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ORIGINAL PAPER

The Impact of the Early Caregiving Environment on Self-Compassion: the Mediating Effects of Emotion Regulation and Shame

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Abstract

Objectives The purpose of the present study was to assess the mediating effects of emotion regulation and perception of self (i.e., shame) on the relationship between early attachment-based caregiving and self-compassion in early adulthood.

Methods Participants were 233 ethnically diverse undergraduate students (61% females, 39% males) between 18 and 28 years old (M = 22.7 years) from a midsized southwestern university in the USA. Participants completed a questionnaire comprised of scales assessing early attachment-based caregiving, emotion regulation, shame, and self-compassion. Structural equation modeling (SEM) using EQS (version 6.1) was used to analyze the data.

Results Results showed an indirect association of early attachment-based caregiving with self-compassion through emotion regulation and perception of self (as measured by "shame"); a direct, moderate association of early attachment-based caregiving with emotion regulation and shame; a direct, moderate association of shame with self-compassion; and a direct, large association of emotion regulation with self-compassion.

Conclusion The results of this study suggest that the quality of the early caregiving environment is related to young adults' emotion regulation and shame proneness, which in turn are linked to their subsequent capacity for self-compassion. These findings are consistent with other studies suggesting the important role of early attachment-based caregiving for the development of emotion regulation, positive self, empathy, and psychological well-being.

Keywords Self-compassion · Early attachment · Emotion regulation · Shame

The research literature on self-compassion has been rapidly expanding with findings suggesting that self-compassion is associated with many positive outcomes including psychological well-being (Zessin et al. 2015), decreased psychopathology (Neff and McGehee 2010; Zeller et al. 2014), self-efficacy (Iskender 2009; Manavipour and Saeedian 2016), increased motivation (Neff et al. 2005), improved self-worth (Neff and Vonk 2009), increased physiological functioning (Arch et al. 2014; Breines et al. 2015), and positive interpersonal relationships (Neff and Beretvas 2013; Yarnell and Neff 2013). Given the growing body of research supporting a significant link between self-compassion and psychological, physical, and relational well-being (Neff and Germer 2017), furthering our understanding of how self-compassion takes root and develops over time is warranted.

Self-compassion refers to witnessing one's own suffering in challenging times and attending to that suffering with kindness and a nonjudgmental stance while recognizing that suffering is part of the common human experience (Neff 2003b). The self-compassion construct has three components—*mindfulness* (versus overidentification), *self-kindness* (versus self-judgment), and *common humanity* (versus isolation)—that interact and combine with one another to form a self-compassionate state of mind (Neff 2003b).

While the self-compassion literature highlights numerous beneficial outcomes of having self-compassion, little research attention has focused on its origins. Preliminary evidence suggests that it is the early caregiving environment that significantly impacts the subsequent development of self-

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compassion (Marta-Simões et al. 2018; Neff and McGehee 2010; Pepping et al. 2015). Studies show that self-compassion develops when the parent is present, kind, compassionate, and sensitive toward the child's needs (Moreira et al. 2018), and higher levels of self-compassion can be found in individuals who experience positive family relationships and maternal support (Matos et al. 2017; Vettese et al. 2011). Utilizing the lens of attachment research, these findings suggest a link between early attachment-based caregiving and the subsequent development of self-compassion.

The first component of self-compassion, mindfulness (i.e., the ability to maintain the attention to the present moment with awareness of self and others), appears to be facilitated by early attachment security as studies have found that during difficult situations, securely attached individuals are better able to tolerate distress and maintain the belief that they can overcome stressful situations, and are thus less likely to become overwhelmed by their distress (Mikulincer 1998b; Mikulincer et al. 1993). Studies suggest that since a secure attachment promotes healthy emotional development (including increasing one's ability for mindful awareness) (e.g., Pepping et al. 2013, 2015), these individuals have a better capacity for mindfulness and tolerating distress than their insecurely attached counterparts (Baer et al. 2006). Neurobiological research suggests that the capacity to cope with new and stressful situations, as demonstrated by securely attached individuals, has its roots in the optimal development of the right hemisphere of the brain, the part of the brain where emotional information is processed (Schore 2017). The right hemisphere of the brain develops during the first year of life with optimal development occurring in the context of mother-infant emotional attunement (Schore 2017). This in turn is thought to assist securely attached individuals in developing an awareness of self and others (Decety and Chaminade 2003), which is a core element of mindfulness. The opposite of mindfulness is overidentification, which is the tendency to become identified with negative emotions, thoughts, and sensations that arise in difficult situations (Neff 2003b). Insecurely attached individuals are at greater risk for experiencing lower levels of mindfulness due to difficulties regulating their emotions (Mikulincer 1998b; Pepping et al. 2013, 2015; Schore 2017), focusing their attention, having diminished awareness, and their tendency to engage in rumination and self-judgment (Caldwell and Shaver 2012, 2013, 2015; Shaver et al. 2007).

