




Presenting a Model of Obsessive-Compulsive Disorder Based on Family Functioning and Life Stressors with the Mediation of Perfectionism in Students

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ABSTRACT

Objective: Obsessive-compulsive disorder (OCD) negatively impacts thoughts, beliefs, cognitions, and emotions. Therefore, the aim of this study was to present a model of OCD based on family functioning and life stressors with the mediation of perfectionism in students.

Methods and Materials: This cross-sectional correlational study was conducted on students in Tehran during the 2020-2021 academic year. The sample size was 404 participants, selected through multistage cluster sampling. The research instruments included the Obsessive-Compulsive Inventory (Hodgson & Rachman, 1977), Family Assessment Device (Epstein et al., 1983), Life Events Scale (Pekel et al., 1971), and the Multidimensional Perfectionism Scale (Frost et al., 1990). Data analysis was performed using structural equation modeling with path analysis in SPSS and PLS software.

Findings: The results showed that the model of OCD based on family functioning and life stressors with the mediation of perfectionism in students had a good fit. Additionally, family functioning and life stressors had a direct and significant effect on perfectionism and OCD, and perfectionism had a direct and significant effect on OCD ($P < 0.05$). Furthermore, family functioning and life stressors had an indirect and significant effect on OCD through the mediation of perfectionism ($P < 0.05$).

Conclusion: The findings indicate the significant mediating role of perfectionism in the relationship between family functioning and life stressors with OCD. Therefore, to reduce OCD, interventions can focus on improving family functioning, reducing life stressors, and enhancing perfectionism.

Keywords: *Obsessive-Compulsive Disorder, Family Functioning, Life Stressors, Perfectionism, Students.*

1. Introduction

Obsessive-compulsive disorder (OCD), according to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), is categorized as an anxiety disorder that negatively affects thoughts, beliefs, cognitions, and emotions (Pazuniak & Pekrul, 2020). This disorder is persistent, chronic, recurrent, and debilitating, ranging from minor annoyances to severe torment (See et al., 2022). OCD includes obsessions and compulsions; obsessions are persistent and recurring thoughts, images, and impulses experienced involuntarily, while compulsions are repetitive behaviors or mental acts performed in response to the obsessions (Kubota et al., 2019). Compulsions serve as functions of obsessions, intended to neutralize the obsessions, prevent or relieve feared consequences, and reduce anxiety caused by the obsessions (Wake et al., 2022). The prevalence of OCD in the general population is 2 to 3 percent, with some researchers estimating its presence in 10 percent of outpatient psychiatric clinic patients (Golshani, 2020; Golshani et al., 2021). Another study estimated the lifetime prevalence of OCD at approximately 2.3 percent and its 12-month prevalence at 1.2 percent, with nonclinical prevalence in the general population ranging from 21 to 25 percent (Lashkary Bavil Olyaei & Bakhshipour-Roodsari, 2017). The main characteristic of this disorder is the repeated occurrence of intrusive thoughts and actions that disrupt social, occupational, and familial functioning, leading to reduced health and quality of life (Tan et al., 2021).

One factor associated with OCD is family functioning (Murphy & Flessner, 2015), which represents an important aspect of the family environment and affects the physical, emotional, and social health of family members (Butsriphum et al., 2020). Family functioning refers to the family's ability to maintain internal coordination in adapting to changes, resolving conflicts, challenges, and family disputes, maintaining cohesion among members, and succeeding in disciplinary patterns and respecting boundaries to preserve and enhance family unity (MacPherson et al., 2018). This construct indicates the effectiveness of family members in social and emotional communications, family rules, and coping with various life events (Lu et al., 2017). Family functioning as a multidimensional construct illustrates the interaction among family members, cooperation, and participation in achieving common goals (Sonney et al., 2019). Better family functioning and performance lead to higher physical and mental health and better quality of life for family members. Families with appropriate functioning

cultivate healthy, capable, and developed individuals in society (Clements et al., 2020). Families with weak and inappropriate functioning typically have many problems, especially in the emotional domain. In such families, communication is ignored or inappropriate, responsibilities and roles are not well executed, family members invest little emotionally in one another, show little interest in each other, and have a limited range of emotional responses (Epstein et al., 1983; MacPherson et al., 2018; Song et al., 2019).

