.77	3.53	–								
2. CSE2	23.81	3.58	0.773	–							
3. PSE1	20.34	3.44	0.327	0.383	–						
4. PSE2	20.30	3.34	0.357	0.387	0.643	–					
5. HAPP1	34.37	4.07	0.272	0.322	0.484	0.510	–				
6. HAPP2	33.87	4.45	0.346	0.378	0.468	0.491	0.660	–			
7. HAPP3	29.11	3.87	0.274	0.316	0.435	0.454	0.626	0.571	–		
8. LS1	15.12	3.89	0.288	0.311	0.362	0.348	0.300	0.363	0.268	–	
9. LS2	14.15	3.12	0.365	0.375	0.431	0.439	0.352	0.405	0.301	0.629	–

*N* = 463. CSE1-CSE2 = Two parcels from the CSES to define collective self-esteem (Higher scores indicate higher levels of collective self-worth); PSE1-PSE2 = (Two parcels from the RSES to define personal self-esteem (Higher scores indicate higher levels of self-worth); HAPP1-HAPP3 = Three parcels from the PANAS to define happiness (Higher scores indicate higher levels of positive affect and lower levels of negative affect); LS1-LS2 = Two parcels from the SWLS and LSS to measure students’ life satisfaction (Higher scores indicate higher levels of life satisfaction). All correlation coefficients are significant at  $p < .01$

**Table 2** Factor loadings, standard errors, and t-values for the measurement model

Measure and variable	Unstandardized factor loading	SE	<i>t</i>	Standardized factor loading
Collective self-esteem				
Parcel 1	3.01	0.16	19.39*	0.85
Parcel 2	3.28	0.15	18.82*	0.92
Personal self-esteem				
Parcel 1	2.71	0.15	18.18*	0.79
Parcel 2	2.72	0.14	18.82*	0.81
Life satisfaction				
Parcel 1	2.88	0.18	15.74*	0.74
Parcel 2	2.70	0.15	18.26*	0.86
Happiness				
Parcel 1	3.41	0.17	20.43*	0.83
Parcel 2	3.55	0.19	19.15*	0.80
Parcel 3	2.86	0.17	17.19*	0.73

*N* = 463. Collective self-esteem 1, 2 = Two parcels from collective self-esteem scale; personal self-esteem 1, 2 = two parcels from Rosenberg Self-Esteem Scale; Life satisfaction 1, 2 = Two parcels from satisfaction with Life Scale and Life Satisfaction Scale; Happiness 1, 2, 3 = three parcels from the PANAS

\* *p* < .01

**Table 3** Correlations among the latent variables for the measurement model

Latent variable	1	2	3
1 Collective self-esteem	–		
2 Personal self-esteem	0.53	–	
3 Life satisfaction	0.49	0.62	–
4 Happiness	0.46	0.74	0.53

*N* = 463; *p* < .01 for all statistics

An initial test of the measurement model resulted in a nearly perfect fit to the data,  $\chi^2(21, N = 463) = 22.21, p > .05$ ; GFI = 0.99; CFI = 1.00; RMSEA = 0.011 (90% confidence interval for RMSEA = 0.00–0.041). All of the loadings of the measured variables on the latent variables were large and statistically significant (standardized values ranged from 0.73 to 0.92, *p* < .001, see Table 2).

As shown, all of the latent variables appear to have been adequately operationalized by their respective indicators. In addition, correlations amongst all latent variables in the model were all statistically significant (Table 3).

### 3.1.3 Test of the Structural Model

The mediational hypotheses for both happiness and life satisfaction were tested by examining the fit of a series of structural models to the data. Figure 1 summarizes the full number of hypothesized relations among latent variables (measured and error term variables are omitted for the sake of clarity). The tests of mediation were performed by examining whether there were differences between the partially mediated model, which included the direct effect from CSE to life satisfaction and happiness (paths 4 and 5), represented in Fig. 1, and those models in which either one of these paths is omitted.

