A Pilot Study on Childhood Trauma and Love Addiction: Exploring the Mediation of Unbalanced Family Functioning

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Objective: The general aim of the present study was the exploration of the relationships between childhood trauma subdimensions (physical abuse, emotional abuse, sexual abuse, physical neglect, and emotional neglect), unbalanced family functioning patterns (disengaged, enmeshed, rigid, and chaotic), and love addiction. *Method*: A sample of 910 individuals (76.6% female; $M_{age} = 30$ years, $SD = 10.55$) engaged in a romantic relationship participated in the research and completed the Love Addiction Inventory-Short Form, Family Adaptability and Cohesion Evaluation Scales-IV, and Childhood Trauma Questionnaire-Short Form. *Results:* Among the childhood trauma subdimensions, emotional and physical abuse showed significant and positive associations with love addiction levels. Furthermore, the path analysis showed that unbalanced family functioning patterns parallelly mediated the relationship between emotional (enmeshed, rigid, and chaotic patterns) and physical abuse (chaotic patterns) and love addiction. Gender as a covariate was controlled for. *Conclusions:* The present study offers insight into the mechanisms by which specific forms of childhood trauma could lead to love addiction in adulthood. The findings offer valuable insights for developing customized interventions when working with individuals struggling with love addiction, as well as for implementing effective preventive activities for the condition.

Clinical Impact Statement
The findings from the present study have the potential to enhance the existing literature on love addiction by providing insights into specific antecedents of this complex condition. More specifically, the results highlight the role of emotional and physical abuse, as well as enmeshed, rigid, and chaotic family functioning patterns. These factors can be effectively assessed and addressed through targeted clinical practice.

Introduction

Romantic love comprises a strong and positive emotional state and attraction towards another person and plays a significant evolutionary role for the human species (Fisher, 2004, 2006). However, for a small minority of individuals, it can turn into an addiction (Costa et al., 2021). Love addiction has been viewed as one of many behavioral addictions, a heterogeneous group of disorders in which the object of dependence is not a psychoactive substance but something behaviorally-based (Earp et al., 2017). These types of addictions share psychopathological characteristics common to substance dependence (Robbins & Clark, 2015; Salicetia, 2015). Love addiction comprises maladaptive, pervasive and excessive interest towards romantic partners, resulting in a lack of control, as well as a

reduction in social, professional and leisure activities (Fisher, 2014, 2016; Redcay & Simonetti, 2018; Sussman, 2010).

The negative consequences (e.g., dysfunctional impact on everyday life activities, the high level of suffering, and its pervasive nature) are the elements that allow differentiation of this condition from the regular "falling in love'" experience (Sanches & Jhon, 2019; Sussman, 2010). Indeed, the moment of transition from healthy love to pathological love is when desire becomes a need, suffering overtakes pleasure, and the love-related behaviors continue despite the negative consequences (Reynaud et al., 2010). Among the main characteristics of love addiction, it is possible to identify the direction of thoughts, feelings and behaviors towards the love object (salience), the growing need for time spent together with the loved one, or time spent thinking about them (tolerance), trying to cope with emotional distress by thinking about or spending time with a loved one (mood modification), difficulty reducing the amount of time spent with the love object (relapse), psychological and physical withdrawal symptoms when not with the loved one (withdrawal), and interference with daily activities such as work and/or education, friendships, activities, and hobbies (conflict) (Costa et al., 2021; Griffiths, 2005).

Love addiction can lead to a lower quality of life given the negative social, security or legal consequences (Sussman, 2010) and has also been associated with worse psychological outcomes, such as alexithymia and depression (Speranza et al., 2004). Furthermore, individuals involved in pathological love have lower levels of self-esteem and self-directedness than individuals with healthy relationships (Acevedo & Aron, 2009; Gori, Russo, & Topino, 2023; Sophia et al., 2009). Given the numerous negative consequences and impact that this condition has on the lives of individuals who suffer from it, the study of the risk factors involved in the onset of love addiction is of considerable importance. Consequently, the present study examined the variables that may contribute to love addiction, and focused on the role of childhood trauma and unbalanced family functioning.