Another factor associated with OCD is life stressors (Chiappelli et al., 2021), which include significant life events, trauma, and environmental changes, with long-term consequences on health (Armstrong et al., 2018). Life stressors are sudden and unpredictable events that occur throughout life, causing significant psychological stress and pressure (Howarth et al., 2020). Stress refers to the tension-filled relationship between a person and the environment, and when an individual cannot cope with stress, they experience physical or psychological problems (Armstrong et al., 2018). Life stressors act as sources of stress, exerting severe physical and psychological pressure on individuals, and if sustained, lead to a weakened immune system (Chiappelli et al., 2021).

One variable that might mediate the relationship between family functioning, life events, and OCD is perfectionism, a personality trait that plays a crucial role in the persistence of other psychological characteristics (Zhao et al., 2022). Perfectionism is a multidimensional construct involving striving for flawlessness, setting high-performance standards, critical self-evaluations, and concerns about mistakes (Richardson & Gradisar, 2020). Initially, perfectionism was defined as a unidimensional and pathological construct (Kokkoris, 2019), but it is now divided into positive and negative dimensions. Positive perfectionists are diligent in their activities, enjoying moderate stress and anxiety, whereas negative perfectionists experience high stress and anxiety in their pursuit of flawlessness (McComb & Mills, 2022). Perfectionism includes two components: perfectionistic strivings, meaning striving for personal, logical, and reasonable standards, and perfectionistic concerns, meaning discomfort and worry about mistakes and uncertainties about beliefs and activities (Robinson & Abramovitch, 2020).

Few studies have examined the relationships among family functioning, life stressors, perfectionism, and OCD, and the results of the most important studies are reported below. Murphy and Flessner (2015) found a positive and significant correlation between poor family functioning and

OCD in children (Murphy & Flessner, 2015). Chen et al. (2022) found a positive and significant correlation between parental negative perfectionism and family dysfunction in clinically depressed adolescents. Golestani and Nezamoleslami (2021) found a positive and significant correlation between stress and OCD in students (Golestani & Nezamolslami, 2021). Manoochehri et al. (2019) reported a negative and significant relationship between life stressors and positive perfectionism (Manoochehri et al., 2019). Furthermore, Raines et al. (2019) found a positive and significant correlation between negative perfectionism and OCD symptoms in veterans (Raines et al.). Vakili Heris et al. (2019) found a positive and significant effect of maladaptive perfectionism on OCD in students (Vakili Heris et al., 2020). Another study by Rahimi and Zamaninha (2018) reported a positive and significant correlation between parental perfectionism and students' OCD (Rahimi & Zamaninha, 2019).

OCD is the fourth most common psychiatric disorder after phobias, substance-related disorders, and depression, with an average onset age of 20 years (Fuss et al., 2019). Given the high prevalence of OCD and its onset around 20 years of age (i.e., during the student years), it is crucial to examine and evaluate the factors influencing this disorder. Therefore, the factors influencing OCD must be assessed, and programs to reduce them should be designed and implemented. Another important point is that previous studies have examined the effects of many variables on OCD but have paid less attention to the roles of family functioning, life stressors, and perfectionism. Moreover, most previous studies were correlational and did not focus on causal relationships between variables, which this study aims to address. Consequently, the goal of this study was to present a model of OCD based on family functioning and life stressors with the mediation of perfectionism in students.

2. Methods and Materials

2.1. Study Design and Participants

This cross-sectional correlational study was conducted on students in Tehran during the 2020-2021 academic year. The sample size was 404 participants, selected through multistage cluster sampling. Initially, four districts were randomly selected from different areas of Tehran, and then several streets were randomly chosen from each district. All students on those streets who met the inclusion criteria were selected as the sample. The inclusion criteria included willingness to participate in the study, no COVID-19

infection in the past three months, no addiction or psychiatric medication use, no stressful events such as divorce or death of close ones in the past six months, and no psychological services received in the past three months. The exclusion criteria included incomplete responses to the instruments and not answering more than ten percent of the items.

