

EXPLAINING THE HIGH-RISK BEHAVIORS OF ADOLESCENTS BASED ON THE DARK TRIPLE PERSONALITY TRAITS OF MOTHERS WITH THE MEDIATING ROLE OF EARLY MALADAPTIVE SCHEMAS

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ABSTRACT

Different aspects of the parent-child relationship play considerable roles in developing later behaviors and their continuation, including risky behaviors during adolescence. According to research evidence, parents' personality traits affect the creation and tendency of risky behaviors in adolescence. However, the mediating mechanism and causes of this relationship are still unclear. Therefore, the present study aims at investigating the mediating role of early maladaptive schemas in the relationship between the dark triple personality traits of mothers and the high-risk behaviors of adolescents. The present research is a descriptive-correlation study. Using the multi-stage cluster sampling method, about 367 adolescent students were selected. They responded to the Iranian Adolescents Risk-taking Scale and the Young Schema Questionnaire. Also, their mothers responded to the Short Dark Triad Personality Scale. Correlation results showed that there is a positive relationship between mothers' negative personality traits and adolescents' risky behavior. Also, there is a positive relationship between mothers' negative personality traits and adolescents' maladaptive schemas, including defectiveness/shame schema, dependence/incompetence schema, and vulnerability schema. The results showed that shame/deficiency schema, dependence/incompetence schema, and vulnerability schema have a significant mediating role in the relationship between mothers' negative personality traits and adolescents' risky behavior. Based on these findings, it seems that the dark triple personality traits of mothers negatively affect the creation of early maladaptive schemas in adolescents, which increase the tendency to engage in risky behaviors such as dangerous driving, violence, smoking, drug use, alcohol consumption, relationship with the opposite sex and risky sexual behavior

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Introduction

One of the most sensitive periods in a person's life is adolescence, during which significant changes occur in both the body and mind, each of which is important and influential. During this stage of life, there is a high risk of engaging in different risky behaviors (Lewallen & Neece, 2015). Risky behaviors are defined as potentially harmful actions that individuals voluntarily engage in without awareness of their possible adverse consequences (Vannucci et al., 2020). These behaviors increase the risk of disease or injury and can subsequently lead to disability, death, or social problems. The most common risky behaviors include violence, alcohol addiction, tobacco use disorders, risky sexual behaviors, and eating disorders (Tariq & Gupta, 2023). Violent behaviors are more prevalent among adolescents and young adults. Violence can manifest in various forms, including child abuse or neglect, intimate partner violence, sexual violence, the elder abuse, self-directed violence, and collective violence (Mercy et al., 2003). Alcohol consumption is more common among younger adults aged 18 and above (Hasin et al., 2007). Additionally, the majority of smokers start before the age of 18, and younger individuals face significant challenges when attempting to quit smoking (Camenga & Klein, 2016). On the other hand, risky sexual behaviors and sexually transmitted infections are more common among adolescents. It has been shown that nearly 50% of all sexually transmitted infections occur in adolescents and young adults (Satterwhite et al., 2013). Risky behaviors can negatively affect an individual's growth and overall well-being or hinder their success and future development while also threatening the health and well-being of others in society. Such behaviors may disrupt the lives of others and cause harm to individuals and their property. These behaviors include legal violations such as violence, property destruction, use of tobacco, alcohol, drug abuse, sexual assault, and similar actions (Bouvette-Turcot et al., 2020; Dixon et al., 2014).

Engagement in risky behaviors increases during adolescence but decreases afterward (Gans, 1990). The tendency to engage in these types of behaviors among adolescents is high in most societies, including Iran (Nejati et al., 2019). In Iran, the prevalence of risky behaviors among adolescents has been increasing (Ebrahimitabar Gerdroodbari et al.,

2021). Domestic research indicates that in recent years, the prevalence of risky behaviors among Iranian adolescents has risen (Adibnia et al., 2016). These behaviors include dangerous driving, violence, substance use, alcohol consumption, lack of physical activity and exercise, unhealthy dietary habits, and risky sexual behaviors that increase the likelihood of HIV or sexually transmitted diseases (Zadeh Mohammadi et al., 2011; Zarei et al., 2020). Studies show that the rate of alcohol consumption is at 32%, drug use at 7.3%, smoking experience at 32.7%, and hookah use at 59.2% among adolescents (Esmailzadeh et al., 2014). According to existing statistics, traffic accidents, alcohol-related poisoning, drug abuse, suicide, and cancer are the most common causes of death among youth and adolescents under 25 in Iran (Garmaroudi et al., 2009).