The second component of self-compassion, self-kindness (i.e., being accepting and loving toward oneself even when experiencing difficult situations or faced with personal limitations), may also be impacted by the early attachment relationship. Self-kindness has its roots in early attachment security as it develops within the early secure relationship with caregivers who are sensitively attuned and responsive toward the child's needs (Shaver et al. 2017). Securely attached individuals internalize their caregivers' support and responsiveness, and are more likely to develop the ability to self-care when needed (Mikulincer and Shaver 2004). They are also more likely than insecure individuals to be kind toward themselves when things go wrong, and they are less likely to be self-critical (Irons et al. 2006). The opposite of self-kindness is self-judgment, which involves being critical toward one's self, leading to such painful emotions as feelings of unworthiness or perception of being defective (Tangney and Dearing 2002). Insecure individuals tend to be self-critical (Caldwell and Shaver 2013; Cantazaro and Wei 2010) and experience feelings of shame (Chen et al. 2015; Muris et al. 2014; Wei et al. 2005).

Finally, the third component of self-compassion, common humanity (i.e., recognizing that suffering is part of the human experience, and that what makes us feel separate is what we actually have in common), also appears to be impacted by the early attachment bond. Results of neurobiological studies indicate that the right hemisphere of the brain, where the development and maintenance of a secure attachment can be observed, assists individuals in experiencing a sense of connectedness with others (Decety and Chaminade 2003; Schore 2017). Securely attached individuals are better able than those who are insecurely attached to perceive similarities between themselves and others in a realistic manner regardless of their emotional state (Mikulincer et al. 1998), and to also see their imperfections and faults as part of human limitations (Mikulincer and Shaver 2004). Insecurely attached individuals, by contrast, tend to have a diminished awareness of self and others (Caldwell and Shaver 2015).

Studies suggest, then, that securely attached individuals may be more likely than their insecurely attached counterparts to be able to tolerate distress and remain in the present moment (Baer et al. 2006), internalize caregiver responsiveness and be kind to themselves in difficult situations (Irons et al. 2006; Mikulincer and Shaver 2004), and perceive similarities between themselves and others regardless of their emotional state (Mikulincer et al. 1998) (which mirror the three facets of self-compassion, i.e., mindfulness, self-kindness, and common humanity, i.e., Neff 2003b). Emotion regulation and one's perception of self (as positive or negative) appear to be common threads underlying the three components of self-compassion (e.g., Diedrich et al. 2016; Neff and Vonk 2009; Vettese et al. 2011).

Emotion regulation is a multidimensional concept that includes awareness, understanding, and acceptance of all emotions, and the ability to modulate these emotions and control impulsive behaviors, thus allowing one to respond appropriately to situations (e.g., Gratz and Roemer 2004). Each component of the self-compassion construct implies some degree of emotion regulation, e.g., the ability to tolerate and not become overwhelmed by difficult feelings, the ability to manage distress in difficult situations, awareness, and

acknowledgement of difficult feelings, and/or active self-comforting and self-soothing in stressful/distressing situations (e.g., Neff 2003a). Researchers have noted that individuals who have difficulties with emotion regulation have lower levels of mindfulness (e.g., Caldwell and Shaver 2012), as well as overall self-compassion (e.g., Scoglio et al. 2018; Vettese et al. 2011).

The perception of one's self as positive or negative (i.e., "shame") is also evident in the components of the self-compassion construct. Shame is a painful, overwhelming emotion that leads individuals to perceive themselves as being unworthy, inadequate, and defective versus having a coherent and positive sense of self (Gilbert 1998; Lewis 1992; Tangney and Dearing 2002). This negative emotion can be triggered by one's own thoughts or beliefs that others see us as flawed or inadequate, or by one's own negative appraisal of self as being worthless, inadequate, or unlovable (Gilbert 1998; Lewis 1992; Tangney and Dearing 2002). The three components of the self-compassion construct embody the themes of self-acceptance and not being critical of one's self, not judging one's self (especially in difficult situations), not ruminating over negative thoughts, and being accepting of one's imperfections and difficult feelings (Neff 2003a). Self-criticism and its associated feelings of shame, by contrast, negatively affect self-compassion (e.g., Gilbert 2009; Gilbert et al. 2011; Gilbert and Procter 2006).