After the proposal was approved, sampling and identification of the samples were conducted. In addition to explaining the importance and necessity of the research, ethical considerations, including informed consent to participate, confidentiality of personal information, etc., were presented to the participants, and they were asked to participate and respond to the instruments accurately and completely. Finally, participants were thanked and appreciated for their participation and completion of the instruments.

2.2. Measures

2.2.1. Obsessive-Compulsive Disorder

This inventory was developed by Hodgson and Rachman (1977) with 30 items. Items are scored as yes or no, with half of the items scoring one point for yes and the other half scoring one point for no. The total score is the sum of the item scores, ranging from 0 to 30, with higher scores indicating greater OCD. Hodgson and Rachman (1977) confirmed the validity of the instrument through item-total correlation and reported a test-retest reliability of 0.89 (Hodgson & Rachman, 1977). In Iran, Shirani Bidabadi et al. (2022) reported a Cronbach's alpha reliability of 0.83 for the inventory. In this study, the reliability was calculated as 0.88 using Cronbach's alpha (Shirani Bidabadi et al., 2022).

2.2.2. Family Functioning

This questionnaire was developed by Epstein, Baldwin, and Bishop (1983) with 60 items. Items are scored on a four-point Likert scale from strongly disagree (1) to strongly agree (4), with the total score being the sum of item scores, ranging from 60 to 240. Higher scores indicate better family functioning. Epstein et al. (1983) confirmed the face validity with expert opinions and reported a Cronbach's alpha reliability of 0.92. In Iran, Ashouri, Mammeri, and Saedi (2015) reported a Cronbach's alpha reliability of 0.85 (Golshani et al., 2021). In this study, the reliability was calculated as 0.90 using Cronbach's alpha.

2.2.3. *Life Events*

This questionnaire was developed by Pekel, Priousov, and Ehlenhout (1971) with 61 items. Items are scored on a five-point Likert scale from not at all (0) to very much (4), with the total score being the sum of item scores, ranging from 61 to 244. Higher scores indicate more life stressors. Pekel et al. (1971) confirmed the face validity with expert opinions and reported a Cronbach's alpha reliability of 0.88. In Iran, Ghorbani et al. (2019) reported a Cronbach's alpha reliability of 0.75 (Qorbani et al., 2019). In this study, the reliability was calculated as 0.81 using Cronbach's alpha.

2.2.4. *Perfectionism*

This questionnaire was developed by Frost, Marten, Lahart, and Rosenblatt (1990) with 35 items. Items are scored on a five-point Likert scale from strongly disagree (1) to strongly agree (5), with the total score being the sum of item scores, ranging from 35 to 175. Higher scores indicate greater perfectionism. Frost et al. (1990) confirmed the convergent and divergent validity with positive and negative

perfectionism scales and reported a Cronbach's alpha reliability of 0.90 (Frost et al., 1990). In Iran, Shafiei, Abbasi, and Ghadampour (2022) reported a Cronbach's alpha reliability of 0.84 (Shafiee et al., 2022). In this study, the reliability was calculated as 0.92 using Cronbach's alpha.

2.3. *Data analysis*

Data analysis was performed using structural equation modeling with path analysis in SPSS and PLS software.

3. **Findings and Results**

In this study, the instruments of 6 participants were excluded due to incompleteness, and analyses were conducted for 398 participants. Therefore, the participation rate in the study was 98.51%. The majority of the sample were female (267 participants, 67.09%) and single (302 participants, 75.88%). Table 1 reports the mean, standard deviation, skewness, and kurtosis of family functioning, life stressors, perfectionism, and OCD among students.

Table 1

Descriptive Statistics for Study Variables among Students

Variable	Mean	Standard Deviation	Skewness	Kurtosis
Family Functioning	139.70	10.43	1.18	1.81
Life Stressors	76.02	14.58	-0.07	1.71
Perfectionism	104.18	8.38	0.09	0.36
Obsessive-Compulsive Disorder	11.07	2.26	0.04	0.09

As shown in Table 1, the assumption of normality for the variables was not rejected, as the skewness and kurtosis values of family functioning, life stressors, perfectionism,

and OCD fell within the range of -2 to +2. Table 2 presents the correlation matrix for family functioning, life stressors, perfectionism, and OCD among students.