Various factors can contribute to the formation of risky behaviors in adolescents. An important research trend regarding the etiology of adolescent risky behaviors focuses on family functioning (Darabi et al., 2023), where many aspects of parent-child relationships play a role in an individual's subsequent behavior development and continuity. Several theoretical perspectives emphasize the importance of parent-child relationships for adolescent development (Han et al., 2010). Among these factors influencing parental impact on children are parental personality traits that affect adolescents' cognition and social development (Kohansal et al., 2022). In fact, parents create situations through their personality traits and behaviors that stimulate specific behaviors in their children. They either serve as role models for their children or encourage certain types of their behavior (Cervone & Pervin, 2015). Research has shown that one personality variable among parents that can lead to hazardous behavioral problems in adolescents is the dark aspects of parental personality which include three traits: antisocial behavior, narcissism, and Machiavellianism (Samadi et al., 2017; Dehghan et al., 2021). The dark triad consists of three distinct but somewhat overlapping structures (Paulhus & Williams, 2002). Although all three traits are associated with lower levels of morality, agreeableness, honesty-humility, and social emotions (Hodson et al., 2018), they also differ in some respects. Individuals with high narcissism have a very positive but vulnerable self-image that they try to maintain by attracting attention and admiration while being sensitive and defensive about their self-image (Miller et al., 2017). Those high in Machiavellianism are highly power-oriented and thus try to maximize their personal interests through strategic manipulation tactics regardless of ethics (Bereczkei, 2018). Individuals with high

antisocial traits are known for their uncontrolled impulsive behavior and unregulated aggression (Vize et al., 2018). Therefore, the dark triad traits have overlapping but distinct structures that differ motivationally regarding impulsivity and identity needs (Szabó et al., 2023). Research evidence suggests that parental personality affects their parenting behavior with their child which consequently leads to various behavioral outcomes in adolescents. Generally speaking, it has been established that positive parental personality traits correlate with higher levels of positive personality traits in adolescents as well as their behaviors (Truhan et al., 2022; Moussa, 2016).

Regarding how parental personality traits lead to adolescent risky behaviors while negative parenting outcomes are well established as harmful consequences of poor parenting practices; however, the mediating mechanisms remain somewhat unclear (Moussa, 2016; Truhan et al., 2022). Therefore there is a fundamental need to better understand mediating factors through which parental personality traits lead to negative behavior outcomes in adolescents. Thus considering that narcissism traits can influence parenting styles affecting patterns of attachment, as well as cognitive social emotional and behavioral patterns in children (Jonason et al., 2014; Truhan et al., 2022), it seems cognitive schemas may be involved in this relationship. Schemas are stable deep cognitive constructs representing an organized pattern of thinking shaped by interactions between biological factors and environmental influences especially upbringing during childhood and relationships with significant individuals throughout life. In fact these organized patterns form a set of beliefs about oneself and others which reflect an individual's worldview (González-Jiménez & del Mar Hernández-Romera, 2014; Samadi et al., 2017). Individuals' perceptions are mediated through schemas which guide responses based on these patterns (Young et al., 2003).

Early maladaptive schemas are beliefs developed early in childhood that guide our understanding of others, the world and ourselves (Young et al., 2003). Schemas remain dormant over time but when activated by specific stressors influence information processing significantly. Chronic activation of early maladaptive schemas may put individual resources under pressure leading to symptoms of psychological distress (Van Royen et al., 2024). Schemas play a crucial role in exhibiting risky behaviors because they represent flawed patterns of information processing; identifying and modifying these