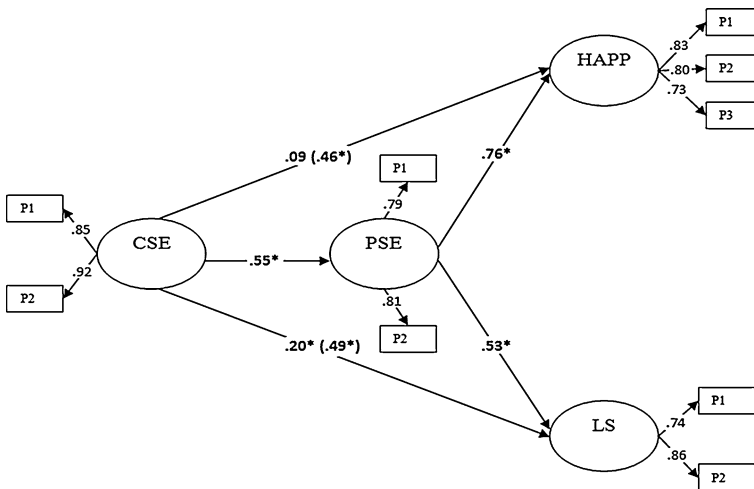


The test of the partial mediation model in Fig. 1 (Model 1) resulted in a good fit to the data as indicated by the following goodness of fit statistics:  $\chi^2(22, N = 463) = 23.53, p > .05$ ; GFI = 0.99; CFI = 1.00; RMSEA = 0.012 (90% confidence interval for RMSEA = 0.00–0.041). Testing the mediational effect of personal self-esteem with respect to life satisfaction where the path 5 was set to zero resulted in the following goodness of fit statistics:  $\chi^2(23, N = 463) = 37.75$ ; GFI = 0.98; CFI = 0.99; RMSEA = 0.037 (90% confidence interval for RMSEA = 0.013–0.058). The chi-square difference test (14.22, 1:  $p < .001$ ) indicated that this model had a significantly worse fit to the data than Model 1, showing that the path 5 should be retained in the model.

The same method regarding path 4, testing the mediational effect of personal self-esteem concerning happiness, indicated the reverse situation with the following statistics:  $\chi^2(23, N = 463) = 26.30, p > .05$ ; GFI = 0.99; CFI = 1.00; RMSEA = 0.018 (90% confidence interval for RMSEA = 0.00–0.044). A Chi-square difference test (2.78, 1:  $p > .05$ ) indicated that this model was not a significantly worse fit to the data than Model 1, showing that the path could be omitted from the model. Thus, this goodness of fit statistics was deemed to be those of the final model. The final model was accepted with the standardized parameter estimates depicted in Fig. 3.

According to these results, it is evident that the relationship between CSE and happiness was fully mediated by personal self-esteem, whereas a partial mediation situation was the case for life satisfaction.

One additional analysis was performed in order to obtain further statistical proof concerning the partial mediational role of personal self-esteem with regard to life satisfaction. The coefficient for the direct effect (the path from CSE to life satisfaction) was constrained to the value obtained in the model, with no indirect effects specified. In such a case, two nested models were defined: one with direct and indirect effects freely estimated (Model 1) and one in which the indirect effect is freely estimated but the direct effect is



**Fig. 3** Standardized parameter estimates of the final structural model for all participants.  $N = 463$ ; The numbers in parentheses refer to the standardized coefficients in the measurement model in which only covariances among the latent variables were freely estimated; the errors of the observed variables are omitted;  $P_s$  parcels created to define latent constructs,  $CSE$  collective self-esteem,  $PSE$  personal self-esteem,  $HAPP$  happiness,  $LS$  life satisfaction; \* $p < .01$

fixed. The chi-square difference test (26.77, 1:  $p < .001$ ) showed, indeed, that there is difference between the standardized values for the path, indicating the decrease (from  $\beta = 0.49$  to  $\beta = 0.29$ ) in the standardized value of the path from CSE to life satisfaction was statistically significant.