Table 2

Correlation Matrix for Study Variables among Students

Variables	1	2	3	4
1. Family Functioning	1			
2. Life Stressors	-0.46*	1		
3. Perfectionism	-0.52*	0.75*	1	
4. Obsessive-Compulsive Disorder	-0.18*	0.20*	0.57*	1

*p<0.01

As shown in Table 2, family functioning had a significant negative correlation with OCD among students, while life stressors and perfectionism had significant positive correlations with OCD (P < 0.01). Table 3 reports the fit

indices of the OCD model based on family functioning and life stressors with the mediation of perfectionism among students.

Table 3

Fit Indices of the OCD Model Based on Family Functioning and Life Stressors with the Mediation of Perfectionism among Students

Indices	χ^2/df	RMSEA	NFI	NNFI	CFI	GFI
Calculated Value	2.01	0.05	0.91	0.91	0.97	0.95
Acceptance Value	< 3	< 0.05	> 0.90	> 0.90	> 0.90	> 0.90

As shown in Table 3, all indices indicated a good fit for the OCD model based on family functioning and life stressors with the mediation of perfectionism among students. Figure 1 shows the results of the OCD model based

on family functioning and life stressors with the mediation of perfectionism among students in terms of standardized coefficients and t-test, and Table 4 reports the effects of the mentioned model.

Table 4

Effects of the OCD Model Based on Family Functioning and Life Stressors with the Mediation of Perfectionism among Students

Direct and Indirect Effects	Path Coefficients	t-Statistic	Significance	Result
Direct effect of Family Functioning on Perfectionism	-0.38	4.97	< 0.05	Not Rejected
Direct effect of Family Functioning on OCD	-0.15	2.06	< 0.05	Not Rejected
Direct effect of Life Stressors on Perfectionism	0.51	6.40	< 0.05	Not Rejected
Direct effect of Life Stressors on OCD	0.16	2.11	< 0.05	Not Rejected
Direct effect of Perfectionism on OCD	0.40	5.38	< 0.05	Not Rejected
Indirect effect of Family Functioning on OCD with the mediation of Perfectionism	-0.15	4.17	< 0.05	Not Rejected
Indirect effect of Life Stressors on OCD with the mediation of Perfectionism	0.20	4.65	< 0.05	Not Rejected

As shown in Table 4, family functioning and life stressors had a direct and significant effect on perfectionism and OCD, and perfectionism had a direct and significant effect on OCD ($P < 0.05$). Additionally, family functioning and life stressors had an indirect and significant effect on OCD through the mediation of perfectionism ($P < 0.05$).

4. Discussion and Conclusion

Obsessive-compulsive disorder (OCD) is a highly prevalent disorder with numerous negative consequences. The aim of this study was to present a model of OCD based on family functioning and life stressors with the mediation of perfectionism in students.

The findings of this study showed that family functioning had a direct and significant effect on perfectionism and OCD. These findings are consistent with the results of studies by Chen et al. (2022) and Kermanian et al. (2020) regarding the effect of family functioning on perfectionism, and with the results of the study by Murphy and Flessner (2015) regarding the effect of family functioning on OCD. It can be inferred that the family, as a system, has functions that include problem-solving, communication, roles, emotional responsiveness, emotional involvement, and behavioral control. Family dysfunction and parental instability, along with strict and rigid rules, can increase

anxiety in children. Therefore, appropriate family functioning leads to positive psychological characteristics in its members, whereas inappropriate family functioning leads to negative psychological characteristics. As perfectionism and OCD are negative psychological characteristics, it can be expected that family functioning has a negative and significant effect on both perfectionism and OCD, and that improving family functioning in students can reduce perfectionism and OCD.

