



Structural Model of the Relationship between Pathological Personality Traits and Adolescents' Tendency to Self-Harm Behavior: The Mediating role of Hyper-Competitive Attitude

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Received: 10 January 2022

Accepted: 21 June 2022

Abstract

Background: Self-harm is more prevalent than previously thought in adolescent and young adult populations. This study aimed to test the structural model of the relationship between pathological personality traits and adolescents' tendency to self-harm behavior based on the mediating role of hyper-competitive attitude.

Methods: This descriptive-analytical study was performed on 205 girls with self-damage selected for sampling during 3 months (September to December) in Teheran, Iran, 2021. The participants were selected through snowball sampling method and answered the competitive attitude scale (CAS); Personality inventory for DSM-5 (PID-5) and self-harm inventory (SHI) questionnaires. The results were analyzed through structural equation modeling (SEM), AMOS18 software.

Results: Findings of the structural model test showed that each of the dimensions of abnormal personality has a positive effect on hyper-competitive attitude, also the effect of extreme competition on self-harm was positive and significant. On the other hand, the mediating role of hyper-competitive attitude in the relationship between abnormal personality dimensions and self-harm was confirmed. Fit indices with values ($\chi^2 / df = 2.49$, RMSEA = 0.08, GFI = 0.98, CFI = 0.98) also showed that the tested model has an acceptable fit with the concept model.

Conclusions: Individuals suffering from pathological personalities and self-harm tendencies exhibited hyper-competitive attitudes. In assessment and treatment settings, our findings provide the best prognostic information to explain psychopathology and to highlight abnormal personality traits and self-harm behaviors in adolescents.

Keywords: Pathological personality traits, Adolescent, Self-harm behavior, Hyper-competitive attitude.

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Please cite this paper as: Najian A, Kachooei M, Farahani H. Structural model of the relationship between pathological personality traits and adolescents' tendency to self-harm behavior: the mediating role of hyper-competitive attitude. Int J Health Stud 2022;9(2):27-31

Introduction

An adolescent is a time of transition between ages 19 - 12 and is one of the most important phases of the human development process; this is due to the changes in the infrastructure of biological, psychological, and social development during this phase.¹ This period of development requires adolescents to establish healthy relationships with others and achieve emotional balance, which otherwise may lead to some psychological stress.² While adolescents who grow up with the support and integrity of their parents tend to

remain in and enter the family, in others who do not experience good social support within their families and in their environment, they experience social injuries, which negatively affect their interactions and future.³ Due to being in the transition phase, they frequently expose to situations that promote the acceptance of high-risk behaviors, resulting in health threats.⁴ When serious and irregular self-harm behavior occur, they can lead to behavioral problems such as self-pity or self-sufficiency.⁵ Many teenagers attempt to deal with the difficulties and crises of this period, which threatens their health and future. One of the high-risk acts in this period, which is carried out by adolescents for various reasons, is self-harm behavior.⁶

The term self-harm behaviors refer to a group of actions in which the individual intentionally causes harm to themselves or their property, which is the most evident form.⁷ Typically, the term non-suicidal self-harm is commonly used to describe intentional and deliberate destruction of body tissue without the intention to die (e.g., cutting and burning). Some people, however, use indirect means to mistreat themselves or harm themselves without altering bodily tissue (e.g., eating disorders and drug abuse).⁸ Defining self-harm as deliberate and deadly self-pity, involving attempts at suicide without intending to die as well as self-composing self-regulation;⁹ Hence, self-harming is the result of an inability to cope with aggressive actions or impulses that aim to punish themselves or others.¹ Self-harm can be caused by a wide range of factors, but numerous studies have shown that differences in personality and individual characteristics play a major role in its severity.^{10,11}

It is widely agreed that the five-factor model (FFM) provides an understating of personality traits, including neuroticism, extraversion, openness to new experiences, agreement, and conscience. In general, these are known as normal character dimensions.¹² The normal dimensions are on the opposing side to the pathological personality traits.¹³ Based on the character disorders of the DSM-5, and the working group's recommendations, a model of pathological personality traits, including five widely used adjectives is presented.¹⁴ These five areas of adjectives or dimensions include negative affectivity versus emotional stability, detachment versus extraversion, antagonism versus agreeableness, disinhibition versus conscientiousness, and psychoticism versus lucidity.¹⁵ The pathological personality traits have been negatively

associated with mental health.¹⁶ In the field of self-damage, the study of Somma et al. (2019) found that the pathological personality traits could predict self-harm behaviors among adolescents.¹⁷

Even with these relationships, Krueger and Markon (2014) argue that pathological personality traits can affect their behavior through cognitive and emotional factors.¹³ The character effect on self-harm's behavior, such as non-suicidal self-harm, is indirect and results from factors that are affected by thoughts and emotions. This leads to a large number of variables being categorized as intermediate variables.¹⁸ In research on self-harm among adolescents, hyper-competitive attitude has been studied as an intermediary variable.¹⁹ In this context, Hornay believes that hyper-competitive attitude is the need for individuals to succeed and recognize, and by doing so, these people have a feeling of incompleteness and worthlessness at the deepest levels of unconsciousness.