It should be noted here that the modification indices did not suggest adding a covariate between happiness and life satisfaction in this model, which indicates that self-esteem is a common cause for these variables. This is an expected result given that self-esteem has been found to be a strong predictor of both affective and cognitive evaluations of life (Diener and Diener 1995; Diener et al. 1999).

In order to rule out the possibility of alternative models, two possible mediation models were tested against the final version of the proposed model. The first alternative model tested the possibility of a reverse causal relationship between collective and personal self-esteem by changing the order of the variables in the model. In other words, CSE mediated the relationship of personal self-esteem to happiness and life satisfaction. The model produced nearly the same goodness of fit statistics  $\chi^2(23, N = 463) = 23.19, p > .05$ ; GFI = 0.99; CFI = 1.00; RMSEA = 0.004 (90% confidence interval for RMSEA = 0.00–0.039) as gained in the current model. However, examination of the standardized path coefficients showed a clear spurious relationship between CSE and SWB indicators as a result of the shared influence of personal self-esteem. The association of personal self-esteem with life satisfaction ( $\beta = 0.53$ ) and happiness ( $\beta = 0.77$ ) was not affected by the mediator role of CSE and remained very close to zero-order correlations reported in Table 3. As a natural result of this situation, the path coefficient from CSE to life satisfaction clearly decreased ( $\beta = 0.19$ ) from the reported zero-order correlation ( $r = 0.49$ ) and the path coefficient from CSE to happiness was shown to be not statistically significant ( $\beta = 0.09$ ) while the zero order correlation between the two were relatively high ( $r = 0.46$ ).

Another alternative model was tested, in which the relationship between CSE and personal self-esteem is defined by their SWB. This model produced a significant reduction in fit. Furthermore, fit indices  $\chi^2(23, N = 463) = 66.13, p < .05$ ; GFI = 0.98; CFI = 1.00; RMSEA = 0.064 (90% confidence interval for RMSEA = 0.46–0.082) indicated that this model did not fit the data well.

These results showed that the proposed model tested is the most plausible mediation model compared to the alternatives. Moreover, this model has a strong theoretical background, which contrasts with the absence of any theoretical support for the others.

### 3.2 Test of Moderated Mediation

Participants were divided into four groups using a formula suggested by Griffin and Bartholomew (1994). Means, standard deviations, and zero-order correlations for the 9 measured variables according to attachment groups are shown in Table 4. Before analyzing the invariance by multi-group comparisons concerning mediation, the measurement model was tested for invariance, which considers the testing of the number of factors and the pattern of factor loadings (Kline 2005; Jöreskog and Sörbom 1993). In searching for the invariance, first a baseline model with no equality constraints across groups was tested (Model A). The subsequent model tested the invariance of the factor loadings that are the paths from latent variables to observed variables (Model B).

The chi-square value of 199.07 with 141 degrees of freedom for the baseline model (Model A) was compared against the chi-square value of 211.69 with 156 degrees of freedom for Model B that specified invariance for the number of factors and factor loadings