Further, studies demonstrate that early attachment security is linked to greater emotion regulation, as well as a more coherent, positive sense of self (compared to those with early insecure attachments) (e.g., Caldwell and Shaver 2013, 2015; Mikulincer and Shaver 2004; Schore 2017; Sroufe et al. 2000). The link between early secure attachment and the capacity for emotion regulation was initially proposed by Bowlby (1988), and more recent empirical evidence confirms this relationship (e.g., Dvir et al. 2014; Tani et al. 2018). Those with insecure attachments typically have a decreased capacity for emotion regulation (Schore 2017) and are more likely to develop maladaptive emotion regulation strategies (e.g., hyperactivation, deactivation) (Cassidy and Kobak 1988; Main and Hesse 1990; Mikulincer 1998a; Shaver et al. 1996). There is also evidence suggesting that shame develops within a negative early caregiving environment (e.g., shaming, physical and emotional abuse, criticism, rejection, and abandonment, neglect) (e.g., Claesson and Sohlberg 2002; Gilbert et al. 1996; Gilbert and Perris 2000; Matos and Pinto-Gouveia 2014; Stuewig and McCloskey 2005; for a review, see Mills 2005). According to attachment research, children internalize their caregiver's negative responses toward them which becomes their "internal working model" of self and others (Bowlby 1988; Gilbert 2003; Mikulincer and Shaver 2016), resulting in the development of self-criticism (Gilbert and Irons 2009; Koestner et al. 1991). Thus, the impact of the early attachment relationship on subsequent self-compassion may be indirect and due in part to its more direct effect on emotion regulation and perception of self (as positive or negative).

While research studies suggest a relationship between early parent–child attachment and subsequent self-compassion, studies have yet to fully explore this relationship including the potential mediating roles of emotion regulation and perception of self (as positive vs. negative, i.e., "shame"). To date, studies have examined adults' current attachment to mother/mother-like figure and self-compassion (Moreira et al. 2015; Moreira et al. 2016), adult romantic partner/peer attachment and self-compassion (e.g., Neff and Beretvas 2013; Neff and McGehee 2010; Pepping et al. 2015), and early attachment and self-compassion in adolescents with and without self-harm behaviors (Jiang et al. 2017; Moreira et al. 2018; Peter and Gazelle 2017). The purpose of the present study was to examine the mediating effects of emotion regulation and perception of self (as assessed by "shame") on the relationship between early attachment-based caregiving and subsequent self-compassion in early adulthood (Fig. 1). It was predicted that higher levels of attachment-based caregiving would be indirectly related to self-compassion by increasing emotion regulation and decreasing negative perceptions of self (i.e., "shame"). In SEM, the hypotheses are represented in the model figure. Every path represents a hypothesis. Every potential path that is not included represents an expected null.

Method

Participants

Two hundred thirty-three college students (61% females, 39% males) between 18 and 28 years old (M = 22.7 years) from a midsized, ethnically diverse southwestern university in the USA participated in the study. Participants' ethnicity was as follows: Hispanic (50%), Biracial/Other (28%), Caucasian

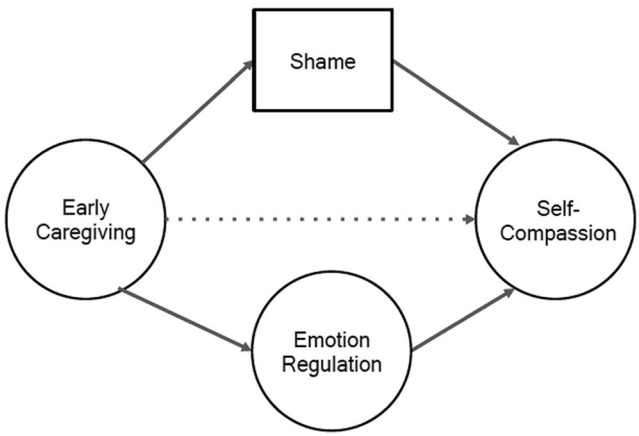

Fig. 1 Model of the relationships among early caregiving, emotional regulation, shame, and self-compassion

(13%), Asian (6%), African-American (2%), and Middle Eastern (1%). Participants were from predominately lower middle-class households based on their father's educational level (66% had a high school diploma or less; 18% had some college; 16% had college/professional degree).

Procedure

Participants were solicited from in-class announcements by the primary researcher and were told that the study investigates young adults' early experiences and later views of self and how one responds to various situations. Volunteers were handed hard copies of the survey to complete at home and return (along with their signed Informed Consent form) to the primary researcher at a subsequent class session. Some participants received extra course credit for their participation in the study at the discretion of their course instructor. This study was approved by the university's human ethics board.

