



Chaotic-Enmeshment and Anxiety: The Mediating Role of Psychological Flexibility and Self-Compassion

M. Blake Berryhill¹ · Adrienne Hayes¹ · Kayla Lloyd²

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Abstract

With anxiety becoming the most prevalent mental health issue among the college student population, it is important to understand the factors that are associated with symptomology. This study aims to expand the research on the interrelationship between family functioning, intrapsychic factors, and anxiety. Guided by the circumplex model of family systems, the current study explores the link between college student ($N=500$) chaotically-enmeshed family functioning and anxiety, and whether psychological flexibility and self-compassion mediate this relationship. Multiple-sample latent structural equation modeling results revealed that higher levels of chaotically-enmeshed family functioning was significantly associated with lower levels of psychological flexibility and self-compassion levels, and that psychological flexibility and self-compassion mediated the relationship between chaotic-enmeshment and anxiety. Implications for family therapists who provide services to this population are discussed.

Keywords Chaotic-enmeshment · Anxiety · College students · Psychological flexibility · Self-compassion

Introduction

Anxiety is the leading mental health issue facing college students (Center for Collegiate Mental Health 2016). Indeed, anxiety is the most commonly diagnosed and treated mental illness, with 54% of students reporting overwhelming anxiety (American College Health Association 2015). If left untreated, young adults are at risk for lower academic performance, substance abuse, binge drinking, suicidal ideation, and the development of hypertension, chronic respiratory disease, and coronary heart disease (e.g., American College Health Association 2015; Cranford et al. 2009; Dimsdale

1997; Norton et al. 2008; Schmidt et al. 2007; Tully et al. 2013; Willgoss and Yohannes 2013).

Due to the ubiquitous nature of anxiety among the young adult population and its potential long term effects, it is important to examine the factors that influence anxiety symptomology within this population. Family relationships can have a profound effect on college student anxiety levels (e.g., Beiter et al. 2015), but little is known about the interrelationship between family functioning and intrapsychic factors that can potentially influence anxiety symptomology. Utilizing the circumplex model of family systems (Olson 2000), our specific aims are to test the relationship between chaotically-enmeshed family functioning and anxiety, and whether the intrapsychic factors of psychological flexibility and self-compassion mediate this relationship. Greater knowledge of these relationships may inform systemic family interventions for reducing anxiety levels within this population.

The Circumplex Model

Based on family systems theory, the circumplex model encompasses two main concepts for understanding family functioning: family cohesion and family flexibility (Olson 2000). Cohesion and flexibility are rated on a continuum,

✉ M. Blake Berryhill
bberryhill@ches.ua.edu

Adrienne Hayes
anhayes1@crimson.ua.edu

Kayla Lloyd
kal227@msstate.edu

¹ The University of Alabama, Box 870168, Tuscaloosa, AL 35401, USA

² School of Human Sciences, Mississippi State University, 120 Lloyd-Ricks-Watson Building Tracy Dr., Mississippi State, MS 39762, USA

from balanced to unbalanced. Healthy families are characterized by balanced levels of cohesion and flexibility, while unbalanced levels (i.e., very high or very low levels of cohesion/flexibility) likely lead to maladaptive family functioning (Olson 2011). Family cohesion refers to the level of emotional bonding between family members. Balanced cohesion is characterized by family members who are both independent from and connected to their families. Unbalanced cohesion is usually categorized as either disengagement or enmeshment (Olson 2000). Disengaged families display little involvement and extreme emotional separateness between individual family members. Often concerned with their own interests, disengaged family members have difficulty turning to one another for emotional support. On the other extreme, enmeshed families display severe emotional dependency, closeness, and over-involvement. Loyalty is demanded from each individual family member at the expense of developmentally appropriate individual separateness and autonomy. As the model's second concept, flexibility is the family's ability to balance stability and change during times of developmental and family transitions (Olson 2000). Balanced flexibility is defined by egalitarian leadership and a democratic approach to decision making. Thus, families are able to adjust their family rules and operations in order to adapt to stress and normal developmental change within the family system. Unbalanced levels of family flexibility are designated as either rigid or chaotic. Caregivers in rigid families are highly controlling, have strict family roles, and do not allow change. A chaotic family system exhibits limited leadership, often alternating family roles between caregivers and children (Olson 2000).

The circumplex model proposes four unbalanced relationship types: chaotically-disengaged (i.e., very high flexibility and very low cohesion), rigidly-disengaged (very low flexibility and very low cohesion), rigidly-enmeshed very low flexibility and very high cohesion, and chaotically-enmeshed (i.e., very high flexibility and very high cohesion; see Olson 2011). The focus of the current study is to explore dimensions of chaotically-enmeshed family functioning. There are two primary reasons for investigating this family type. First, recent research has emphasized the effects of over-involved parenting on college student outcomes. Parents who are enmeshed with their college-aged children do not grant them the autonomy support that is necessary during this developmental phase (Padilla-Walker and Nelson 2012). For example, parents who intervene in decision making and solve problems for their children limit opportunities to learn the skills needed to become self-reliant adults (Hastings et al. 2010; van Ingen et al. 2015). This kind of over-involvement is not only linked to hindering an adult-child's ability to become autonomous, but it is also linked to increased mental health issues, including anxiety, depression, perceived stress, as well as lower life satisfaction and self-acceptance

(e.g., LeMoyné and Buchanan 2011; Schiffrin et al. 2014; Segrin et al. 2012). Due to previous literature highlighting the influences of enmeshed family functioning, it is relevant to extend the literature by focusing on an unbalanced family type that included enmeshment. Second, the validation study of the Family Adaptability and Cohesion Evaluation Scale (FACES) IV, a scale that measures characteristics of the circumplex's model balanced and unbalanced family types (Olson 2011), showed that the chaotic subscale held more power statistically than the rigid subscale.