Another finding of this study showed that life stressors had a direct and significant effect on perfectionism and OCD. These findings are consistent with the results of studies by Manouchehri et al. (2019) regarding the effect of life stressors on perfectionism, and with the results of studies Golestani and Nezam Al-Islami (2021) regarding the effect of life stressors on OCD (Golestani & Nezamolslami, 2021; Manoochehri et al., 2019). It can be inferred that life stressors can reduce an individual's optimism, happiness, and hope, leading to pessimism. Additionally, individuals with higher scores on life stressors usually experience more stressful events, have more serious problems with competence, self-efficacy, self-concept, and self-esteem. Such individuals do not enjoy the efforts to solve problems and challenges, have low resilience, are less successful in achieving goals, and have weaker and lower self-efficacy and self-concept, all of which can lead to life stressors

having a positive and significant effect on both perfectionism and OCD, and that increasing life stressors in students can increase perfectionism and OCD (Golestani & Nezamolslami, 2021).

Another finding of this study showed that perfectionism had a direct and significant effect on OCD. This finding is consistent with the results of prior studies (Rahimi & Zamaniha, 2019; Raines et al.; Vakili Heris et al., 2020; Zhao et al., 2022). It can be inferred that perfectionism causes individuals to set unrealistic expectations for themselves, and based on these, they do not accept any mistakes or failures, and such individuals are never satisfied with themselves. Therefore, perfectionism through characteristics such as unrealistic expectations, non-acceptance of personal limitations, and inflexibility, prevents individuals from enjoying their efforts and achieving success, and as a result, feeling satisfied with their performance. Feeling dissatisfied and discontented with one's performance is a component of psychological distress and can lead to increased OCD. Based on the presented material, it seems logical that increasing perfectionism can lead to increased OCD.

Furthermore, the findings of this study showed that family functioning had an indirect and significant effect on OCD with the mediation of perfectionism. No previous research was found on this subject, but it can be inferred that positive family functioning or a positive family atmosphere, which includes responsibility, adaptability, and conscientiousness, provides a suitable context for achieving positive characteristics such as goal orientation, striving for excellence, and organization. Families with high functioning by increasing individual and family freedoms lead to increased positive aspects of perfectionism and reduced negative aspects of perfectionism. Because they are given the opportunity to determine their fate, they strive with goal orientation, striving for excellence, organization to achieve their goals, and such individuals are less likely to suffer from psychological damages, including OCD. Therefore, perfectionism is a suitable mediator between family functioning and OCD, and family functioning with the mediation of perfectionism can have an indirect and significant effect on OCD.

Moreover, the findings of this study showed that life stressors had an indirect and significant effect on OCD with the mediation of perfectionism. No previous research was found on this subject, but it can be inferred that when individuals experience more stressful and tense events in life, their assessment of events becomes more negative, they

see themselves as less happy and hopeful, and have lower social support and psychological capital. Conversely, individuals who experience fewer stressful and tense events and more positive and pleasant events in life are happier and more hopeful in their personal, professional, and social lives, and have higher social support and psychological capital. Perfectionism, defined as having high and unreachable or very difficult expectations for oneself, is logical. It is logical that individuals who have experienced more life stressors choose unattainable goals and ideals for themselves and thus suffer more from OCD. Therefore, perfectionism is a suitable mediator between life stressors and OCD, and life stressors with the mediation of perfectionism can have an indirect and significant effect on OCD.

5. Limitations & Suggestions

One of the major limitations of this study is the use of self-report instruments, not examining the results separately by gender, limiting the research population to students in Tehran, and the correlational nature of the study. Therefore, it is suggested that intervention studies aimed at the effectiveness of educational and therapeutic methods in reducing OCD be conducted. Another suggestion is to use structured interviews for data collection and conduct studies separately by gender and compare their results.

The results indicate the significant mediating role of perfectionism in the relationship between family functioning and life stressors with OCD. Therefore, to reduce OCD, interventions can focus on improving family functioning, reducing life stressors, and enhancing perfectionism. It is suggested to design programs for reducing OCD in various groups, especially students, and implement them through educational workshops by specialized and experienced instructors. Another practical suggestion is to hold educational courses to reduce psychological damages, especially OCD in students, which can be held for both students and university professors.

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Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors contributed equally.

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