Measures

Early Attachment-Based Caregiving

Three scales were used to assess early attachment-based caregiving. First, the parent scale of the Inventory of Parent and Peer Attachment (IPPA; Armsden and Greenberg 1987) was used to measure participants' attachment security toward their mother/mother figure. This measure, based on Bowlby's attachment theory, focuses on participants' first 16 years of life and measures the affective/cognitive dimensions of attachment toward parents/primary caregivers (Armsden and Greenberg 1987). The IPPA is a self-report instrument that includes 25 items assessing three dimensions: mutual trust, quality of communication, and extent of anger and alienation. Responses are rated on a 5-point Likert-scale (1 = Almost Never or Never True, 5 = Almost Always or Always True). Cronbach's alphas range from .87 to .92 (Armsden and Greenberg 1987).

Second, the Expressive Encouragement (EE) subscale from the Coping with Children's Negative Emotions Scale – Adolescent Perception of Parents (CCNES-APP; Fabes and Eisenberg 1998) was used to assess participants' perception of their mother/mother figure's encouragement to express negative affect and the degree to which their negative emotional states were validated. This measure was included to capture more recent descriptions of the key caregiver behaviors promoting a secure attachment relationship which highlight the importance of caregiver sensitive attunement to the child's changing emotional states, especially the regulation of the child's negative emotions (e.g., Gold 2011; Schore 2017). The Expressive Encouragement (EE) subscale includes nine scenarios; each response is rated on a 7-point Likert scale (1 = Very Unlikely, 7 = Very Likely). Cronbach's alpha is .89 for the mother version of the scale (Lugo-Candelas et al. 2016).

Third, the 12-item "Care" subscale from the Parental Bonding Instrument (PBI; Parker et al. 1979) was used to measure participants' perceptions of mother/mother figure's warmth/responsiveness and understanding during the first 16 years of life. Individual items highlight emotional warmth, affection, understanding, connecting emotionally, feeling valued, comforting/consoling, and positive maternal affect. This subscale was included since more recent approaches to Ainsworth's sensitivity scales highlight the importance of positive affect, warmth, and affection as indicators of the "sensitivity", as well as "responsiveness", constructs (e.g., Biringen and Easterbrooks 2012; Mesman and Emmen 2013) and are increasingly included in newer measures (e.g., Mesman and Emmen 2013) and viewed as key contributing factors to the development of a secure attachment (e.g., Bretherton 1992). Items are rated on a 4-point Likert scale (0 = Very Likely, 4 = Very Unlikely). Internal consistency (using Cornbach's alpha) for the Care subscale is .90 for mother form (Xu et al. 2018).

Emotion Regulation

The Difficulties in Emotion Regulation Scale (DERS; Gratz and Roemer 2004) was used to measure participants' emotion regulation ability. Emotion regulation is defined by its authors as the awareness of emotions, the ability to inhibit impulsive behaviors related to negative emotions, the ability to regulate the intensity and duration of their emotions, and acceptance of negative emotions as being part of life (Gratz and Tull 2010). The DERS measures elements of emotion regulation such as nonacceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, emotional awareness, limited access to emotion regulation, and lack of emotional clarity. Responses are rated on a 5-point scale (1 = Almost Never, 5 = Almost Always). The DERS provides a global score for emotion regulation, as well as six subscale scores. Gratz and Roemer (2004) cite an internal consistency (using Cronbach's alpha) of .93.

Perception of Self

The Test of Self-Conscious Affect–3–Short Form (TOSCA–3–SF; Tangney et al. 2000) was used to assess participants' perception of self, based on their tendency to react to situations with shame. The TOSCA-3-SF presents 11 scenarios that are likely to occur in daily life, each response being rated on a 5-point Likert scale (1 = Not Likely, 5 = Very Likely) for shame reaction to the situations. Internal consistency (using Cornbach's alpha) was found to be .77–.88 for shame proneness (Tangney and Dearing 2002).

Self-Compassion

The Self-Compassion Scale (SCS; Neff 2003a) was used to assess participants' current level of self-compassion. The SCS is a 26-item scale comprised of 6 subscales: Mindfulness (4 items), Overidentification (4 items), Self-Kindness (5 items), Self-Judgment (5 items), Common Humanity (4 items), and Isolation (4 items). Responses are rated on a 5-point scale (1 = Almost Never, 5 = Almost Always). Internal consistency (using Cronbach's alpha) ranges from .90 to .92 (Neff and Beretvas 2013; Neff and McGehee 2010). (There is current controversy regarding whether the SCS is a one, two, or six-factor measure [e.g., Muris and Otgaar 2020; Neff 2020]. For the current study, we used the six factors in order to maximize our explanatory potential and also the one factor in the form of the latent construct; see Neff 2003a.)