Childhood trauma and love addiction

Trauma is defined as exposure to actual or threatened death, serious injury, or sexual violence, and can be experienced directly or by witnessing such an event. This experience can occur during a single episode (acute), or because of repeated episodes over time (chronic). Traumatic events include abuse, violence, neglect, loss, accidents, disasters, war, and other emotionally harmful experiences (American Psychiatric Association, 2013, 2022). When trauma occurs during childhood, it may lead to excessive levels of stress which can influence the subsequent development of the individual from a neurological perspective (e.g., alterations in brain development with effects linked to greater vulnerability to addiction; Gordon [2002]; Creeden [2004]), an interpersonal perspective (e.g., compromised family functioning; Dong et al. [2021]), and a psychological perspective (e.g., experiencing early relationships as rejecting or insecure leading to changes in a child's self-perception, trust in others, and perception of the outside world; Dye [2018]; Terr [2003]).

The association of childhood trauma with psychopathology has been documented in many previous studies, including those examining addictive behaviors (Croft et al., 2019; Hopfinger et al., 2016; Moustafa et al., 2021; Popovic et al., 2019). More specifically, a specific link has also been shown between childhood trauma and different forms of addiction (Caretti et al., 2018; Gori et al., 2023a, 2023b), encompassing both addictions to substances such as opiate, marijuana, cocaine and alcohol (Garami et al., 2019; Scheidell et al., 2018; Moustafa et al., 2021) and addictions to behaviors, such as gaming, internet use, and gambling (Hodgins et al., 2010; Imperatori et al., 2017; Lu et al., 2020; Shi et al., 2020). Associations in the literature also seem to emerge with forms of pathological love. Trauma survivors suffer from sensitivity to rejection, abandonment issues, unstable relationships, and difficulty with trust issues, and these can lead to the establishment of a relational addiction (Briere & Jordan, 2009; Kane & Bornestein, 2018; Smith et al., 2023).

The mediation of unbalanced family functioning

It has consistently been shown that traumatic childhood experiences can have negative effects at an interpersonal level (Davis & Petretic-Jackson, 2000), including the family context both in terms of the family of origin and the families that adults create for themselves (e.g., Busby et al., 2011;

Cunningham & Renk, 2018, Dong et al., 2021). In fact, exposure to childhood trauma experiences is related to compromised family functioning and lower levels of family resilience (Dong et al., 2021; Schneider et al., 2019). Furthermore, there is evidence that family functioning is, in turn, a central element in vulnerability to various forms of addiction, including love addiction (Chmielewska et al., 2012; Salani et al., 2022). Moreover, families characterized by weak emotional bonds and incapacity to change their power structure, role relationships, and relationship rules in response to situational and developmental stress are strong risk factors for the onset of addiction (Tafa & Baiocco, 2009).

Among the different models of family functioning, of particular interest is Olson's (2000) circumplex model, which describes family functioning comprising two balanced patterns (i.e., *cohesion*, with individuals that can be both independent from and connected to their families, and *flexibility*, with a functional family system that goes through both stability and change when appropriate), and four unbalanced patterns: (1) *enmeshed*, characterized by a lot of consensus within the family and little independence; (2) *disengaged,* characterized by low attachment between the family members or limited commitment to the family; (3) *chaotic*, characterized by roles within the family that are unclear and often shift from individual to individual; and (4) *rigid*, characterized by high levels of control, as well as strictly defined and non-changeable roles. This model has demonstrated its utility in research in the field of addictions. For example, significant associations have been reported between the dimensions of the model and problematic online gambling (Topino, Gori, & Cacioppo, 2021), compulsive online shopping (Topino, Cacioppo, & Gori, 2022), problematic smartphone use (Mangialavori et al., 2021), and substance use (Wagner et al., 2010). However, to the best of the present authors' knowledge, Olson's (2000) circumflex model has not yet been applied to the study of love addiction in association with childhood trauma.