**Table 4** Means, standard deviations, and correlations among 9 observed variables among attachment groups

Variable	M	SD	CSE1	CSE2	PSE1	PSE2	HAPP1	HAPP2	HAPP3	LS1	LS2
<b>CSE1</b>											
Secure	24.47	3.62	–								
Fearful	23.76	3.82									
Preoccupied	23.45	3.61									
Dismissing	23.22	3.65									
<b>CSE2</b>											
Secure	24.39	3.11	0.75	–							
Fearful	23.47	3.89	0.78								
Preoccupied	23.77	3.77	0.80								
Dismissing	23.42	3.97	0.75								
<b>PSE1</b>											
Secure	21.74	2.31	0.21	0.19	–						
Fearful	19.70	3.79	0.30	0.44							
Preoccupied	19.13	3.70	0.27	0.37							
Dismissing	20.44	3.42	0.45	0.46							
<b>PSE2</b>											
Secure	20.89	3.04	0.37	0.31	0.51	–					
Fearful	20.35	3.37	0.29	0.36	0.70						
Preoccupied	19.60	3.43	0.31	0.32	0.67						
Dismissing	20.27	3.48	0.43	0.53	0.69						
<b>HAPP1</b>											
Secure	35.25	3.99	0.25	0.28	0.37	0.42	–				
Fearful	34.44	4.11	0.24	0.30	0.43	0.53					
Preoccupied	33.27	4.09	0.17	0.27	0.48	0.47					
Dismissing	34.38	4.12	0.39	0.42	0.58	0.57					
<b>HAPP2</b>											
Secure	35.10	4.12	0.30	0.30	0.37	0.35	0.67	–			
Fearful	33.70	4.77	0.38	0.45	0.48	0.53	0.68				
Preoccupied	32.54	4.20	0.29	0.34	0.48	0.57	0.64				
Dismissing	33.91	4.44	0.36	0.40	0.43	0.47	0.61				
<b>HAPP3</b>											
Secure	30.71	3.30	0.36	0.38	0.22	0.28	0.63	0.57	–		
Fearful	28.58	4.13	0.37	0.42	0.51	0.56	0.69	0.59			
Preoccupied	28.04	3.55	0.06	0.11	0.35	0.38	0.53	0.49			
Dismissing	28.72	4.05	0.21	0.28	0.43	0.53	0.61	0.54			
<b>LS1</b>											
Secure	15.50	3.72	0.37	0.42	0.36	0.35	0.27	0.37	0.29	–	
Fearful	14.90	4.41	0.33	0.38	0.59	0.47	0.41	0.49	0.36		
Preoccupied	15.06	3.60	0.22	0.14	0.33	0.43	0.24	0.34	0.11		
Dismissing	14.86	3.89	0.21	0.26	0.16	0.21	0.28	0.25	0.26		
<b>LS2</b>											
Secure	14.88	2.88	0.31	0.34	0.30	0.37	0.24	0.36	0.24	0.70	–
Fearful	13.97	3.37	0.42	0.44	0.54	0.53	0.33	0.47	0.35	0.67	

**Table 4** continued

Variable	M	SD	CSE1	CSE2	PSE1	PSE2	HAPP1	HAPP2	HAPP3	LS1	LS2
Preoccupied	13.59	2.97	0.39	0.31	0.48	0.45	0.43	0.32	0.25	0.50	
Dismissing	13.99	3.22	0.28	0.37	0.29	0.37	0.36	0.38	0.24	0.63	

$N = 463$  (138 Secure, 102 Fearful, 116 Preoccupied, 107 Dismissing)

All correlation coefficients are significant at  $p < .05$  except for the ones lower than 0.17

*CSE* collective self-esteem (higher scores indicate higher levels of collective self-worth), *PSE* personal self-esteem (higher scores indicate higher levels of self-worth), *HAPP* happiness (higher scores indicate higher levels of positive affect and lower levels of negative affect), *LS* life satisfaction (higher scores indicate higher levels of positive evaluation of life)

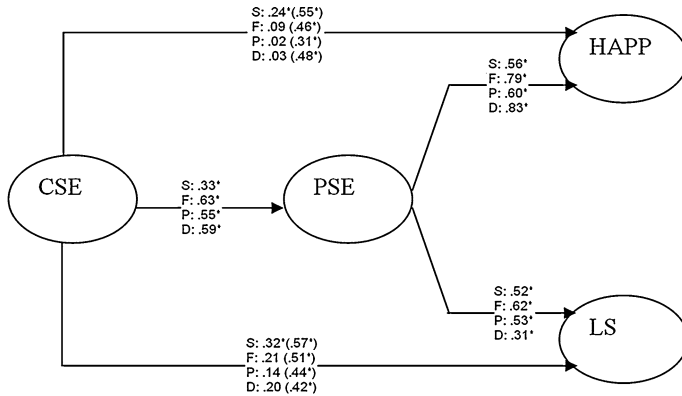
of items defining each factor. The  $\chi^2$  difference test did not result in a deterioration of the model (12.62, 15:  $p > .05$ ). These findings indicate that the latent variables are measured similarly in each group. The goodness of fit statistics for the baseline model was as follows: GFI = 0.93; CFI = 0.96; RMSEA = 0.060 (90% confidence interval for RMSEA = 0.039–0.078).