Background Information

Participants completed a background information form that requested information about the following items: participants' age, gender, ethnicity, and the level of education of their mother/mother figure and father/father figure.

Data Analyses

Prior to analysis, the measures used in the present study were examined through various IBM SPSS 23 procedures for accuracy of data entry, missing values, and fit between their distributions and the assumptions of analysis. Results from these examinations indicated that there were no issues with meeting assumptions.

Structural equation modeling (SEM) using EQS (version 6.1) was used to analyze the data. The hypothetical model (Fig. 1) was tested to determine the magnitude and direction of relationships among Early Caregiving, Emotion Regulation, Shame, and Self-Compassion. The circles in the model represent the latent variables and the rectangles represent measured variables (Fig. 2). SEM evaluates the fit of the actual data (covariance matrix) to the paths hypothesized in the a priori model. Paths from each latent construct to its actual manifest variables represent the measurement aspect of the model. The study examined the relationships among Early Caregiving (F1), a latent variable with five indicators (Trust, Communication, Alienation, Expressive Encouragement, and Care) (standardized coefficient ranged from .74 to .91); Emotion Regulation (F2), a latent variable with six indicators (Nonacceptance, Goals, Impulse, Awareness, Strategy, and Clarity), (standardized coefficient ranged from −.39 to −.94); Shame (V1), measured variable; and Self-Compassion (F3), a latent variable with six indicators (Mindfulness, Overidentification, Self-Kindness, Self-Criticism, Common Humanity, and Isolation), (standardized coefficient ranged from .39 to .85). The paths among Early Caregiving, Emotion Regulation, Shame, and Self-Compassion represent the structural part of the model, and reflect the most relevant aspects of the results for the discussion.

In the assessment of a SEM model, there is no single test of statistical significance; consequently, there can be no power analysis per se. The Chi-Square statistic does come with a p value, but this is not considered a good test of the fit of the model to the data. Instead, a ratio of the Chi-Square to its degrees of freedom is prescribed as an indication of the "goodness of fit" of the model to the data (Marsh et al. 2004). This is how it was used in this report.

Wolf et al. (2013) provided a report of a creative Monte Carlo study to support sample sizes for different types of SEM models with different magnitudes of standardized path coefficients. They included a three factor mediation model similar to the model presented in this study. Their findings indicated that the results for a model with moderate sized variance explained (comparable to the results reported below) provided reliable results with a sample size of 180. Our sample was well above 200 (refer to Table 1).

Results

Preliminary Analysis

Table 1 indicates descriptive statistics for all of the continuous variables utilized in the study and the reliability coefficients for the factors and subscales. Mardia's coefficient, a general measure of multivariate kurtosis used to examine normality, was included in the preliminary analysis of the data. The hypothesis of multivariate normality was rejected (normalized coefficient = 6.85); consequently, fit indices and tests of the statistical significance of path coefficients were conducted using the Sattora–Bentler adjustments.

Model Estimation

The study's hypothesized model was tested using three primary fit statistics: the Comparative Fit Index (CFI), the root mean square of error approximation (RMSEA), and the Sattora–Bentler scaled $\chi 2$. For CFI, an ideal value is greater than .95. For RMSEA, a good model fit indicator is a value less than .06. For the Sattora–Bentler scaled fit statistic a $\chi 2$ to df ratio of two or less is ideal. The hypothesized model was supported by the Sattora–Bentler scaled $\chi 2$ test statistic to df ratio, the CFI, and RMSEA, $\chi 2$ (120) = 213.56, CFI = .96, RMSEA = .06.

The model was evaluated and the variables were found to be good indicators for the latent constructs. Early Caregiving (F1) was a strong latent construct of early attachment-based caregiving toward their mother/mother