The present study

Given the aforementioned literature, the present study investigated the relationships between factors that may influence the levels of love addiction, with a specific focus on childhood trauma and the unbalanced family functioning patterns as conceptualized in Olson's (2000) circumflex model. To

achieve this goal, the study firstly explored the relationship between the childhood trauma subdimensions (physical abuse, emotional abuse, sexual abuse, physical neglect, and emotional neglect), unbalanced family functioning patterns (disengaged, enmeshed, rigid, and chaotic) (Olson, 2000), and love addiction. Then, considering only the dimensions showing a significant total effect, a path analysis approach was adopted to implement a parallel mediation model, hypothesizing that: (i) childhood trauma subdimensions would be significantly and positively related to love addiction (H_1); (ii) childhood trauma subdimensions would be significantly and positively associated with unbalanced family functioning patterns (H_2); (iii) unbalanced family functioning patterns would be significantly and positively related to love addiction (H_3); and (iv) unbalanced family functioning patterns would significantly mediate the relationship between childhood trauma and love addiction (H_4). Finally, since previous research has shown the influence of gender in the perception of the family context (e.g., García-Mendoza et al., 2022), the role of gender as a covariate was explored in the model.

Method

Participants and procedure

The sample comprised 910 individuals engaged in a romantic relationship (76.6% female; 23.4% male). Their mean age was 30 years ($SD = 10.55$). Most of them declared to have a high school diploma (38.4%), university degree (30.2%) or a master's degree (20.2%), while small percentages reported a middle school diploma (4.2%) or post-lauream specialization (7.0%). In relation to occupational status, participants were predominantly employees (30.9%), students (28.7%), working students (18.9%) or self-employed (5.5%). The inclusion criteria were being (i) at least 18 years old; and (ii) involved in a romantic relationship at the time of data collection. Participants were recruited using a snowball sampling method, asking the contacts of the researchers to complete the survey and then to publicize the study to others. More specifically, the link was disseminated through social networks and via instant messaging services (e.g., *WhatsApp*). Participation was voluntary, and included the completion of an online survey hosted on the *Google Forms* platform, after receiving

information about the general aim of the study. All the participants provided electronic informed consent. The protocol of the study was approved by the first author's institutional Ethical Committee.

Measures

Love Addiction Inventory–Short Form (LAI–SF): The LAI–SF (Costa et al., 2021) is a self-report scale comprising six items, which assesses the risk of love addiction. Items (e.g., "*How often do you neglect time studying or working to be in the relationship with your partner?*") and conceptualized in line with the components model of behavioral addiction (Griffiths, 2005). Responses are rated on a five-point Likert scale from 1 (*Never*) to 5 (*Very often*). In the present study, the total score of the Italian (i.e., original) version was used and showed good internal consistency (α=0.73).

Family Adaptability and Cohesion Evaluation Scales–IV (FACES-IV). The FACES–IV (Olson, 2011; Italian version: Baiocco et al., 2013) is a self-report scale comprising 42 items, which was used to assess family functioning as conceptualized by the Circumplex Model of Marital and Family Systems (Olson, 2011). Responses are rated on a five-point Likert scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). While completing the questions, participants chose whether to report on their current family or family of origin, based on the one they perceived as most salient at the time of responding. The FACES-IV assesses six dimensions: two balanced family functioning patterns (cohesion [e.g., "*Family members are involved in each other's lives*"], and flexibility [e.g., "*Our family tries new ways of dealing with problems*"]), and four unbalanced family functioning patterns (disengaged [e.g., "*We get along better with people outside our family than inside*"], enmeshed [e.g., "*We spend too much time together*"], chaotic [e.g., "*We never seem to get organized in our family*"] and rigid [e.g., "*There are strict consequences for breaking the rules in our family*"]). In the present study, the Italian version was used and showed satisfactory internal consistency (cohesion, α=.86; flexibility, α=.77; enmeshed, α=.71; disengaged, α=.73; chaotic, α=.64; rigid α=.0.72).