The next set of analyses involved testing the invariance of the coefficients for direct structural paths from CSE to life satisfaction and happiness. Again, a nested models strategy was used. Although there is a general inclination to test individual parameters in the model for invariance, three models rather than individual parameters were tested in this study, applying a nested models strategy proposed by Anderson and Gerbing (1988). Since the main hypothesis was that the relationship between CSE and SWB would be partially mediated by personal self-esteem in the secure group, in contrast to the other attachment groups, where the relationship would be fully mediated, two models were compared against the target model depicting such a case. It was expected that the target model would fit better than the most constrained model, whereas it would not fit worse than the least constrained. The nested models and goodness of fit statistics were as follows:

**Model 1:** The least constrained model depicted partial mediation in all groups, which means the paths from CSE to happiness and life satisfaction were free in all groups. Goodness of fit statistics for this model was computed as follows:  $\chi^2(127, N = 463) = 186.15$ ,  $p < .05$ ; GFI = 0.94; CFI = 0.96; RMSEA = 0.064 (90% confidence interval for RMSEA = 0.043–0.083).

**Model 2:** The partially constrained target model with the relationships of CSE with happiness and life satisfaction are partially mediated by personal self-esteem in secure group whereas fully mediated by personal self-esteem in all other groups. The model fitted the data as indicated by the following goodness of fit statistics:  $\chi^2(133, N = 463) = 190.78$ ,  $p < .001$ ; GFI = 0.93; CFI = 0.96; RMSEA = 0.062 (90% confidence interval for RMSEA = 0.041–0.080). A  $\chi^2$  difference test showed that this partially constrained model was not worse than Model 1 (4.03; 6:  $p > .05$ ).

**Model 3:** The most constrained model which has a relationship between CSE and happiness, and life satisfaction was fully mediated by personal self-esteem. In other words, the paths from CSE to happiness and life satisfaction were fixed to 0 in all 4 groups. Goodness of fit statistics resulted in similar values for this model:  $\chi^2(135, N = 463) = 207.37$ ,  $p < .001$ ; GFI = 0.93; CFI = 0.95; RMSEA = 0.068 (90% confidence interval for RMSEA = 0.049–0.086). However, the results of the chi-square difference test (17.19; 2:  $p < .001$ ) indicated that this model was significantly worse than the target model.



**Fig. 4** Standardized parameter estimates for all groups. The numbers in parentheses refer to the standardized coefficients in the measurement model in which only covariances among the latent variables were freely estimated; S secure ( $N = 138$ ), F fearful ( $N = 102$ ), P preoccupied ( $N = 116$ ), D dismissing ( $N = 107$ ); \* $p < .01$

Although the invariance of mediation seems to be more crucial for happiness than for life satisfaction, the parameter estimates for each group in Fig. 4 show, consistent with the invariance hypotheses, that the direct paths from CSE to life satisfaction and happiness were statistically significant only in the secure group.

These results strongly supported the moderated mediation hypothesis, in that a partial mediational model was valid for the group of securely attached individuals while a full mediation model was valid for other attachment groups.

#### 4 Discussion

First of all, the results of the present study clearly indicated that the relationship between CSE and subjective indicators of mental health, namely happiness and life-satisfaction, was mediated by personal self-esteem. The mediational effect of personal self-esteem was stronger for happiness, resulting in full mediation, whereas a partial mediation case was detected for life satisfaction. These findings are consistent with earlier research (Crocker et al. 1994) when life satisfaction was taken into consideration. However, there is currently no research directly testing the mediator effect with regard to happiness of individuals. This study showed that the effect of CSE on happiness or emotional well-being is fully mediated by the level of personal self-esteem. Thus, it appears that the level of individuals' personal self-esteem is the basic determinant for their happiness when CSE is considered as a source. This is highly consistent with the assumptions of TMT, which argues that in order to feel free from negative affect, and to experience positive affect, individuals need to feel self-worth derived from affiliations to their respective community (Pyszczynski et al. 1997, 2004). People actively seek symbolic icons of powers toward which they might submit themselves, according to Liechty (1998), who also describes life as a constant movement between establishing personal meaning and seeking confirmation of that meaning from the group.