According to Rikman, people with these traits have narcissistic and borderline personality characteristics, and their sense of their own value is disregarding objective reality. The author explains that people like this strive to succeed, believe they are superior to others and deserve respect and adoration.²⁰ Adolescents with hyper-competitive attitude always strive to be the center of attention, or in other words, they are always the best, but when they cannot reach that, they feel angry with others, causing them to develop self-harm.²¹ The concept of hyper-competitive attitude is theoretically considered, but the intermediate variables are not considered. The present study is the first logical attempt to show the role of an intermediate hyper-competitive attitude in the relationship between pathological personality traits and self-harm behavior. Based on the figure 1 model, this study aimed to tests the role of hyper-competitive attitude in relation to pathological personality traits and self-harm behavior.

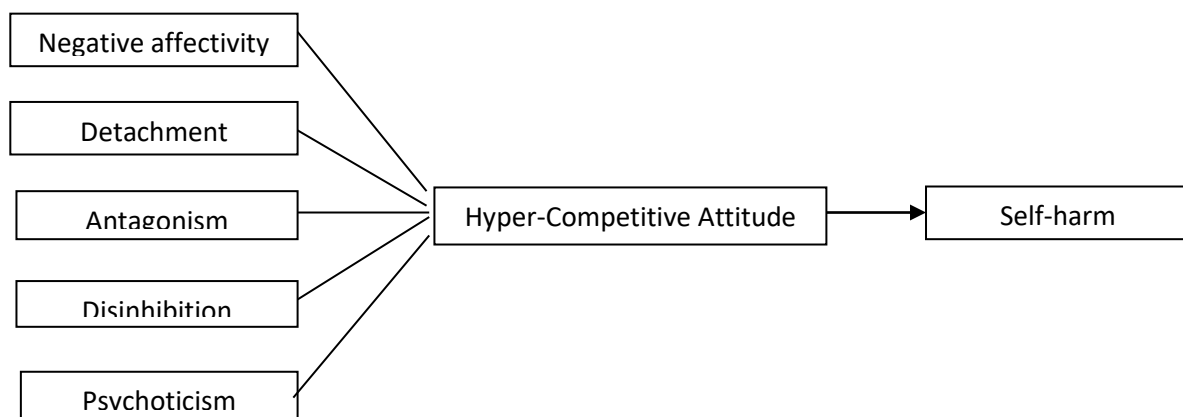


Figure 1. Conceptual model of study

Materials and Methods

This descriptive-analytical study was performed on 205 girls with self-damage selected for sampling during 3 months (September to December) in Teheran, Iran, 2021. The participants were selected through snowball sampling method. Using a statistical sampling formula with $\alpha = 0.05$, $\sigma = 27.08$, $d =$ one-fifth of a standard deviation; adopted from other studies (3) the number of sample was 205. Due to the potential loss of samples, 15% - 20% of this amount was added to the sample.

Participation in the study is restricted to girls, those with self-damage criteria who are 12-18 years of age, who have signed written research consent, and who have both parents. Exclusion criteria are included, the non-consent of participation in the study, and incomplete questionnaires.

To do this study, several psychological centers in the city (Tehran) through call and email invited to cooperate for introducing girls-women, and then from other clinks, also snowballs in accordance with research criteria it was introduced. Then, written consent was sent through a group that was introduced in WhatsApp. With the satisfaction of participants, the questionnaires were sent through the Links in

the WhatsApp application. Then, the questionnaires were collected and from the 220 participants in the study by eliminating incomplete and unsubstantiated questionnaires, 205 questionnaires were analyzed by Fitness of the proposed model that was examined through structural equation modeling (SEM), using SPSS²³ and AMOS¹⁸ software packages. It should be noted that in the present study, the model was used to examine the fitting of the model of Gefen et al.²² which includes goodness of fit index (GFI), adjusted goodness of fit index (AGFI) and the root of the standard mean squares standardized (RMR) as an absolute fit indicator, comparative fit index (CFI), normed fit index (NFI) and incremental fitting index (IFI) as adaptive fitting and chi-square indexes on the degree of freedom (X^2 / DF), parsimony fit index (PCFI) and ROOT mean square error of approximation (RMSEA) were marked as flight indicators.