Childhood Trauma Questionnaire–Short Form (CTQ-SF). The CTQ–SF (Bernstein et al., 2003; Italian version: Petrone et al., 2012; Sacchi et al., 2018) is a self-report scale comprising 28 items, which was used to assess trauma experiences while growing up. Responses are rated on a five-point

Likert scale from 1 (*never true*) to 5 (*very often true*). The CTQ-SF assesses five subscales: physical abuse (e.g., *"Hit badly enough to be noticed"*), emotional abuse (e.g., *"Parents wished was never born"*), sexual abuse (e.g., *"Was touched sexually"*), physical neglect (e.g., *"Not enough to eat"*), and emotional neglect (e.g., *"Family was source of strength"* – Reversed item). In the present study, the Italian version was used and showed satisfactory internal consistency (physical abuse, α=.81; emotional abuse, α=.85; sexual abuse, α=.91; physical neglect, α=.60; emotional neglect, α=.89).

Data analysis

All the statistical analyses were performed using SPSS (v. 21.0; IBM, New York, USA) and AMOS (v. 24.0; IBM, New York, USA) for Windows. First, the independent samples *t*-tests, a series of multivariate analyses of variance (MANOVAs), and Pearson correlation were performed as preliminary analyses. The independent samples *t*-tests were used to explore differences in the levels of love addiction based on gender. The MANOVAs were performed to examine gender differences in the levels of childhood trauma (physical abuse, emotional abuse, sexual abuse, physical neglect, emotional neglect) or unbalanced family functioning (disengaged, enmeshed, chaotic, and rigid patterns). Separate analyses of variance (ANOVAs) were conducted to support the interpretation of the mean scores by setting a Bonferroni-adjusted level of significance (p<.01 for childhood trauma dimensions and p<.0125 for family functioning patterns) to reduce the risk of making type I errors (Bland & Altman, 1995). Pearson correlation analysis was performed to explore the associations among the variables. Only the family functioning patterns and childhood trauma subdimensions showing significant correlations with love addiction at the p<.01 level were considered for subsequent analyses, where, gender was controlled for as a possible covariate for the variables for which males and females presented significantly different mean scores.

A path analysis approach (Bollen & Long, 1993) was used to implement a parallel mediation model, exploring the mediation of family functioning in the relationship between childhood trauma and love addiction. The statistical fit of the model was assessed considering the following goodness-of-fit indicators: the Chi-square (χ^2) model, indicating a good model fit when p>0.05 (Hooper et al.,

2008); the Goodness of Fit Index (GFI), Normed-Fit Index (NFI), and Comparative Fit Index (CFI), indicating a reasonable fit for values above .90 (Kline, 2015; Hu & Bentler, 1999; Byrne, 1994); the standardized root mean square residual (SRMR), indicating a reasonable fit for values less than .08 (Fabrigar et al., 1999). The coefficient of determination (R^2) was also investigated to further examine the interpretation of the emerging model, by considering Cohen's thresholds: $R^2 < .02$ = very weak effect; $.02–.12$ = weak effect; $.13–.26$ = moderate effect; $R^2 > .26$ = substantial effect (Cohen, 1988). Finally, to test the statistical stability of the models, the bootstrapping technique was performed (5000 bootstrapped samples with 95% percentile bootstrapping confidence intervals) (Preacher & Hayes, 2008).

Results

Preliminary analyses

The independent samples *t*-test did not indicate significant differences in the levels of love addiction based on gender: $t(908) = 0.680$, $p = .497$. In the MANOVAs and ANOVAs, while no statistically significant differences were found in childhood trauma, gender differences were found in the levels of unbalanced family functioning: $F(4, 905) = 4.549$, $p < 0.001$; Wilk's $\Lambda = 0.980$. More specifically, males ($M = 17.732$; $SD = 4.520$) had higher scores of rigid patterns than females ($M = 16.310$; $SD = 4.739$): $F(1, 908) = 15.017$; $p < .001$.

As shown by Pearson correlation (Table 1), love addiction showed significant associations with some family functioning patterns and child abuse subdimensions. Focusing on the strongest correlations ($p<.01$), love addiction was significantly and positively associated with disengaged ($r = .128, p<.01$), enmeshed ($r = .231, p<.01$), rigid ($r = .199, p<.01$), and chaotic ($r = .205, p<.01$) family functioning patterns. Furthermore, love addiction was significantly and positively associated with the childhood trauma subdimensions of emotional abuse ($r = .191$, p<.01) and physical abuse ($r = .173$, p<.01).