The most important finding of the current study is the moderator effect of attachment styles on the relationships among the constructs in the model tested. The overall picture,

which was valid when the sample was considered as a whole showed dramatic variation when the participants were divided into four separate groups according to their attachment styles. The parameter estimates in the secure attachment group showed evident differences concerning the mediator effect of personal self-esteem, indicating that the effect of CSE has both direct and indirect influences on both life satisfaction and happiness. This result indicates that secure individuals feel happy and satisfied with their life with or without the mediator effect of personal self-esteem, when their CSE levels are taken into consideration. In the other groups, however, the effect of CSE had no direct effect on SWB when their levels of personal self-esteem were introduced into the structural equation. As indicated by earlier research, identification with or affiliations to groups are evaluated into personal preferences. The research, for example, by Vignoles et al. (2006), indicated that people are happiest when identity elements best satisfy their motives for self-esteem. It could be argued that, for insecure persons, collective sources of self-esteem increase happiness when such sources make contributions to their personal self-esteem. In other words, for individuals who have insecure attachment styles, personal self-esteem seems to be the basic underlying factor in the relationship between CSE and well-being.

The motivation for the pursuit of self-esteem (Crocker et al. 1994) seems to be the best framework to explain the moderator effects of attachment styles. For individuals with an insecure attachment style, collective identities mean something different than to those who are more secure. Indeed, the zero-order correlations show that most of the correlations between the indicators of CSE and PSE are lower in the secure group. Since insecure attachment styles bring about problems in interpersonal relationships, these people may try to compensate for their need for self-esteem from other sources of identities not requiring face to face interactions. In such a case, their collective identities become more crucial for their need to feel self-worth, and, in turn, for happiness and satisfaction in life. For an individual having serious difficulties with significant others, group affiliations or collective identities, i.e., gender, ethnicity, or political movements, would be a safer source of support for their self-worth.

Moreover, since the self-esteem of individuals having insecure attachment styles is more likely to be based on the evaluations made by others (Park et al. 2004), their need to pursue self-esteem will become much more dependent on collective sources of esteem. For example, students of a credited university with an avoidant attachment style would be happier only when this affiliation positively contributes to their self-esteem. Since they are less likely to feel accepted by the significant others for who they are, this affiliation will more likely to be linked to the need to pursue self-esteem to achieve happiness. As Crocker and Nuer (2004) indicated, “secure attachments provide alternative means to be happy, without the need to pursue self-esteem” (p. 4). Thus, in contrast to insecurities, secure individuals may be satisfied and feel happy because of their group affiliations, not merely a means of raising their self-esteem and, hence, their security system, but because these affiliations have intrinsic meaning for them.

Based on these explanations, it is possible that compared to insecure individuals, the self-esteem of secure individuals plays a lesser role in their happiness and satisfaction. This is an expected result given that those having true self-esteem are usually less concerned with it (Ryan and Deci 2004). Obviously, secure individuals have more integrated and stable self-worth (Park et al. 2006), and thus, would be less likely to make self-esteem central to their lives.

Overall, these results have implications in the research on self-esteem, suggesting that pursuit of self-esteem is more important for those who have an insecure, rather than a secure, attachment style. This is the reason why secure individuals show less defensiveness

and aggressiveness in in-group versus out-group evaluations compared to those with insecure attachment styles (Hart et al. 2005). According to these authors, when security systems of individuals are threatened, anxious people are more likely to defend their worldview, and, avoidant people to show aggressiveness. The research by Mikulincer and Shaver (2001), indeed, showed that secure base priming led to less negative evaluative reactions toward out-groups. A similar view is given by Sheldon (2004) who stated, “problems arise only when people strive too directly for self-esteem, rather than deriving it as a natural concomitant of non-self-focused goals” (p. 421).