An unbalanced, chaotically-enmeshed family system encompasses individual family members who are emotionally over-involved. They have a strong sense of loyalty to the family, and do not possess many friendships or interests outside of the family (Olson 2000). There is also a lack of family leadership, and with roles shifting between members within the family system, discipline and decision making are erratic. Developmentally, the transition to college is marked by increased autonomy from one's family of origin, allowing for a more mutual child-caregiver relationship (Arnett 2001). The emotional over-involvement and ambiguous family roles that are characteristic of chaotically-enmeshed families make it difficult for family members to adapt to this normal developmental transition (Olson 2000).

Psychological Flexibility

Psychological flexibility, or "the ability to fully contact the present moment and the thoughts and feelings it contains without needless defense and, depending upon what the situation affords, persisting or changing in behavior in the pursuit of goals and values" (Hayes et al. 2006, p. 7), is a construct that is related to one's ability to cope with psychological distress (Kashdan and Rottenberg 2010). Greater psychological flexibility is related to lower anxiety levels (e.g., Kashdan and Rottenberg 2010; Panayiotou et al. 2014; Roemer et al. 2008). As individuals interact with their environment, flexibility allows individuals to employ regulation processes that increases ability to accept present private experiences (i.e., thoughts and feelings), adapt to situational demands, balance competing needs, and behaviorally take action based on one's valued direction (e.g., Hayes et al. 2006; Kashdan and Rottenberg 2010). Contrary, psychological inflexibility refers to the unwillingness to accept present thoughts and feelings, and exhibiting ineffective behaviors that maintain or increase one's struggles. Individuals who are psychologically inflexible are more likely to engage in ineffective strategies for responding to difficult thoughts and emotions, including negative judgement, rumination and dwelling, and guilt and shame (Silberstein et al. 2012).

Family relationships, especially parent-child relationships, can impact a child's psychological flexibility. Williams et al. (2012) study found that adolescents who

self-reported having cold, intrusive, controlling, and dictating parents were more likely to report lowered psychological flexibility later on in life. Consequently, parenting that was perceived by adolescents as warm and democratic was associated with higher psychological flexibility. Parenting flexibility has also been shown to moderate the relationship between parent distress and child distress (Moyer and Sandoz 2015). Theoretically, there may be a cascade effect by which maladaptive family functioning may spillover into intrapsychic domains (Masten et al. 2005). Caregivers who are likely to interact with their college-aged child in a chaotically-enmeshed manner may not support their child in gaining the necessary autonomy and skills to become a self-reliant adult. In response to their own thoughts and feelings during interpersonal family distress, individuals are likely to employ psychologically inflexible strategies (i.e., rumination, negative judgement of thoughts and feelings), which then may foster increased anxiety symptomatology.

Self-Compassion

Self-compassion refers to “being open to and moved by one’s own suffering, experiencing feelings of caring and kindness toward oneself, taking an understanding, non-judgmental attitude toward one’s inadequacies and failures, and recognizing that one’s own experience is part of the common human experience” (Neff 2003, p. 224). Adopting a self-compassionate stance provides a framework for relating to oneself during psychological distress through the components of self-kindness, common humanity, and mindfulness. Self-kindness is the extension of kindness towards oneself rather than harsh judgement and self-criticism. Common humanity recognizes one’s suffering as part of the human experience rather than isolating from humanity, and mindfulness refers to the willingness to turn towards one’s suffering with equanimity rather than over-identifying with difficult thoughts and feelings (Neff 2003). Self-compassion is associated with lowered anxiety levels (e.g., Bergen-Cico and Cheon 2014; Germer and Neff 2013; MacBeth and Gumley 2012; Raes 2010; Samaie and Farahani 2011). Specifically, self-compassion buffers anxiety levels through its positive effects on worry and brooding, a type of self-critical rumination about one’s distressful thoughts and feelings (e.g., Raes 2010). Instead of becoming trapped in a self-critical rumination cycle, self-compassion effectively copes with emotional distress through enhancing emotional intelligence, heightening positive affect, and reducing negative affect (Heffernan et al. 2010; Neff et al. 2007; Neff and Vonk 2009; Raes 2010). Instead of evaluating and modifying thoughts, emotional resilience is facilitated through the self-compassionate actions of accepting negative thoughts and emotions and extending a kind, patient, and encouraging tone towards oneself (Neff 2011; Neff and Dahm 2015).