Table 1 here

Path analysis

Based on the previous preliminary analysis, path analysis was implemented by testing the mediation of disengaged, enmeshed, rigid, and chaotic family functioning patterns in the relationship between emotional and physical abuse, and love addiction. Furthermore, gender was controlled for as a covariate of the rigid family functioning pattern (see part A in Figure 1). The parallel mediation model showed a good fit to the data: χ^2= 40,671 (p<.001), GFI=.989, NFI=.962, CFI=.969, SRMR=.035.

Figure 1 here

More specifically, emotional and physical abuse showed a significant positive total effect in their relationship with love addiction (β=.14, p<.001 and β=.10, p<.05, respectively; **H₁**). Emotional abuse was also significantly and positively related to disengaged (β=.34, p<.001), enmeshed (β=.19, p<.001), rigid (β=.09, p<.05), and chaotic (β=.13, p<.01) family functioning patterns (**H₂**). Physical abuse showed a significant and positive association with chaotic (β=.14, p<.05) family functioning patterns, but not with the disengaged (β=.03, p=.544), enmeshed (β=.01, p=.821) and rigid (β=.07, p=.115) family functioning patterns (**H₂**). Moreover, significant and positive relationships were found between enmeshed, rigid, and chaotic family functioning patterns and love addiction (β=.12, p<.01, β=.11, p<.01, and β=.13, p<.001, respectively; **H₃**), while the association between disengagement and love addiction was non-significant (β=-.01, p=.734; **H₃**).

With regards the gender covariate, being female was associated with lower scores on rigid family functioning (β=-.09, p<.01). When the unbalanced family functioning patterns and the effect of gender were included in the model, the mediation effects were significant, whereas the direct effect was significant for emotional abuse only (β=.08, p<.05; **H₄**), and non-significant for physical abuse (β=.11, p=.077; **H₄**). The resulting parallel mediation model (see Figure 1, part B) explained 13% of the total variance (R^2>.12 = moderate effect). Finally, the percentile bootstrap procedure confirmed the statistical stability of the model (see Table 2).

Table 2 here

Discussion

The significance of investigating love addiction lies in its relevant negative effects and the considerable suffering it inflicts on those affected. Indeed, previous literature has consistently associated love addiction with obsession, compulsive behaviors, anxiety, and adverse life outcomes (Reynaud et al., 2010; Costa et al., 2021; Sussman, 2010). Given these data and the consequent need to further investigate this phenomenon, the present study examined the relationship between some risk factors for love addiction, by specifically focusing on the role of childhood trauma and unbalanced family functioning.

The preliminary analyses showed significant differences based on gender concerning the perception of rigid family functioning, which was higher among males than among females, echoing existing scientific evidence (e.g., Laghi et al., 2016). Furthermore, sexual abuse, emotional neglect, and physical neglect were not significantly associated with love addiction. Previous research has shown that these forms of childhood trauma are associated with increased inflammatory responses to psychosocial stress (Schreier et al., 2020), and fear and avoidance of social situations (Müller et al., 2019), as well as isolation and loneliness (Steine et al., 2020) in adulthood. Therefore, it is plausible that sexual abuse, emotional neglect, and physical neglect may have a stronger connection with relational issues characterized by avoidance rather than dependence. These findings warrant additional future research, and a more substantial body of evidence is needed to validate this hypothesis.

On the other hand, emotional and physical abuse had a significant association with love addiction. Consistently, in the path analysis model, significant positive total effects in the relationship between emotional/physical abuse and love addiction were found (confirming **H₁**). This is in line with existing evidence. For example, previous research has shown that childhood physical abuse is associated with adult anxious attachment (Muller et al., 2008), which in turn presents a significant and positive relationship with love addiction (Gori et al., 2023). Furthermore, childhood emotional abuse has been found to be associated with rejection sensitivity in adulthood (Hernandez et al., 2016),

as well as different areas of personality dysfunction, including dependent pathology (see Li et al. [2020] for a review).