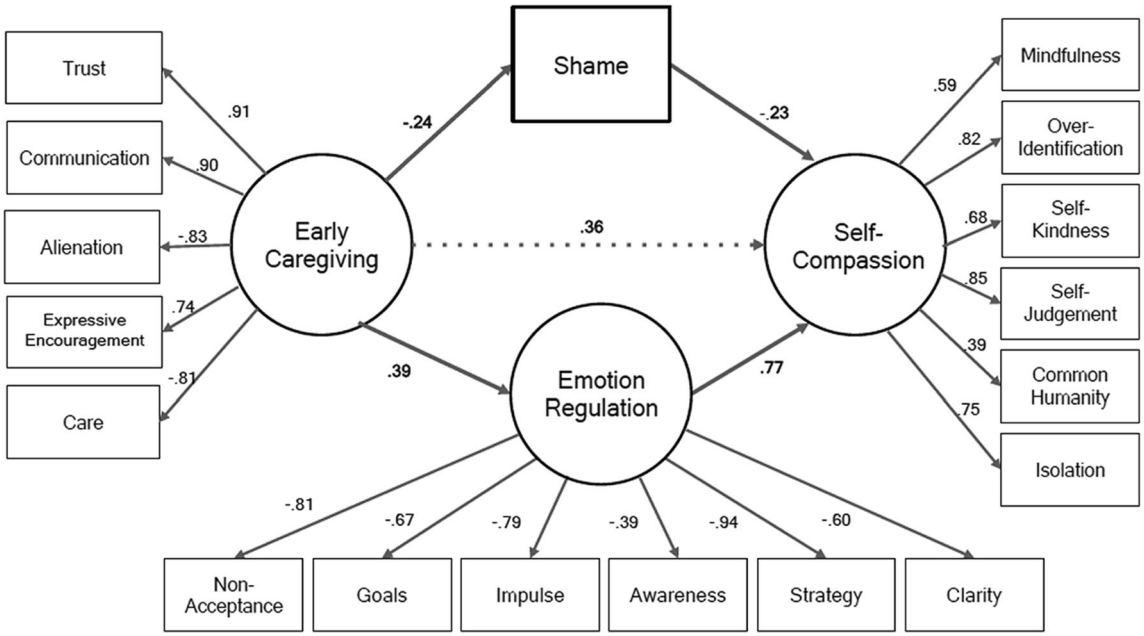

Fig. 2 Model of the relationship among early caregiving, emotion regulation, shame, and self-compassion with SEM results

figure, which included Trust (standardized coefficient = .91), Communication (standardized coefficient = .90), Alienation (standardized coefficient = −.83), Expressive Encouragement (standardized coefficient = .74), and Care (standardized coefficient = −.81). All path coefficients were statistically significant.

Emotion Regulation (F2) was a strong latent construct for emotion regulation ability, which included Nonacceptance

Table 1 Scales, number of participants, number of items, means, standard deviations, and reliability coefficients

Scales	N	Number of items	Mean	SD	Alpha
Early caregiving:					
Trust	233	10	38.76	8.52	.91
Communication	231	9	30.26	9.31	.92
Alienation	232	6	14.95	5.52	.81
Expressive encouragement	233	9	26.85	10.38	.92
Care	231	12	26.91	10.39	.93.
Emotion regulation:					
Nonaccepting	233	6	15.63	6.81	.91
Goals	233	5	15.64	5.41	.89
Impulse	233	6	13.10	5.89	.89
Awareness	233	6	14.56	5.18	.84
Strategy	233	8	19.70	7.83	.89
Clarity	233	5	12.16	4.73	.86
Shame:					
Shame	232	11	33.74	6.89	.70
Self-compassion:					
Mindfulness	233	4	13.90	3.60	.78
Overidentification	233	4	10.05	3.69	.73
Self-kindness	233	5	15.14	4.62	.82
Self-judgment	233	5	12.60	4.71	.81
Common humanity	233	4	13.95	3.67	.79
Isolation	233	4	10.57	4.08	.77

(standardized coefficient = −.81), Goals (standardized coefficient = −.67), Impulse (standardized coefficient = −.79), Strategy (standardized coefficient = −.94), and Clarity (standardized coefficient = −.60), and it was moderately and directly predicted by Awareness (standardized coefficient = −.39). All path coefficients were statistically significant.

Self-Compassion (F3) was a strong latent construct for self-compassionate attitude, which included Mindfulness (standardized coefficient = .59), Overidentification (standardized coefficient = .82), Self-Kindness (standardized coefficient = .68), Self-Judgment (standardized coefficient = .85), and Isolation (standardized coefficient = .75), and it was directly and moderately predicted by Common Humanity (standardized coefficient = .39). All path coefficients were statistically significant.

Direct Associations

The validity of the full structural model was assessed by testing the direct associations among Early Caregiving and Emotion Regulation, Emotion Regulation and Self-Compassion, Early Caregiving and Shame, and Shame and Self-Compassion. The model (Fig. 2) shows the results. Early Caregiving moderately predicted Emotion Regulation (standardized coefficient = .39); Emotion Regulation largely predicted Self-Compassion (standardized coefficient = .77); Early Caregiving moderately predicted Shame (standardized coefficient = −.24); and Shame moderately predicted Self-Compassion (standardized coefficient = −.23). All structural coefficients were statistically significant.

Indirect Associations

An indirect relationship between Early Caregiving and Self-Compassion, occurring through Emotion Regulation and Shame, was hypothesized. This indirect relationship was supported. Early Caregiving moderately and indirectly predicted Self-Compassion through Emotion Regulation and Shame (standardized coefficient = .36). The indirect correlation was statistically significant. Of the indirect association between Early Caregiving and Self-Compassion, 84% of the indirect association occurred through the factor of Emotion Regulation, while 16% of the indirect association occurred through the variable Shame.