Individuals from families with lower levels of conflict and more warmth tend to have higher levels of self-compassion (Kelly and Dupasquier 2016; Neff and McGehee 2010; Potter et al. 2014), suggesting that family relationships and experiences may act as a model for how individuals care for and support themselves. Pepping et al. (2015) found that for undergraduate college students, parental warmth was linked with higher self-compassion levels, while parental rejection and overprotection was associated with lower levels of self-compassion. Research also shows that self-compassion can potentially act as a mediator between parenting and college student mental health outcomes. Self-compassion, along with perceived emotional invalidation, acted as a partial mediator between negative parenting (e.g. indifference, over-control, and abuse) and adult-child mental health problems (Westphal et al. 2016). Interpersonal distress from chaotically-enmeshed family functioning may spillover into the formation of self-critical thoughts and rumination, which in turn increases anxiety levels.

The Present Study

This is the first known study to explore the relationship between dimensions of chaotic-enmeshment family functioning and college students’ anxiety levels, and whether this relationship is mediated by psychological flexibility and self-compassion. In summary, families with higher levels of chaotic-enmeshment may tend to over-identify with one another, resulting in caregivers not granting autonomy to their college-aged child (Olson and Gorall 2003). As children navigate the normal developmental transition of college and young adulthood, this reduced autonomy can compromise their ability to learn the psychological flexibility and self-compassion skills that may protect against anxiety symptomatology. In addition to testing these relationships, this study will also examine whether the relationship between chaotic-enmeshment, psychological flexibility, self-compassion, and anxiety are different for males and females. Studies are mixed regarding the relationship between family functioning and psychological outcomes and how that relationship is linked to gender. Family relationships have been shown to be more important for females (Fuligni and Masten 2010; Tsai et al. 2013). Additionally, females have significantly greater anxiety levels and lower self-compassion levels when compared to males (e.g., McLean et al. 2011; Soysa and Wilcomb 2015; Sun et al. 2016). Raudino et al. (2013) found that, although there was a statistically significant gender difference in the means of depression and anxiety, there were no statistically significant gender differences in the relationship between parent–child relationship quality and psychosocial adjustment in adulthood. The initial validation analyses of the psychological flexibility measure also

showed no differences between males and females (Bond et al. 2011).

Based on the circumplex model and previous research, we propose the following hypotheses: (1) Higher levels of chaotic-enmeshment will be directly associated with higher levels of anxiety; (2) Higher levels of chaotic-enmeshment will be associated with lower levels of psychological flexibility and self-compassion; (3) Lower levels of psychological flexibility and self-compassion will be associated with higher levels of anxiety; (4) Psychological flexibility and self-compassion will mediate the relationship between chaotic-enmeshment and anxiety; (5) The relationships of interest will be significantly stronger for females.

Methods

Participants

Utilizing convenience sampling methodology, the first author recruited students from undergraduate courses at a large public southern state university. The first author explained the study and asked participants to complete an

online survey. Of the approximately 600 students recruited to participate in the study, 500 college students volunteered to complete the online survey ($n = 392$ females; $n = 108$ males). The majority of participants reported being Caucasian (55%) and 18–19 years old (51%). See Table 1 for full descriptive information for the sample.

Measures

Chaotically-Enmeshed Family Functioning

Olson and Gorall (2006) developed the FACES-IV questionnaire to measure balanced and unbalanced types of family cohesion and flexibility. The FACES-IV measure uses six subscales to measure each family type: (1) balanced family cohesion; (2) balanced family flexibility; (3) family enmeshment; (4) family rigidity; (5) family chaos; (6) family disengagement. Confirmatory factor analysis from the FACES-IV reliability and validity testing revealed that all of the items adequately loaded on their respective scales, and that all subscales had high reliability (Olson 2011). However, the four unbalanced types were not tested. In order to capture the different dimensions of chaotically-enmeshed family

Table 1 Sample descriptives (means, standard deviations, and frequencies) of female ($n = 392$) and male ($n = 108$) college students

Variables	Females		Males		Total	
	<i>M or %</i>	(SD)	<i>M or %</i>	(SD)	<i>M or %</i>	(SD)
Chaotic-enmeshment items (range = 1–5)						
We never seem to get organized in our family	2.03	.89	2.23	.94	2.07	.91
It is hard to know who the leader is in our family	2.00	.89	2.31	.99	2.07	.92
Things do not get done in our family	2.17	.97	2.40	1.01	2.21	.98
It is unclear who is responsible for things (chores, activities) in our family	2.13	.97	2.37	1.10	2.18	1.00
There is no leadership in the family	2.34	1.15	2.57	1.01	2.39	1.12
Our family has a hard time keeping track of who does various household tasks	1.77	1.00	2.16	1.12	1.86	1.05
Our family feels hectic and disorganized	2.21	1.04	2.40	.983	2.26	1.03
We spend too much time together	2.57	1.18	2.69	1.18	2.60	1.18
Family members feel pressured to spend most free time together	2.13	1.02	2.19	1.13	2.15	1.05
Family members are too dependent on each other	2.03	1.00	2.31	1.10	2.10	1.03
Family members have little need for friends outside the family	2.44	1.10	2.59	1.03	2.48	1.08
We feel too connected to each other	1.82	1.01	2.02	1.07	1.87	1.03
We resent family members doing things outside the family	2.49	1.02	2.58	1.03	2.50	1.02
Family members feel guilty if they want to spend time away from the family	2.32	1.14	2.55	1.07	2.38	1.13
Psychological flexibility (range = 7–49)	35.14	10.63	34.34	10.80	34.99	10.60
Self-compassion (range = 26–130)	75.70	15.73	77.78	14.65	76.51	15.58
Anxiety (range = 20–77)	44.85	10.25	44.60	10.11	44.80	10.22
Ethnicity						
White	46%		51%		55%	
Other	54%		49%		45%	
Age						
18–19 years-old	55%		45%		51%	
20 years-old and Older	45%		55%		49%	