The findings also indicated that emotional abuse was significantly and positively related to all the unbalanced family functioning patterns, while physical abuse was only associated with the chaotic one (in line with **H₂**). The data are consistent with prior evidence suggesting the predictability of childhood emotional abuse on maladaptive interpersonal processes (Massing-Schaffer et al., 2015). Furthermore, these results enrich the existing body of research by reinforcing findings from previous studies that demonstrated a significant association between childhood emotional abuse and lower relationship satisfaction (Lassri et al., 2016). The results also align with previous research highlighting a significant association between physical abuse and dysfunctional family relationships (Sunday et al., 2008). Moreover, physical abuse has been related to avoidant interpersonal style, low self-esteem, and deficient communication competencies (Kim & Cicchetti, 2004; Tezel, Kişlak & Boysan, 2015), supporting its association with chaotic family functioning, where communication between family members is inadequate and roles within the family are unclear (Olson, 2000).

The present study's results also indicated that enmeshed, chaotic, and rigid family functioning patterns were significantly and positively related to love addiction, unlike disengagement which showed a non-significant association (partially supporting **H₃**). The lack of statistical significance in relation to disengaged family functioning may be due to the presence of rigid boundaries within such systems, manifested in coldness, indifference, unsupportiveness, and emotionally withdrawn family relationships (Sturge-Apple, Davies, & Cummings, 2010). The disengaged style is associated with minimal emotional engagement and responsiveness in the relationship (Berryhill & Smith, 2021). On the other hand, previous evidence has shown significant relationships between enmeshed, rigid, and chaotic family functioning and other addictive behaviours. This includes the association between (i) enmeshed/chaotic family functioning and problematic smartphone use (Jimeno et al., 2022), (ii) enmeshed family functioning and compulsive online shopping (Topino, Cacioppo, & Gori, 2022), and (iii) rigid family functioning and drug addiction (Zhang & Zeng, 2023). In sum, the relationship

between physical abuse and love addiction occurs predominantly (and indirectly) through the mediation of the chaotic family functioning pattern, while the association between emotional abuse and love addiction occurs both directly and indirectly through the involvement of enmeshed, chaotic, and rigid family functioning patterns (consistent with **H$_4$**).

The present study also has some limitations that should be noted when interpreting the results. First, the cross-sectional design did not allow the establishment of causal links in the relationships between the variables. Moreover, childhood trauma was assessed retrospectively and unbalanced family functioning was assessed based on current experience. Therefore the sampling period did not overlap. However, the trauma did not necessarily proceed with unbalanced functioning, which might be longstanding, and therefore directionality cannot be determined. The implementation of longitudinal studies would help overcome these issues. Second, the study sample predominantly comprised female participants. Although gender was controlled in the analyses, future research with more balanced gender samples is needed to confirm the generalizability of the findings. Third, the reliance on self-report data means that there may be various biases that affect the veracity of the findings (e.g., social desirability, memory recall). Therefore, future research needs to replicate the results of the present study by utilizing different methodologies (e.g., observational and/or experimental methods). Fourth, no demographic data regarding the family structure were collected. Furthermore, when participants were asked for their perception of family functioning, they were free to consider either their current family or family of origin based on which they perceived as most salient at the time of responding, given that no indications were provided in the instructions in this regard (Olson, 2011; Baiocco et al., 2013). In future research, a deeper exploration of these nuances could yield more comprehensive and detailed results. Finally, there were some potentially important variables that were not investigated in the present study (e.g., personality traits), and other factors (e.g., emotional dysregulation; Salani et al., 2022) may intervene in the explored relationships. Therefore, further exploration of other risk factors associated with love addiction is needed.

Conclusions

The present study examined the role of childhood trauma and unbalanced family functioning as possible risk factors that can contribute to this condition. Among the types of childhood trauma taken into consideration, the results showed that only emotional abuse and physical abuse were significantly and positively associated with love addiction. Emotional abuse is related both directly to love addiction, and indirectly through the mediation of enmeshed, chaotic and rigid family functioning patterns. Physical abuse was only indirectly related to love addiction, through the mediation chaotic pattern. These findings could be used in prevention programs, as well as providing useful information for therapeutic interventions. For instance, these data could complement prior research that supports the role of parental control as a risk factor for love addiction (Salani et al., 2022), indicating the importance of incorporating the family context into treatment, consistent with evidence from other types of addiction (e.g., Rowe et al., 2012; Zajac et al., 2017). Furthermore, the results suggest that this approach could be particularly effective for individuals who report high levels of emotional and physical abuse, and preventive interventions could be specifically targeted towards them (Marshall, 2012; Vlahovicova et al., 2017).