flawed patterns could help reduce risky behaviors (Cervone & Pervin, 2005). Schemas regulate individuals' perspectives during social interactions providing cognitive motivational processes leading to risky behaviors (Yakin et al., 2019). According to Young et al. (2003), early interactions with caregivers especially parents contribute to developing cognitive schemas (primary functional models) throughout life. In fact these models serve as templates for processing information during social interactions as well as subsequent adaptations. Early maladaptive schemas arise from interactions between children and families; children exposed to difficult living conditions exhibit greater vulnerability, potentially leading to greater maladjustment (Marengo et al., 2019). Indeed, parents play a significant role in shaping their children's schemas (González-Jiménez & del Mar Hernández-Romera, 2014). On the other hand research evidence suggests that early maladaptive schemas among adolescents correlate with higher levels of risky behavior including drug abuse and unhealthy sexual behavior (Zamirinejad et al., 2018; Roemmele & Messman-Moore, 2011; Young et al., 2003). Therefore it appears that one mediating variable between dark triad traits in parents and adolescent risky behavior may be early maladaptive schemas. Accordingly, it is hypothesized that dark triad personality traits will influence the formation of early maladaptive schemas in children leading to subsequent risky behavior.

On the whole, parent-child relationships have long-term consequences for children. Particularly negative parental personality characteristics like dark triad traits can affect children's attachment styles as well as cognitive patterns, resulting in short-term and long-term negative consequences for children. One such consequence manifesting later during adolescence may be risky behaviors. However, the mediating mechanisms remain largely unclear still (Truhan et al., 2022; Moussa, 2016). In fact it is not clearly evident how parental personality characteristics lead to adolescent risky behavior. This research gap raised the necessity for conducting this study. Accordingly, a conceptual model was presented below to better understand mediating pathways through which dark triad traits lead to future negative outcomes including adolescent risky behavior.

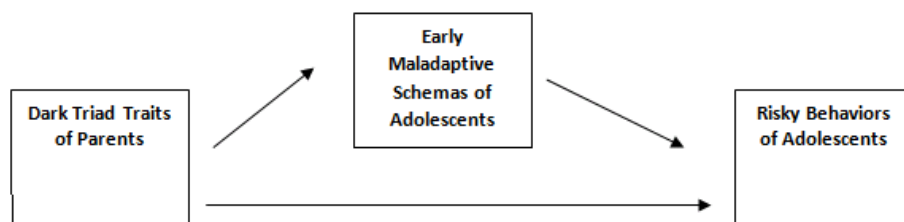


Figure 1: The conceptual model of the research

Methodology

This study is a descriptive one utilizing a correlational design along with path analysis. The statistical population includes all secondary school students in Malayer City (Hamadan Province) during the academic year of 2022-2023. The sample size was determined using Morgan's Table, so based on a population size of 7756 students the minimum sample size should include 367 individuals. Thus from an initial sample drawn from four secondary schools with a maximum total number of 1600 students selected via multi-stage cluster sampling, 400 students along with their mothers were chosen as final samples who responded to relevant questionnaires. Their age ranged from 16 to 18 years old, all studying in secondary school. Among the inclusion criteria were having no specific illness or psychiatric disorder, no psychiatric medication usage or previous psychotherapy history. Moreover questionnaires answered incompletely or following a specific pattern were excluded from analysis. In this study adolescent risky behavior was considered as dependent variable while mothers' dark triad personality traits served as independent variables with early maladaptive schemas regarded as mediating variables.

Data Collection Tools

Iranian Adolescent Risk-Taking Scale

The Iranian Adolescent Risk-Taking Scale was locally designed by Zadeh Mohammadi and colleagues (1390) and validated accordingly, consisting of 38 items rated on a five-point Likert Scale (1=strongly disagree to 5=strongly agree) measuring risk-taking behaviors such as violence, dangerous driving, smoking, alcohol

consumption, romantic relationships and risky sexual behavior. The total score ranges from 38 to 190, higher scores indicating greater levels of risk-taking among adolescents and conversely, lower scores indicating lesser levels. In initial studies psychometric properties were examined revealing exploratory factor analysis accounted for 64.84% of variance associated with risk-taking. Additionally, Cronbach's alpha coefficient for the entire scale was reported at 0.94. In this study Cronbach's alpha coefficient was found at 0.91.