Competitive attitude scale (CAS): This scale is based on two dimensions of hyper-competitive attitude by Ryckman et al.²⁰. It is composed of two subscales of the hyper-competitive attitude (item 1 to 26) and personal development competition attitude (item 27 to 41). Each item is ranked on a 5-degree scale of Likert (from "Never true for me" to "Always true for

me”).²¹ During the analysis of this study, Cronbach's alpha test was used to assess the reliability of the tool, which was 0.77.

Personality inventory for DSM-5 (PID-5): An evaluation of the PID-5 consists of a questionnaire with 220 items that assesses 25 primary facets grouped into negative affectivity, detachment, antagonism, disinhibition, and psychoticism.¹³ The questionnaire contains four Likert-type questions ranging from zero to three. According to Krueger et al.¹³ the internal consistency of the domains ranged from 0.73 to 0.95. For the Persian version, Amini et al. (2018) obtained alpha coefficients ranging from 0.71 to 0.84.²⁴ In this study, the internal consistency of the facets was ranging from 0.46 to 0.94.

Self-harm inventory (SHI): The SHI is a self-report questionnaire that comprises 22 items and explores the history of self-harm. It has been translated into different languages and its psychometric properties have been validated.²⁵ The items are divided into eating disorder items, high-lethal items, items relating to medical issues, and some individual items concerning cutting, burning, scratching, etc. The participants are asked to answer “yes” or “no” and the total score is obtained by summing up the “yes” responses. Studies revealed that SHI demonstrates good differential and construct validity.²⁶ In the present study, the inventory was first translated into Persian by two psychologists (Ph.D.), and then back translated into English and modified by a clinical psychologist (Ph.D.). The Cronbach's alpha coefficient obtained for the entire inventory in the present research was 0.76.

Results

The final sample of this study included 205 girls. The mean age and standard deviation of these girls was 14.89 and 2.01,

respectively. In addition, descriptive indicators of variables and their normalization test are reported in table 1.

According to table 1, the appropriate mean and SD values of the data and the values of skewness and kurtosis also indicate the normal distribution of data. In addition, the correlation matrix between the research variables is reported in table 1. This matrix shows that there is a significant correlation between many variables of the model. Self-harm correlation with negative affectivity (0.43), detachment (0.32), antagonism (0.26), disinhibition (0.27), psychoticism (0.33) and hyper-competitive attitude (0.44). The relationship between abnormal personality dimensions and each other is also positive.

As figure 2 shows, the test model of present study can predict 50% of the variance in pathological personality traits, and that hyper-competitive attitude can predict 15% of self-harm behavior.

According to table 2, the direct effect of negative affectivity (0.28), detachment (0.20), antagonism (0.15), disinhibition (0.16) and psychoticism (0.19) on hyper-competitive attitude is positive and significant. The direct effect of hyper-competitive attitude on self-harm (0.65) is also significant. Indirect effects of pathological personality traits other than disinhibition are significant on self-harm behavior.

Giffen et al.²² indices were used to evaluate the model fit. The results of pre-model modification indices show that X^2/df and RMSEA values are not appropriate, so model correction indices were used that the modified values are in accordance with the fit evaluation criteria (table 3).

Table 1. Descriptive indicators of research variables

Variables	Mean±SD	Skewness	Kurtosis	1	2	3	4	5	6	7
Negative affectivity	15.78±4.02	-0.78	0.29	1						
Detachment	15.44±3.61	-0.85	0.08	**0.42	1					
Antagonism	15.24±3.60	-0.44	0.01	**0.29	**0.35	1				
Disinhibition	16.19±3.51	-0.64	-0.26	**0.25	**0.45	**0.58	1			
Psychoticism	16.09±3.55	-0.69	0.03	**0.33	**0.26	**0.59	**0.17	1		
Hyper-competitive attitude	63.18±8.07	-0.69	0.05	**0.47	**0.49	**0.52	**0.56	**0.54	1	
self-harm behavior	12.20±2.29	-0.55	-0.11	**0.43	**0.32	**0.26	**0.27	**0.33		1