functioning, the variable was modeled as a latent variable with all of the items from the FACES-IV chaotic and enmeshment subscales (7-items each; 1 = *strongly disagree* to 5 = *strongly agree*). The fourteen-items used to create the latent variable are listed below, followed by their standardized factor loadings for males and females: (a) We never seem to get organized in our family ($\lambda = .50, \lambda = .46$), (b) It is hard to know who the leader is in our family ($\lambda = .59, \lambda = .54$), (c) Things do not get done in our family ($\lambda = .73, \lambda = .65$), (d) It is unclear who is responsible for things (chores, activities) in our family ($\lambda = .69, \lambda = .51$), (e) There is no leadership in the family ($\lambda = .69, \lambda = .65$), (f) Our family has a hard time keeping track of who does various household tasks ($\lambda = .64, \lambda = .54$), (g) Our family feels hectic and disorganized ($\lambda = .61, \lambda = .51$), (h) We spend too much time together ($\lambda = .52, \lambda = .43$), (i) Family members feel pressured to spend most free time together ($\lambda = .57, \lambda = .51$), (j) Family members are too dependent on each other ($\lambda = .67, \lambda = .54$), (k) Family members have little need for friends outside the family ($\lambda = .46, \lambda = .40$), (l) We feel too connected to each other ($\lambda = .53, \lambda = .36$), (m) We resent family members doing things outside the family ($\lambda = .71, \lambda = .66$), and (n) Family members feel guilty if they want to spend time away from the family ($\lambda = .66, \lambda = .54$).

Psychological Flexibility

The acceptance and action questionnaire-II (AAQ-II; Bond et al. 2011) measured students' reports of psychological flexibility. The AAQ-II was created as a follow-up to the AAQ (Hayes et al. 2004), the most widely used measure for psychological flexibility. The initial reliability of the AAQ-II revealed that its items were a stronger and more stable representation of psychological flexibility (Bond et al. 2011). The 7-item AAQ-II was designed to assess individuals' ability to accept difficult thoughts and their ability to pursue their goals despite difficult private experiences (Bond et al. 2011). The items scaled from 1 = *never true* to 7 = *always true*. Examples items included: "My painful memories prevent me from having a fulfilling life," and "Worries get in the way of my life." Items were coded and summed so that higher scores represented higher levels of general acceptance and psychological flexibility. Internal reliability for the sample in this study was adequate for both males and females ($\alpha = .94; \alpha = .95$, respectively).

Self-Compassion

The self-compassion scale (SCS; Neff 2003) is a 26-item questionnaire that utilizes six subscales to measure the three components associated with self-compassion (1 = *almost never* to 5 = *almost always*): self-kindness versus self-judgment, common humanity versus isolation, and mindfulness

versus over-identification. Example items included: "I'm disapproving and judgmental about my own flaws and inadequacies," "I try to be loving towards myself when I'm feeling emotional pain," "When I fail at something important to me I become consumed by feelings of inadequacy," and "When I fail at something important to me I try to keep things in perspective." Items were coded and summed so that higher scores represented higher levels of overall self-compassion. Internal reliability for this study was adequate for both males and females ($\alpha = .88; \alpha = .92$, respectively).

Anxiety

This study employed the State-Trait Anxiety Inventory (STAI), a commonly used and widely accepted measure of state and trait anxiety (Spielberger 1983). The current study used the 20-item trait questionnaire. Participants rated on a scale from 1 = *almost never* to 4 = *almost always* on how they generally feel. Example questions include: "I feel that difficulties are piling up so that I cannot overcome them," "I feel strained," and "I make decisions easily." Items were coded and summed so that higher scores indicated higher levels of anxiety. Inter-item reliability scores for both males and females are adequate ($\alpha = .88$ and $\alpha = .90$, respectively).

Data Analysis

Multiple-sample latent structural equation modeling (SEM) was used to test the hypotheses of the current study. Univariate analyses were tested using SPSS (IBM Corporation 2013), and bivariate and SEM analyses were performed with Mplus version 7.3 (Muthén and Muthén 1998–2011). Data did not violate values of skewness and kurtosis (i.e., 3.0 and 10.0); thus, full-information maximum likelihood estimation (FIML) was used as the estimator to handle missing data (Kline 2011).

Before running the SEM model, a confirmatory factor analysis (CFA) was first examined in order to verify that the items adequately fit together for the chaotically-enmeshed latent variable, and to examine model fit and the standardized factor loadings of each item. Items with a factor loading above .3 were included in the latent variable (Osborne and Costello 2009). While each factor loading met this criteria, each of the items from the FACES-IV chaotic and enmeshment subscales were also theoretically consistent with characteristics of a chaotically-enmeshed family as conceptualized by the circumplex model. Items measured family disorganization and lack of leadership within the family, as well as emotional dependence, extreme loyalty, and family resentment for individuals doing things outside of the family.