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Tables and Figures

Figure 1. Tested (A) and resulting (B) parallel mediation model: A path analysis.
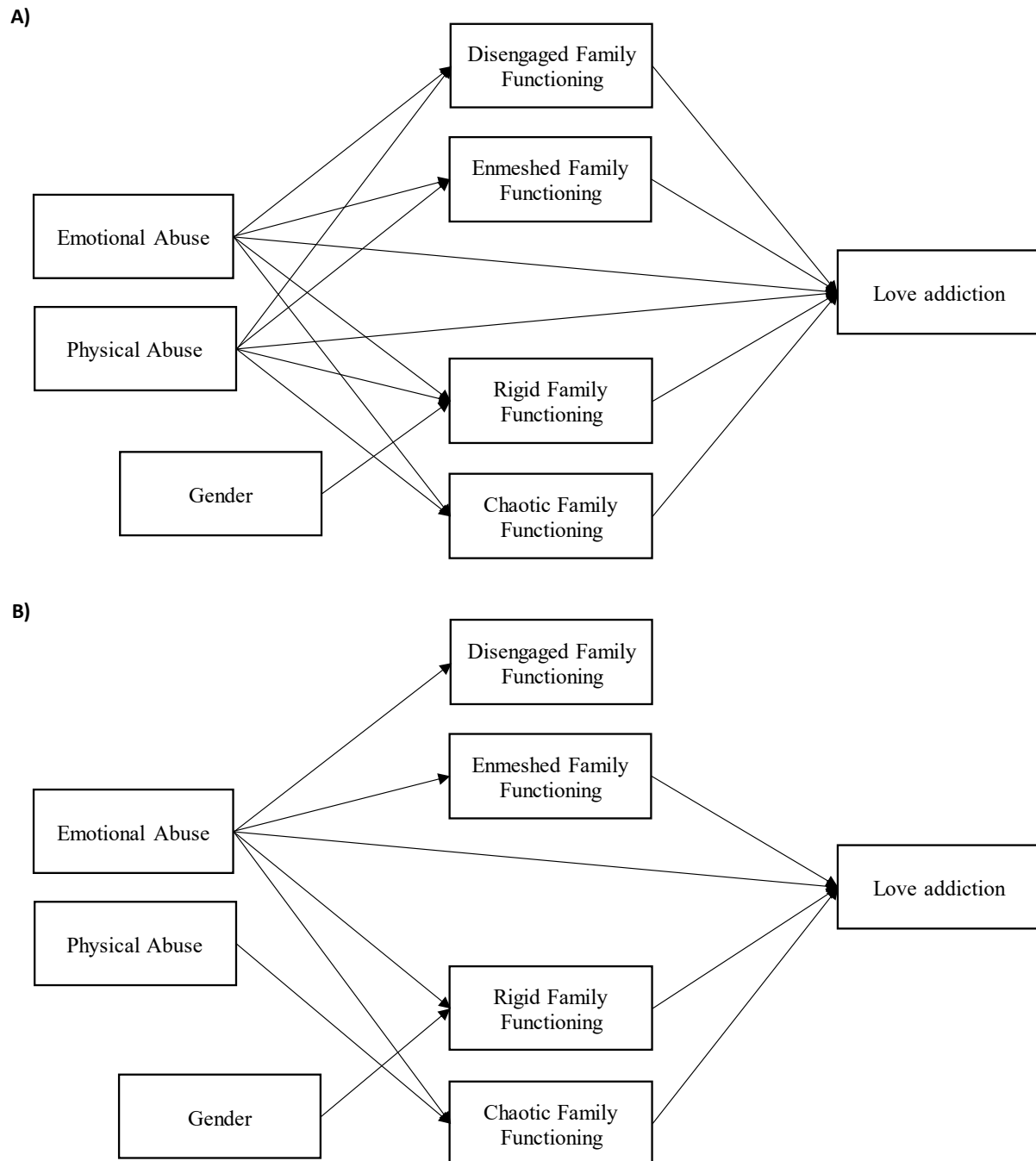
Note: Only statistically significant paths are showed in the resulting parallel mediation model (B)