Another interesting result of this research is to show that dismissive individuals’ personal self-esteem is much more dependent on CSE than individuals with any other attachment style. This result supports the findings of Carvallo and Gabriel (2006), who describe the dismissives’ strong desire to be accepted by others in the following terms: “If dismissives choose to disaffiliate from others to minimize the possibility of being rejected, they may well have a strong need to feel connected and accepted by others” (p. 699). The results of Mikulincer’s (1998) research, in this regard shows that the positive self-view articulated by avoidant individuals does not necessarily imply the existence of a truly high self-esteem. In fact, according to Mikulincer, the positive self-worth found in avoidant individuals is related to their basic goal—the pursuit of self-reliance.

As a final point, it can be considered that the results presented here, provide evidence that some of the basic propositions of TMT might not be valid for secure individuals. TMT (Pyszczynski et al. 2004) views the need for attachments as a result of the contemporary need to cope with distress and fear, and thereby feel safe and secure. Accordingly, the need for self-esteem emerges out of the desire to be considered a good person and thus secure the love and protection of others. This proposition implies a contingent or conditional self-evaluation and seems to be less valid for secure individuals who, as children, received unconditional parental love. As Ryan and Deci (2004) indicated, the need to pursue self-esteem indicated by TMT implies a defensive rather than a true self-esteem. Indeed, as the results show, the secure individuals’ CSE predicted their well-being even after their personal self-esteem was taken into consideration. Hence, secure individuals seem to be happy and satisfied as a result of their affiliations to groups or social categories, even when this bond does not contribute to their personal self-esteem. In insecure groups, however, this seems not to be the case. As Park et al. (2006) indicated, although a person’s attempt to prove one’s worth to others may temporarily relieve negative affect or anxiety, this hinders feelings of safety and security because the focus is on self-validation rather than the need to feel connected to others.

The partial mediation situation in the secure group leaves open the possibility of other mediator(s) for these individuals. One possible mediator could be the satisfaction of basic psychological needs proposed by self-determination theory, related to which Ryan and Deci (2004) state that groups or some affiliations can provide support and opportunities for individuals to fulfill the basic psychological needs required for a true or optimal self-esteem. This is clearly more likely to be the case for secures than insecure, according to the results provided by the present research, and the subject is worthy of future research.

The results of the present study also have some important implications for practice. First, counselors, especially those working in colleges or universities, should be aware of the different ways of pursuing self-esteem when helping their clients. The results of this study imply that the attachment styles of clients should be taken into consideration when collective identities are important in the context. It has been indicated before that attachment styles are important in conceptualizing the aggression towards out-group members. Counselors could help those clients with aggressive tendencies by helping them

to become aware of their particular attachment styles and the consequences for the attitudes towards ‘others’. As a way of pursuing self-esteem, a young student, for example, could overemphasize political group affiliation in order to feel better about herself, which makes her oversensitive to out-group members. Acknowledging that her aggressive tendencies toward out-group members could partly be the result from difficulties in forming close relationships could contribute to her understanding of the way she has chosen to feel better about herself and her lifestyle. Such understanding could be helpful in reformulating her beliefs and feelings about forming close attachments to others versus to groups.

Beyond the contributions of this research, there are some limitations related to the research design implemented. Although the statistical techniques used in this study are advanced thanks to structural equation modeling, cross-sectional research on testing moderated mediation may result in some problems. As Edwards and Lambert (2007) indicate, such a design has two (potential) weaknesses: firstly it has lower statistical power than would be available from the full sample; and secondly, it may discard information and reduce statistical power by dichotomizing a continuous moderator variable. With regard to the former, the replication of the results obtained here in future research more adequately representing attachment styles and with a greater sample size is needed. Concerning the latter issue, future research could be replicated taking two groups into consideration, namely one group with both high anxiety and avoidance, and another with low anxiety and avoidance.

Since the present research was based on a cross-sectional data, future research should test the causal directions proposed in the model using an experimental design. Finally, all participants were university students and future research should test whether the same results could be obtained for individuals from a variety of different age groups.

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