Next, measurement invariance was tested in order to determine whether the chaotic-enmeshment latent variable was assessed in a similar manner across male and female

participants (Kline 2011). A configural baseline model was initially run with the factor loadings (ULI identification), item intercepts, item residual variances, and factor variances freely estimated for each group. Next, in order to determine whether the factor loadings of each indicator were equal across males and females, all factor loadings were constrained to be equal with the factor variances fixed to 1 (UVI estimation). A Chi square difference test was run to compare the configural model and constrained model, with a significant test (i.e., worse model fit) indicating that some constraints should be relaxed in the model. Each subsequent step of invariance testing included the constraints from the previous step. Next, item intercept invariance (i.e., scalar invariance) was tested by constraining all item intercepts to be equal across groups. After examining the Chi square difference test and relaxing the suggested constraints until model fit did not significantly worsen, the next step was to test group differences of the residual variance of the indicators. Chi square difference tests were run and constraints relaxed until model fit did not significantly worsen. Finally, factor variance and factor mean invariance were conducted using the same process. All constraints from invariance testing were kept when testing the multiple sample SEM path analyses.

Two structural models were analyzed to test the study's hypotheses. The first model, with all constraints imposed from the invariance testing, was run to determine model fit. Before running the final structural model that tested the hypothesized relationships between chaotic-enmeshment, psychological flexibility, self-compassion, and anxiety, it was necessary to determine whether gender moderated the pathways of interest (i.e., hypothesis 5). Corresponding pathways were constrained to be equal between groups, one at a time, a Chi square difference test between the unconstrained and constrained models were analyzed to determine if model fit significantly worsened. A significant Chi square difference test indicated that the path coefficients were empirically different between groups. The pathways that were empirically different were unconstrained during the final structural model analyses; pathways that were not significantly different between groups were constrained to be equal in the final structural model.

Results

Bi-variate correlations showed significant relationships between chaotic-enmeshment and anxiety for males and females ($r = .32, p < .01$; $r = .24, p < .001$), chaotic-enmeshment and psychological flexibility ($r = -.42, p < .001$; $r = -.24, p < .001$), chaotic-enmeshment and self-compassion ($r = -.28, p < .01$; $r = -.13, p < .05$), psychological flexibility and anxiety ($r = -.69, p < .001$; $r = -.74, p < .01$),

and self-compassion and anxiety ($r = -.76, p < .001$; $r = -.71, p < .01$). The CFA measurement model indicated good model fit: $\chi^2(230) = 384.35, p < .001$; RMSEA = .05 (90% CI < 0.04 to < 0.06); CFI = .95; SRMR = 0.07. For invariance testing, the configural baseline model fit was adequate: $\chi^2(126) = 238.10$; RMSEA = .06 (90% CI < 0.05 to < 0.07); CFI = .95; SRMR = 0.05. The Chi square difference test for metric invariance did not show worse model fit: $\chi^2_{diff}(13) = 21.996, p > .05$. Similarly, the scalar invariant model did not show worse model fit: $\chi^2_{diff}(13) = .93, p > .05$. For item residual invariance, the fully constrained model had worse model fit: $\chi^2_{diff}(14) = 31.00, p < .05$. Two item residual constraints were relaxed (i.e., “We resent family members doing things outside the family”; “There is no leadership in the family”); this model did not significantly worsen: $\chi^2_{diff}(10) = 9.06, p > .05$. Finally, factor variance invariance and factor mean invariance testing showed that the fully constrained model did not have worse model fit: $\chi^2_{diff}(1) = 5.44, p > .05$; $\chi^2_{diff}(1) = 10.49, p > .05$. Because invariance testing showed significant differences between groups, separate path models were run for each group simultaneously during the structural path model analyses.

The hypothesized multiple-group structural path model, with the constraints imposed from invariance testing and all pathways unconstrained, indicated good model fit: $\chi^2(240) = 393.99, p < .001$; RMSEA = .05 (90% CI < 0.041 to < 0.059); CFI = .95; SRMR = 0.07. In order to examine group differences among pathway coefficients (i.e., Hypothesis 5), corresponding pathways between the main variables were constrained to be equal, one at a time, and Chi square difference tests were calculated. Results showed that constraining the pathways did not significantly worsen model fit for each pathway, suggesting that union transitions did not moderate the relationships of interest. For parsimony, all pathways were constrained to be equal between groups in the final structural model.

Using bootstrapping (2000) procedures, this study tested whether self-compassion was a mechanism by which chaotic-enmeshment relates to anxiety. Bootstrapping is recommended over other methods to test indirect effects, as it has higher power and reduces Type 1 error rate (MacKinnon et al. 2002, 2004). Moreover, confidence limits associated with bootstrapping analyses are important for understanding effects (MacKinnon et al. 2007). Due to the cross-sectional data used in this study, a true mediation relationship cannot be identified, as changing the arrangement of independent variables would have created an equivalent model. Because the temporal ordering of the proposed relationships cannot be established, our aim was to test whether there was an interrelationship between the variables of interest.