Discussion

The purpose of this study was to examine the relationship between early attachment-based caregiving and self-compassion in early adulthood. Utilizing SEM, the mediating effects of shame and emotion regulation on this relationship were examined. The resulting model suggests that the relationship between early attachment-based caregiving and self-compassion is indirectly related through emotion regulation and, to a lesser extent, perception of self (i.e., shame). Overall, these findings are consistent with other studies suggesting the important role of attachment-based early caregiving in the development of emotional regulation, positive self, empathy, and other capacities related to psychological well-being (e.g., Mikulincer and Shaver 2016; Pepping et al. 2015; Schore 2017; Sroufe et al. 2000).

The finding that early attachment-based caregiving had a direct, moderate correlation with emotion regulation is consistent with many studies that have repeatedly found that securely attached individuals have an increased capacity for emotion regulation compared to those who are insecurely attached (e.g., Caldwell and Shaver 2012; Mikulincer and Shaver 2016; Schore 2017). According to Schore (2017) and others, early attuned caregiving regulates the immature infant's internal states which in turn fosters the development of the right brain hemisphere leading to better emotion and stress-regulating capacities with maturation (e.g., Schore and Schore 2008). Results further demonstrated that emotion regulation had a direct, large association with self-compassion. This finding is congruent with previous research studies suggesting that self-compassionate people have the capacity to maintain awareness of self and others in the present moment without judgment and without becoming overidentified with negative thoughts when confronting difficult situations (Neff 2003b; Yarnell and Neff 2013). Emotion regulation assists individuals in tolerating distress in difficult situations, as well as being aware of, understanding, and being accepting of all of one's emotions; further, it enables one to be better able to stay in the present moment and helps them to adapt their emotions to different situational contexts (e.g., Baer et al. 2006; Caldwell and Shaver 2012, 2015; Pepping et al. 2013, 2015). The finding that early attachment-based caregiving has a direct, moderate relationship with shame is consistent with previous studies indicating that insecurely attached individuals develop feelings of shame during childhood and adolescence (Muris et al. 2014), as well as adulthood (Chen et al. 2015; Wei et al. 2005). Poor-quality caregiving during the early years of life has been found to interfere with the development of individuals' positive view of self (e.g., Mikulincer and Shaver 2016; Schore 2017; Sroufe et al. 2000). When a caregiver consistently fails to respond to the child's attachment needs with attuned responsiveness and instead reacts with criticism, anger, or contempt, the result is shame (Tangney and Dearing 2002). By contrast, securely attached individuals are better able to realistically assess both the positive and more limited aspects of themselves, and they remain anchored in their belief that they are worthy despite their limitations (Mikulincer 1995; Mikulincer and Shaver 2004) which assists them in maintaining a consistently positive view of self, even during times of distress (Mikulincer 1998a).

Studies suggest that a child's basic sense of worth and value as a human being come from the early attuned responsiveness of caregivers to a child's intense emotional state; when ignored, a child feels unimportant, defective, and unworthy and develops a negative view of self (e.g., Grille 2014; Karen 1992). Further, the quality of the attachment relationship impacts the development and connectivity of the right brain hemisphere, affecting the development of an integrated, coherent sense of self (e.g., Schore 2017; Schore and Schore 2008).

Results also showed that shame had a direct, moderate correlation with self-compassion. The finding that higher levels of shame are related to lessened self-compassion is consistent with previous research indicating that individuals with higher levels of self-compassion are less likely to experience feelings of shame (Kelly and Tasca 2016; Steindl et al. 2018). Shame-prone individuals tend to judge their own self negatively and experience intense feelings of being defective and unworthy; further, when they experience these painful feelings, they have a heightened desire to disappear, and they tend to hide from others (Tangney and Dearing 2002). Thus, shame can lead to isolation which runs counter to the awareness that such painful feelings are common human experiences (Neff 2003b). Moreover, individuals experiencing shame in stressful situations tend to ruminate on negative aspects of themselves (Orth et al. 2006) or use avoidance of difficult feelings as a coping strategy (De Rubeis and Hollenstein 2009) instead of acknowledging their feelings with a nonjudgmental attitude. Shame also tends to result in a lessened degree of empathy (e.g., Grille 2014) which may negatively impact empathy toward self. By contrast, the ability to maintain awareness in the present moment with acceptance of one's self rather than criticism provides space for individuals to recognize that they can meet their difficult feelings with kindness even when things go wrong (Neff 2003b).