Dark Triad Personality Traits Scale

The Dark Triad Personality Traits Scale was developed by Jonason and colleagues in 2009 comprising 12 items, assessing three dimensions namely narcissism, Machiavellianism and anti-sociality. Items were rated on a seven-point Likert scale (1=strongly disagree to 7=strongly agree) in Jonason and Webster (2010), internal consistency was estimated at 0.83 and each subscale showed good correlation with similar instruments. In Iran, Basharpour and Shafiei (1394) reported Cronbach's alpha coefficients above 0.68 for subscales yielding significant correlations with five-factor model personality dimensions and mental health indicators. In this study, Cronbach's alpha coefficient for overall scale reached 0.89.

Early Maladaptive Schemas Questionnaire - Short Form

The Early Maladaptive Schemas Questionnaire was developed by Young in 1994. This questionnaire consists of 75 items that assess 15 early maladaptive schemas (Young, 1998). These schemas include: distrust/misbehavior, rejection/instability, emotional deprivation, dependency/inadequacy, social isolation/alienation, vulnerability to illness, failure, obedience, sacrifice, emotional inhibition, deficiency/shame, rigid/overcritical standards, entitlement/grandiosity, inadequate self-control, and undeveloped/trapped self. Items are answered on a 6-point Likert Scale (1 = completely false to 6 = completely true). Each schema consists of 5 items, and by summing their scores, a total score for each schema is obtained. The psychometric properties of this questionnaire have been proven in many studies (Oui and Baranov, 2007). In Iran, Ahi et al. (2007) standardized this

questionnaire and reported its internal consistency using Cronbach's alpha above 0.97. In the present study, Cronbach's alpha was obtained as 0.91.

Execution Methodology and Data Collection

To conduct this research, permission was obtained from Bu Ali Sina University of Hamadan along with a recommendation letter for data collection from schools. Subsequently permission was acquired from Malayer City Education Department. After obtaining approval from Research Center of Education Department, secondary schools were designated as clusters. Four schools (two boys schools and two girls schools) were randomly selected from them. Then visits were made obtaining consent from the principals and teachers of the selected schools, again randomly selecting five classes within each school serving as clusters. During class visits detailed instructions regarding questionnaire completion were provided for students. Questionnaires (Iranian Adolescent Risk-Taking Scale and Early Maladaptive Schemas Questionnaire) were prepared systematically in three A4 pages and delivered on paper-pencil format for students' responses. Additionally, Dark Triad Personality Traits Questionnaire was distributed online via Shad Communication Network among students' parents allowing online responses. After reviewing initial results of the completed questionnaires by students and their mothers ($n=400$), 33 questionnaires were removed based on entry exit criteria. Ultimately remaining data ($n=367$) were analyzed utilizing SPSS of version 24 and Lisrel of version 10 software. Descriptive statistics including mean standard deviation and Pearson Correlation were employed. Furthermore, path analysis with parametric statistical assumptions observed, examined the relationships between variables and mediation roles.

Results

Among student respondents 34.40 % were girls and 65.6 % were boys. Their age ranged from 16 to 18 years, the age average (with standard deviation of 0.43) being 17.08. The mothers' ages ranged from 41 to 59 years, the age average (with standard deviation

of 2.63) being 48.59. The mothers' education level reached high school or higher and most of them were housewives. Participants lived within families comprising four members or more. The family economic status predominantly was average. Table 1 presents the means and the standard deviations of variables studied. Based on this table, the results of the Kolmogorov-Smirnov test indicated normal distribution of variables ($p > 0.05$).

Table 1: Descriptive Index of Variables and Normality Statistics

Variable	Mean	Standard Deviation	K-S Statistic	p
Narcissism Trait	8.45	4.34	0.947	0.145
Antisocial Trait	13.71	7.45	0.995	0.097
Machiavellian Trait	9.49	4.9	0.987	0.112
Risky Behaviors	120.31	19.58	0.978	0.179
Emotional Deprivation	13.45	4.59	0.847	0.087
Abandonment/Instability	8.54	6.32	0.986	
Mistrust/Abuse	11.32	7.24	0.912	0.124
Social Isolation/Alienation	15.41	8.25	0.874	0.067
Defect/Shame	10.19	5.73	0.865	0.084
Failure	10.11	4.62	0.902	0.095
Sacrifice	12.78	5.53	0.978	0.147
Dependency/Incompetence	9.93	5.6	0.941	0.156
Emotional Inhibition	8.94	6.64	0.874	0.068
Vulnerability to Disease	11.45	6.46	0.826	0.078
Undeveloped Self/Engulfed	13.75	4.67	0.974	0.096
Obedience	12.24	5.36	0.963	0.092
Rigid Standards/Criticism	16.36	6.64	0.951	0.124
Entitlement/Grandiosity	17.21	5.36	0.879	0.098
Insufficient Self-Control	14.32	6.41	0.946	0.085