The final structural model had a good fit with the data: $\chi^2(245) = 399.77, p > .05$; RMSEA = .05 (90% CI < 0.04 to < 0.06); CFI = .95; SRMR = 0.07 (see Fig. 1 for

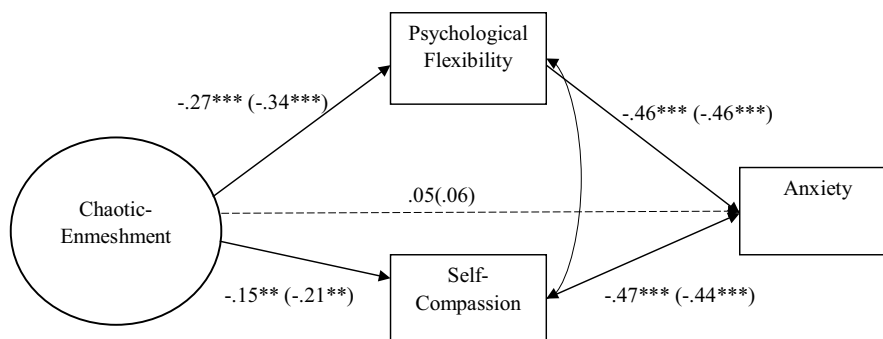


Fig. 1 Standardized path coefficients for female ($n=392$) and male ($n=108$) college students on the relationships between chaotic-enmeshment, psychological flexibility, self-compassion, and anxiety. Standardized path coefficients for females are outside of the parentheses and the standardized coefficients for males are inside of the parentheses. Psychological flexibility mediated the relationship between

chaotic-enmeshment and anxiety for both females ($\beta=.13$, $p<.001$, 95% CI .14–.29) and males ($\beta=.16$, $p<.001$, 95% CI .15–.30), and self-compassion mediated the relationship between chaotic-enmeshment and anxiety for both females ($\beta=.07$, $p<.001$, 95% CI .14–.29) and males ($\beta=.09$, $p<.001$, 95% CI .15–.30). ** $p<.01$. *** $p<.001$ (two-tailed)

unstandardized and standardized path coefficients). The unstandardized path coefficients from chaotic-enmeshment to psychological flexibility was significant ($b=-3.58$, $p<.001$), as was the path from chaotic-enmeshment to self-compassion ($b=-2.94$, $p<.01$). The paths from psychological flexibility to anxiety and from self-compassion to anxiety were also significant ($b=-.44$, $p<.001$; $b=-.31$, $p<.001$). Chaotic-enmeshment was not significantly associated with anxiety ($b=.62$, $p>.05$). Standardized bootstrapping results revealed that psychological flexibility fully mediated the relationship between chaotic-enmeshment and anxiety for both males ($\beta=.16$, $p<.001$, 95% CI .15–.30) and females ($\beta=.13$, $p<.001$, 95% CI .14–.29), and that self-compassion fully mediated the relationship between chaotic-enmeshment and anxiety for both males ($\beta=.09$, $p<.01$, 95% CI .15–.30) and females ($\beta=.07$, $p<.001$, 95% CI .14–.29). Indirect effects results can be interpreted as follows: a one standard deviation unit increase in chaotic-enmeshment is associated with a .16 standard deviation increase in male levels of anxiety via its prior effect on psychological flexibility.

Discussion

Anxiety is the most prevalent mental health concern among the college student population (Center for Collegiate Mental Health 2016), and as the number of students who suffer from anxiety symptomology continues to increase, it is important to determine the factors associated with this pervasive issue. The current study examined the link between chaotically-enmeshed family functioning and anxiety levels, and whether psychological flexibility and self-compassion mediated the relationship between these two variables. We hypothesized that higher levels of chaotic-enmeshment, reported by college students, would be directly associated

with higher levels of anxiety (i.e., Hypothesis 1), higher levels of chaotic-enmeshment would be associated with lower levels of psychological flexibility and self-compassion (i.e., Hypothesis 2), lower levels of psychological flexibility and self-compassion would be associated with higher levels of anxiety (i.e., Hypothesis 3), psychological flexibility and self-compassion would mediate the relationship between chaotic-enmeshment and anxiety (i.e., Hypothesis 4), and that the relationships of interest would be significantly stronger for females (i.e., Hypothesis 5). Although most hypotheses were supported, there was no direct association between chaotic-enmeshment and anxiety. Results also revealed no gender differences among the relationships of interest. This supports Raudino and colleagues' (2013) study, which found no statistically significant gender differences in the link between parent–child relationship quality and psychosocial adjustment.

Higher levels of chaotically-enmeshed family functioning was associated with lower levels of psychological flexibility and self-compassion. Although previous studies found a link between family functioning, psychological flexibility, and self-compassion (e.g., Williams et al. 2012; Pepping et al. 2015), this is the first known study to examine the relationship between chaotic-enmeshment and these variables. Chaotically-enmeshed family functioning was modeled as a latent variable with items from the FACES-IV chaos and enmeshment subscales (Olson and Gorall 2006). The lack of organization and leadership within the family system, combined with extreme emotional dependence and the generated guilt for doing things outside the family system, may spillover into intrapsychic processes, influencing levels of psychological flexibility and self-compassion.