Pvalue<0.01, *Pvalue<0.05**

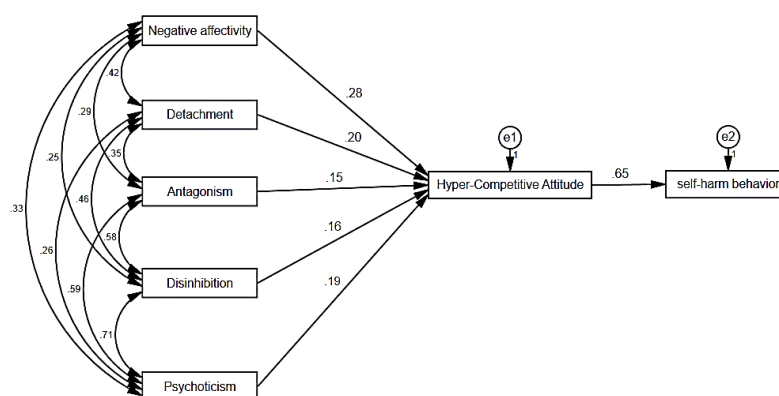


Figure 2. The test model of present study

Table 2. Direct and indirect effects of variables

Path	Direct Effect	t	Pvalue	Indirect effect	Sobel test	Pvalue
Negative affectivity -> Hyper-competitive attitude -> Self-harm	0.28	3.45	0.01	0.18	3.43	0.01
Detachment -> Hyper-competitive attitude -> Self-harm	0.20	2.47	0.01	0.13	2.78	0.01
Antagonism -> Hyper-competitive attitude -> Self-harm	0.15	2.07	0.01	0.09	3.09	0.01
Disinhibition -> Hyper-competitive attitude -> Self-harm	0.16	5.07	0.01	0.10	1.44	0.08
Psychoticism -> Hyper-competitive attitude -> Self-harm	0.19	2.52	0.01	0.12	3.22	0.01
Hyper-competitive attitude -> Self-harm	0.65	7.12	0.01			

Table 3. Structural equation model fitting indices

Chi-square	DF	Pvalue	cmin/df	GFI	IFI	CFI	NFI	RMSEA
2.49	<3	>0.05	0.98	0.98	0.98	0.98	0.98	0.08

Discussion

This study was designed to test the structural model of relationships between pathological personality traits and a tendency toward self-harm behaviors in adolescents, based on the role of hyper-competitive attitudes. The results of the model test showed the conceptual model fitted well and the assumed pathways in the model were acceptable. It was found that pathological personality traits were positively correlated with hyper-competitive attitudes in the test model. Despite limited research examining the relationship between pathological personality traits and hyper-competitive attitudes, Nicholls et al. (2017) found a positive link between hyper-competitive attitudes and the pathological personality traits among athlete adolescents.²⁶ In addition, Zhang et al. (2016) showed pathological personality traits lead to more negative beliefs than others, which was consistent with the present study.²⁷

In the explanation of this finding, it can be said that in general, in the case of Krueger and Markon (2014), the abnormal dimensions of the personality are the pathological aspect of the personality, and are comorbid with self-harm behaviors such as hyper-competitive attitudes.¹³ For example, according to Hopwood et al. (2012), people with high negative emotions have contradictory beliefs about themselves, which can exacerbate their competitive behavior. On one hand, people with high scores in detachment, distrust, and haughtiness increase their competitive behavior.²⁸ In conclusion, high scores in the abnormal dimensions of character are indicative of hyper-competitive behavior. The study also revealed a positive association between hyper-competitive behavior and self-harm behavior. There is also support for this finding in other studies.¹⁹

For example, Gilbert et al. (2009) in their study assessed the relationship between competition with stress, anxiety, and depression among adolescents and found a significant positive correlation between competition with stress, anxiety, and depression.²⁹ In explanation of this finding, people who score high in hyper-competitive behavior experience high narcissism, pessimism, and humiliation levels simultaneously.³⁰ In addition, adolescents who experience self-harm also have low scores on mental health indicators; therefore, it can be concluded that mental health issues in adolescents are in common with hypercompetitive and self-harming behavior. Based upon the above, hyper-competitive is also a key element in explaining the relationship between abnormal personality

and self-harm. In this way, high scores in abnormal personality can affect the level of hyper-competitive, and a high level of hyper-competitive can also increase self-harming tendencies.^{13,14}

The present study, like other studies, had its own limitations, for example, the sample was limited to female participants in Tehran from sampling constraints that should be considered in generalizing the results with precaution, as well as the researcher's inability to control other variables such as intelligence, genetics, family level and concurrent events of other research restrictions, all of which should be considered accurately in interpreting the results.

In summary, this study examined the effects of pathological personality traits and the tendency toward self-harm in adolescents via hyper-competitive attitudes. Individuals suffering from pathological personalities and self-harm tendencies exhibited hyper-competitive attitudes. In assessment and treatment settings, our findings provide the best prognostic information to explain psychopathology and to highlight abnormal personality traits and self-harm behaviors in adolescents.

Acknowledgement

It was a doctoral research project of the first author that led to the writing of this clinical psychology paper with a registered ethical code of IR.ACECR.ROYAN.REC.1400.054.

Conflict of Interest

The authors declare that they have no conflict of interest.

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