To check the relationship between variables, Pearson's Correlation Coefficient (with p value) was calculated and reported in the form of correlation matrix in Table 2. It should be noted that among the types of schemas due to the limitation of the table size, only those

that had a significant relationship with at least one of the dark trinity traits of the personality have been mentioned. As it can be seen in this table, among the types of adolescent schemas, only three schemas of defect/shame, dependence/incompetence and vulnerability had a significant relationship with at least one of the dark triad traits of the mothers' personality, and the rest did not have a significant relationship. Therefore, the report of other cases was omitted.

Table 2: Correlation matrix between model variables

Variable	2	3	4	5	6	7
1. Narcissism Trait	**0.19	**0.37	**0.31	**0.39	*0.21	**0.35
2. Antisocial Trait	1	*0.15	0.04	**0.32	*0.20	**0.30
3. Machiavellian Trait	*0.15	1	*0.21	**0.31	**0.34	*0.20
4. Defect/Shame	0.04	*0.21	1	**0.28	**0.38	**0.32
5. Dependency/Incompetence	**0.33	**0.31	**0.28	1	**0.40	**0.47
6. Vulnerability to Disease	*0.20	**0.34	**0.38	**0.40	1	**0.54
7. Risky Behaviors	**0.30	*0.20	**0.32	**0.47	**0.54	1

* $p < 0/05$, ** $p < 0/001$

According to Table 2, the adolescents' deficit/shame schema had a positive relationship with mothers' narcissism trait ($r = 0.19$) and mothers' Machiavellianism trait ($r = 0.15$), but there was no significant relationship with mothers' antisocial trait. Adolescent dependency/incompetence schema had a positive relationship with mothers' narcissism trait ($r = 0.39$), mothers' antisocial trait ($r = 0.32$) and mothers' Machiavellian trait ($r = 0.31$). Adolescents' vulnerability schema had a positive relationship with mothers' narcissistic traits ($r = 0.21$), mothers' antisocial traits ($r = 0.20$), and mothers' Machiavellian traits ($r = 0.34$). On the other hand, there was a positive relationship between high-risk behaviors of adolescents with mothers' narcissistic traits ($r = 0.35$), mothers' antisocial traits ($r = 0.30$), and mothers' Machiavellian traits ($r = 0.20$). Also, there was a positive relationship between high-risk behaviors of adolescents with their defect/shame schema ($r = 0.32$), dependence/incompetence schema ($r = 0.47$) and vulnerability schema ($r = 0.54$). Therefore, only these variables entered the conceptual model of the research.

In order to investigate the direct and indirect relationships between the variables, first the conceptual model of the research was designed through path analysis using Lisrel software. The direct and indirect relationships between the variables were analyzed based on the value of the beta coefficient (Figure 2) and its significance based on the value of t (Figure 3), and the results are presented in the graphs below.