Fundamentally, psychological flexibility and self-compassion are regulation strategies to effectively handle difficult thoughts and emotions, including those triggered

by one's family-of-origin. Developmentally, it is expected that college students become more autonomous from their family-of-origin (Arnett 2001). Stress generated by this normal developmental transition, like a child attending college, may exacerbate dysfunctional family interactional patterns, which in turn may prompt parents to exhibit helicopter parenting behavior (e.g., Olson and Gorall 2003; Schiffrin et al. 2014). Helicopter parenting, an overinvolved parenting style, is characterized by giving excessive advice, solving problems, and involvement in their child's emotional wellbeing to the point of enmeshment (Segrin et al. 2012). This limits autonomy-granting by parents, which inhibits opportunities for college-aged children to learn the necessary skills to become a self-reliant adult, such as the ability to effectively manage emotional and psychological distress. While future research needs to focus on the nuances of these relationships, children from chaotically-enmeshed families may be more at risk for utilizing non-self-compassionate and psychologically inflexible strategies to handle distress, such as self-criticism, negative judgements of one's thoughts and feelings, and rumination.

Consistent with previous studies, results found that lower psychological flexibility and self-compassion levels were associated with higher anxiety levels (e.g., Bergen-Cico and Cheon 2014; Germer and Neff 2013; Kashdan and Rottenberg 2010). Psychological flexibility and self-compassion also mediated the relationship between chaotic-enmeshment and anxiety. In other words, higher levels of college students' perceived family chaotic-enmeshment was associated with higher anxiety levels, through the process of lowering psychological flexibility and self-compassion level. Individuals with higher psychological flexibility are able to cope with difficult thoughts and feelings through mindfully accepting one's present thoughts and feelings, and then choosing to behave in one's valued direction (e.g., Hayes et al. 2012). Self-compassionate individuals are able to cope with psychological and emotional distress by mindfully accepting their thoughts and emotions, and extending a warm and encouraging tone toward themselves (Neff and Dahm 2015).

A cascade effect may occur by which distress within the family system may spillover into one's ability to cope with heightened emotional and psychological distress. Due to the over-involved, dependent, and disorganized nature of chaotically-enmeshed families, parents may have difficulty supporting autonomy, which could limit the child's ability to develop the skills to navigate this developmental period (e.g., Hastings et al. 2010; Padilla-Walker and Nelson 2012). Hovering and intrusive behaviors that promote reliance on parents restricts college-students from developing the necessary skills to cope with challenging and difficult situations (Reed et al. 2016). Moreover, this kind of over-parenting is related to a critical family environment, where parents perceive that their children do not possess

the problem-solving and decision-making capabilities to become a self-reliant adult (Segrin et al. 2015). This unbalanced family environment can spillover into self-criticism and psychologically inflexible methods for managing this emotional distress (i.e., rumination, judgement of thoughts and feelings). The inability to cope with these difficulties may, in turn, raise anxiety levels. When considering the level of anxiety symptomatology, it is relevant to consider not only the intrapsychic processes that are contributing to the symptomatology, but also the extent to which college students' relationship with their family is maintaining symptoms and affecting one's ability to cope with anxiety.

Clinical Implications

Given that college student chaotically-enmeshed family functioning was related to higher anxiety levels through the processes of psychological flexibility and self-compassion, we offer several suggestions for family therapists when working with this population. A central hypothesis of the circumplex model is that balanced couples and families function more adequately than unbalanced families (Olson and Gorall 2003). Balanced families manage stress more effectively than unbalanced types because they are able to adapt to normative developmental stressors, such as a child attending college. Individuals from family environments that encourage autonomy and personal growth are able to develop increased self-efficacy (Reed et al. 2016). Unbalanced levels of family functioning are maintained through dysfunctional interactional patterns; thus, interventions should be designed to promote more functional ways of communicating (Olson and Gorall 2003). For example, over-involved parenting is related to a critical family environment, where parents believe that the college-aged child cannot effectively make decisions and navigate the stressors of becoming a self-reliant adult (Segrin et al. 2015). As a result, parents problem-solve, monitor, and attempt to manage the child's emotions (Segrin et al. 2012). Therapists can help the family negotiate the stress of this transition by having each family member effectively communicate their needs, and by encouraging each family member to actively listen and respond in an empathic manner (Johnston et al. 2014). Creating new interactional patterns may allow the college-aged child to develop the autonomy and self-efficacy that is consistent with this developmental period. Additionally, these new positive interactions can assist all family members in adjusting to this new balance of separateness and togetherness.

If working with the entire family system is not a viable option, family therapists can utilize acceptance and commitment therapy (ACT) with college students. ACT is mindfulness-based therapy that enhances psychological flexibility through the processes of: (1) mindfulness and acceptance;

(2) commitment and behavior change (Hayes et al. 2006). Instead of over-identifying with personal distress, mindfulness and acceptance interventions promote client openness and acceptance of their present difficult thoughts and feelings. Creating this neutral stance towards thoughts and emotions allows an individual to choose values-guided behavior. Values are qualities that guide behavior (Hayes et al. 2006). For example, one may have a value of “supporting.” Supporting others is something that can never be fully achieved, yet the opportunity to display support behaviors is always present (Ciarrochi et al. 2010). Individuals must commit to acting on their values on a moment-by-moment basis. Thus, the specific supporting behavior exhibited will likely be different in every situation.