The finding that 84% of the indirect association of Early Caregiving with Self-Compassion occurred through the factor of Emotion Regulation (with only 16% of the indirect association occurring through the variable Shame) suggests that the primary route of transmission of early attachment-based caregiving on later self-compassion is through emotion regulation (and less so through one's perception of self as positive or negative). Studies suggest that insecure attachments impair emotion regulation processes such that individuals are more likely to suppress and/or lack clarity and understanding of their emotions, have less self-awareness, experience more negative emotions, engage in rumination (which can result in self-criticism and self-judgment), and have a diminished capacity for open, nonjudgmental awareness of self, others, and their internal/external worlds (e.g., Caldwell and Shaver 2012, 2013, 2015; Pepping et al. 2013). Finally, studies have suggested that self-criticism and the experience of shame may be influenced by one's emotion regulation capacity (e.g., Caldwell and Shaver 2013; Gupta et al. 2008).

In sum, the data suggest that the capacity for emotion regulation and positive view of self are related in part to early attachment-based caregiving (i.e., parental warmth sensitive-attunement, responsiveness) as indicated in previous research. This, in turn, is related to an infant's capacity for emotion regulation which assists them in remaining anchored in the present moment and being able to tolerate distress as they mature (Baer et al. 2006; Mikulincer et al. 1993; Sroufe 2005). Attachment security also provides individuals with a sense that they are worthy of being loved and cared for despite their limitations (Mikulincer and Shaver 2004), so that when faced with their own imperfections, they have the ability to stay in the present moment without becoming overwhelmed. They are better able to see imperfections as human limitations (Mikulincer and Shaver 2004) and acknowledge the similarities between themselves and others (Mikulincer et al. 1998). Further, they tend to be kind and caring toward themselves when things go wrong instead of being self-critical (Irons et al. 2006; Mikulincer and Shaver 2004). Thus, the tendency for self-kindness and self-care may develop best within an early attachment-based caregiving environment with a responsive and attuned caregiver (Shaver et al. 2017). Neurobiological evidence parallels these findings as it indicates that a secure parent–child attachment during early life is critical to the development of the right brain hemisphere where both emotion regulation processes and the origins of the self are housed (e.g., Schore 2017). These capacities, thus, may ultimately enable an individual to remain in the present moment in difficult situations, enhance one's capacity for self-care and kindness, and increase one's awareness that imperfections are part of being human.

Limitations and Future Directions

There are several limitations to this study. First, the study was conducted on a college sample, so these results may not generalize to broader populations. In addition, the present study did not address potential gender differences. Also, the attachment-based caregiving measures used in the current study did not differentiate between the four attachment classifications. Finally, since several self-report multiple-item scales were utilized in the current study (emphasizing participants' "perceptions of" parent behavior and emotional responses/reactions), a further limitation concerns common method bias, i.e., measurement error caused by the methodology (e.g., Podsakoff et al. 2003; Podsakoff et al. 2012). Measuring several constructs with the same method may result in a bias of the observed relationship due to the instrument and not the actual constructs themselves.

Future studies could utilize samples of more diverse populations, including adolescents and clinical samples. For example, studies examining the benefits of self-compassion interventions with clinical populations could assess whether the pathways to better mental health are through improved

emotion regulation and a more positive perception of self as these have been suggested as two key components underlying many mental health problems and psychological disorders (e.g., Mikulincer and Shaver 2012, 2016; Sroufe et al. 2000). In addition, future studies could address gender, early attachment-based caregiving, and self-compassion. Results from an earlier meta-analysis on self-compassion, for example, indicated that females have slightly lower levels of self-compassion compared to males (Yarnell et al. 2015). It may be that females' tendency to score lower than males on measures of self-related perceptions (e.g., Leadbeater et al. 1999) may result in lower levels of self-compassion when viewed within the context of the model utilized in the current study. Finally, there is evidence suggesting a difference in levels of self-compassion between individuals with insecure attachment substyles (e.g., Neff and Beretvas 2013; Neff and McGehee 2010) which could be further examined.

Author Contribution ND: designed and executed the study, wrote the paper, assisted with the writing of the results, and collaborated in editing the final manuscript. LK: collaborated in designing the study and the writing of the paper; and assisted with the editing of the final manuscript. MR: analyzed the data, collaborated in designing the study and writing the results, and editing the final manuscript. All authors approved the final version of the manuscript for submission.

Declarations

Ethical Approval This study was in compliance with the ethical standards of the Institutional Review Board (IRB) of California State University, San Bernardino, USA.

Informed Consent All participants provided informed consent prior to their inclusion in the study.

Conflict of Interest The authors declare that they have no conflict of interest.

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