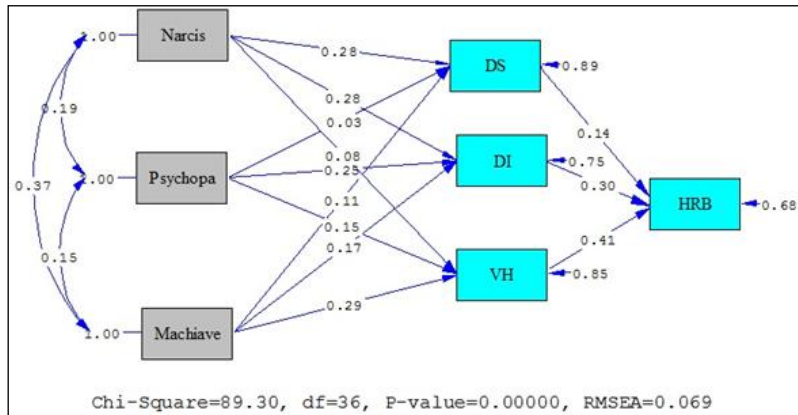


Figure 2: Beta coefficient values in the research path model

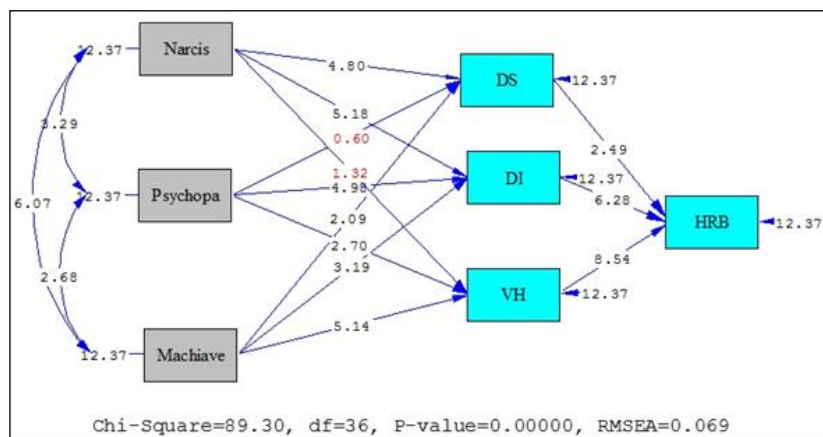


Figure 3: t values in the research path mode

As it can be seen in these two graphs, the narcissistic trait of mothers (Narcis) affects the increase of adolescent risky behavior (HRB) through shame/deficiency schema (DS) and dependency/incompetence schema (DI) so that the increase in the narcissistic characteristic of mothers accompanies the creation of shame/deficiency schema ($\beta = 0.28$, $t = 4.80$, $p = 4.80 > 1.96$) and dependence/incompetence schema ($\beta = 0.28$, $t = 5.18$, $p = 5.18 > 1.96$) in adolescents which in turn causes an increase in risky behavior in teenagers (respectively $\beta = 0.14$, $t = 2.49$, $p = 2.49 > 1.96$ and $\beta = 0.30$, $t = 6.28$, $p = 6.28 > 1.96$). Therefore, dependency/incompetence schema and adolescents' vulnerability schema play a significant mediating role in the relationship between mothers' antisocial trait and adolescents' risky behavior.

Finally, mothers' Machiavellian trait (Machia) affects the increase of adolescents' risky behavior (HRB) through shame/deficiency schema (DS), dependency/incompetence schema (DI) and vulnerability schema (VH) so that the increase in the narcissistic characteristic of mothers goes hand in hand with creating shame/deficiency schema ($\beta = 0.11$, $t = 2.09$, $p = 2.09 > 1.96$), dependence/incompetence schema ($\beta = 0.17$, $t = 3.19$, $p = 3.19 > 1.96$) and vulnerability schema ($\beta = 0.29$, $t = 5.14$, $p = 5.14 > 1.96$) in adolescents, which in turn increases risky behavior in adolescents ($\beta = 0.14$, $t = 2.49$, $p = 2.49 > 1.96$; $\beta = 0.30$, $t = 6.28$, $p = 6.28 > 1.96$ respectively) and $\beta = 0.41$, $t = 8.54$, $p = 8.54 > 1.96$). Therefore, shame/deficiency schema, dependence/incompetence schema, and adolescents' vulnerability schema play a significant mediating role in the relationship between mothers' Machiavellian trait and adolescents' risky behavior.

Discussion and Conclusion

The present study aimed at explaining adolescents' risky behaviors based on the mothers' dark triad personality traits, with the mediating role of early maladaptive schemas. According to the findings, there is a significant positive relationship between mothers' dark triad personality traits and adolescents' risky behaviors. This finding is in conformity with previous research by Moor and Anderson (2019), Wissing and Reinhard (2019), Thartori et al. (2018), Hewitt and Beauregard (2014), and Samadi et al. (2017),

which indicated that parents' personality traits can influence adolescents' tendencies toward risky behaviors.

Moreover, the study found a significant positive relationship between mothers' dark triad personality traits and adolescents' early maladaptive schemas. This result is consistent with the findings of González-Jiménez and del Mar Hernández-Romera (2014), Roelofs et al. (2012), Young (1994), and Pasandideh-Kar and Ghasemi (2019), who suggested that parents' personality traits can impact adolescents' early maladaptive schemas.