Research shows that ACT can also enhance self-compassion (Yadavaia et al. 2014). Theoretically, there are parallels between self-compassion and the ACT processes used to increase psychological flexibility (Yadavaia et al. 2014). Similarities exist between self-kindness and the ACT concept of acceptance. Acceptance refers to accepting one’s painful experiences (emotions, thoughts, etc.), instead of evaluating one’s experience as wrong or bad. Being open to one’s painful experiences allows for the extension of self-kindness towards oneself. Self-compassion and ACT also both highlight mindfulness processes. By becoming more aware of difficult thoughts and emotions, clients are able to disentangle from the influence of harsh, negative, and judgmental thoughts (Tirsch et al. 2014). As a result, individuals have a more realistic perspective of their experience, which provides flexibility in how they respond to themselves and others. Instead of over-identifying with difficult thoughts and feelings during negative family interactions, clients are more likely to extend kindness toward themselves and choose more effective, values-consistent behavior.

Enhancing mindfulness and acceptance skills can be used to cope with negative thoughts and feelings triggered by family interactions, and implementing values-based behavior allows individuals to react in a manner that does not maintain the negative interactional cycle. For example, negative family interactions can generate self-criticism, self-blame, and self-judgement. Rather than over-identifying with thoughts and feelings that translate into maladaptive behavioral responses that continue the negative interactional patterns, clients can instead respond to these difficult internal experiences with mindfulness and self-compassion. As a result, clients then are able to react to their family using adaptive, value-guided behaviors. Through the ACT processes, college-aged clients may be able to effectively communicate their need to be autonomous, while at the same time not engage the behaviors that continue the family’s negative interactional patterns.

In the context of a family therapy session, ACT processes can be used to neutralize dysfunctional communication

patterns and create more positive interactions. Increasing psychological flexibility within each family member creates a broader repertoire of behavioral responses that may be applied to de-escalate negative patterns and establish more positive communication. Family members can utilize mindfulness skills to identify the triggers and subsequent thoughts, emotions, and unworkable behaviors that guide the family’s negative interactional cycle. Acceptance processes can be used to not only accept difficult thoughts and emotions during negative communication, but to also observe the impulses to act on the previous maladaptive behaviors that may maintain and escalate the cycle (McKay et al. 2012). In the midst of teaching mindfulness and acceptance skills, family members can also develop self-compassionate self-regulation strategies in the midst of maladaptive interactions. Commitment and behavior change processes can clarify each family member’s values, specifying how each individual wants to communicate with other family members during this developmental transition. Additionally, these processes can emphasize follow-through on exhibiting values-based behavior during negative interactions, even when family members experience painful emotions and the urge to behave in a negative manner. Altering the family’s interactional patterns will foster more balanced cohesion and flexibility, thus promoting a healthier balance of autonomy and connection for the college-aged child.

Limitations

The findings of the current study should be considered in light of several limitations. First, results are correlational and causation cannot be inferred. Second, the cross-sectional design limits the ability to determine the order of relationships between variables. In order to determine the temporal ordering of the relationships between chaotically-enmeshed family functioning, psychological flexibility, self-compassion, and anxiety, future studies should focus on a longitudinal design. Third, the homogenous sample (i.e., female, non-clinical) limits generalizability. While results found no gender differences among the pathways, it is important to note that the sample included mostly female participants. Participant values on the STAI were also within the normal range compared to a diagnostic sample (Bieling et al. 1998). Future research should examine gender differences with a more comparable sample, and in more diverse and clinically distressed populations. Fourth, research focused on self-report measures, which may increase bias. Finally, because additional covariate factors may also influence the relationship between variables, future studies should examine additional variables that could explain the variance in college-students’ anxiety levels. Future research should also explore the link between the other unbalanced dimensions of the circumplex model and college student psychological

functioning (i.e., chaotically-disengaged, rigidly-disengaged, and rigidly-enmeshed).

Despite these limitations, this study is among the first to explore the interrelationship between chaotically-enmeshed family functioning and anxiety, and whether college student psychological flexibility and self-compassion mediates this relationship. The current study extends previous literature that only examined over-involved and enmeshed parenting (i.e., Padilla-Walker and Nelson 2012). Finally, another strength of the current study is that we measured the chaotically-enmeshed unbalanced family type as a latent variable. This allowed measurement of chaotic-enmeshment using multiple indicators of both very high levels of cohesion and flexibility. In conclusion, the transition to college constitutes a period of change for the family system. During this time of normative stress, parent–child relationships play a significant role in helping students navigate and adapt to this developmental period. Chaotically-enmeshed families place children at risk for being inadequately prepared and unskilled to handle the challenges associated with becoming a young adult. This study illustrated that increases in chaotic-enmeshment was related to lower psychological flexibility and self-compassion, and that psychological flexibility and self-compassion mediated the relationship between chaotic-enmeshment and anxiety. The interrelationship between these constructs may provide useful information for family therapists who are treating the growing number of college students with anxiety.

Compliance with Ethical Standards

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

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