Table 1. Correlation matrix of study variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Love addiction	1											
Family functioning												
2. Cohesion	**-.082**[*]	1										
3. Flexibility	-.063	**.785**[**]	1									
4. Disengagement	**.128**[**]	**-.575**[**]	**-.458**[**]	1								
5. Enmeshment	**.231**[**]	**-.119**[**]	**-.091**[**]	**.178**[**]	1							
6. Rigidity	**.199**[**]	.034	**.221**[**]	**.153**[**]	**.459**[**]	1						
7. Chaotic	**.205**[**]	**-.160**[**]	**-.171**[**]	**.406**[**]	**.269**[**]	**.090**[**]	1					
Childhood trauma												
8. Emotional abuse	**.191**[**]	**-.358**[**]	**-.334**[**]	**.355**[**]	**.199**[**]	**.127**[**]	**.200**[**]	1				
9. Physical abuse	**.173**[**]	**-.222**[**]	**-.160**[**]	**.208**[**]	**.115**[**]	**.124**[**]	**.202**[**]	**.535**[**]	1			
10. Sexual abuse	.057	-.043	-.033	**.118**[**]	**.096**[**]	**.072**[*]	**.069**[*]	**.203**[**]	**.207**[**]	1		
11. Emotional neglect	.063	**-.583**[**]	**-.525**[**]	**.418**[**]	**.097**[**]	-.016	**.197**[**]	**.647**[**]	**.340**[**]	**.142**[**]	1	
12. Physical neglect	.035	**-.319**[**]	**-.297**[**]	**.217**[**]	**.169**[**]	-.025	**.164**[**]	**.474**[**]	**.332**[**]	**.261**[**]	**.612**[**]	1

Note: Bold values indicate significant *p*-values. *. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

Table 2. Unstandardized coefficients and bootstrap confidence intervals of the path analysis.

	Estimate	SE	*p*	BootLLCI*	BootULCI*
Total effects					
Emotional abuse → Love addiction	0.119	0.033	**< 0.001**	0.056	0.183
Physical abuse → Love addiction	0.146	0.061	**0.020**	0.025	0.265
Direct effects					
Emotional abuse → Love addiction	0.079	0.034	**0.018**	0.012	0.145
Physical abuse → Love addiction	0.106	0.060	0.077	-0.010	0.224
Total indirect effects					
Emotional abuse → Love addiction	0.049	0.014	**0.004**	0.012	0.069
Physical abuse → Love addiction	0.040	0.019	**0.037**	0.003	0.077
Partial indirect effects					
Emotional abuse → Disengaged family functioning → Love addiction	-0.004	0.011	0.734	-0.027	0.018
Emotional abuse → Enmeshed family functioning → Love addiction	0.020	0.008	**0.003**	0.006	0.037
Emotional abuse → Rigid family functioning → Love addiction	0.009	0.005	**0.027**	0.001	0.021
Emotional abuse → Chaotic family functioning → Love addiction	0.015	0.006	**0.002**	0.004	0.029
Physical abuse → Disengaged family functioning → Love addiction	0.000	0.003	0.942	-0.006	0.006
Physical abuse → Enmeshed family functioning → Love addiction	0.002	0.010	0.822	-0.018	0.022
Physical abuse → Rigid family functioning → Love addiction	0.012	0.009	0.115	0.003	0.033
Physical abuse → Chaotic family functioning → Love addiction	0.027	0.012	**0.011**	0.006	0.051

Note: Gender was controlled as covariate of the rigid family functioning pattern. Bold values indicate significant *p*-values. * 5000 bootstrapped samples with 95% percentile bootstrapping confidence intervals. BootLLCI = bootstrapped lower-level confidence interval; BootULCI = bootstrapped upper-level confidence interval.