Additionally, a significant positive relationship was found between adolescents' risky behaviors and their early maladaptive schemas. This result is in line with previous studies by Marengo et al. (2019), Roper et al. (2010), Vaezi and Khoshroo (2018), Noferesti and Akbari-Zardkhaneh (2013), and Zargar et al. (2011), which showed that early maladaptive schemas could lead to adolescents' engagement in risky behaviors.

Based on this evidence, it was hypothesized in the present study that mothers' dark triad personality traits contribute to adolescents' risky behaviors by creating early maladaptive schemas. The findings revealed that among the various early maladaptive schemas, three schema of shame/defectiveness, dependency/incompetence, and vulnerability serve as significant mediators between mothers' dark triad personality traits and adolescents' risky behaviors. In other words, negative parental traits can indirectly lead to risky behaviors in adolescents through the development of these maladaptive schemas.

According to the results of the path analysis, the narcissistic trait of mothers leads to an increase in risky behavior of adolescents through the shame/defect and the dependency/inadequacy schemas; the increase in the narcissistic trait of mothers is accompanied by the creation of these schemas in adolescents, which in turn causes an increase in risky behavior in adolescents. Therefore, these schemas play a significant mediating role in the relationship between the narcissistic trait of mothers and risky behavior of adolescents. Parents with narcissism personality traits use an aggressive and hostile coping style when their needs are not met. If others do not satisfy their needs or challenge their excessive compensation, they angrily criticize others because they believe in the principle that "the best defense is offense." As a result, the narcissistic mother, with

her inability to exchange love with her adolescent child and her own rejecting behavior towards him, may cause the formation of maladaptive schemas, including defectiveness/shame. The defectiveness /shame schema can cause excessive sensitivity to criticism, blame, rejection, and feelings of shame in relation to internal defects and shortcomings. In order to avoid criticism, rejection, and other things from her narcissistic mother, the adolescent may be influenced by this personality trait of the mother and his/her own schema and engage in risky behaviors or become inclined towards them (Young et al., 2019). On the other hand, narcissistic individuals may feel they are right and as a result, unreasonably urge people to submit to their demands unconditionally. In addition, these individuals are exploitative in interpersonal relationships, meaning they abuse others to achieve their goals (Sadock et al., 2017). Therefore, this mothers' trait may play an important role in the development of adolescents' dependency/inadequacy schema. Since individuals with dependency/inadequacy schema believe that they cannot perform daily responsibilities to an acceptable level without the help of others, and this belief often manifests itself in the form of helplessness (Young et al., 2019), they are willing to fulfill the demands of their narcissistic mother, and it is possible that they may develop a tendency to risky behaviors due to the psychological pressure resulting from the mother's pressures and the fear that the mother will leave them alone in carrying out their daily activities due to the adolescent's disobedience to their mother's demands.

According to the results of path analysis, mothers' antisocial traits affect adolescents' risky behavior through dependency/incompetence and vulnerability schemas. Thus, increase in the mothers' antisocial traits is accompanied by the creation of these schemas in adolescents, which in turn causes an increase in risky behavior in adolescents. Therefore, dependency/incompetence and adolescent vulnerability schemas play a significant mediating role in the relationship between mothers' antisocial traits and adolescents' risky behavior. One of the behavioral criteria of people who are antisocial is that they mistreat others and do not feel remorse. These people use others to implement their plans, plans that include easy ways to get rich, gain fame, etc (Sadock et al., 2017). A mother who has this personality trait is likely to use her child to achieve her goals. Therefore, mothers with this trait, through their particular parenting style, are likely to create maladaptive schemas such as dependency/inadequacy and vulnerability in their children. People with antisocial tendencies also look for people to exploit them for their

own ends, and in this way, they may use deception and trickery to employ others to fulfill their desires (Barlow & Durand, 2017). As a result, an antisocial mother can use deception to make her child dependent on her and then use them for her own ends, leading to the child's engagement in or inclination for risky behaviors. This is because people with a dependency/inadequacy schema believe that they cannot adequately perform daily responsibilities without the help of others and are looking for people to take responsibility for their actions and choices. This can lead to greater dominance by mothers over them. On the other hand, antisocial mothers use all their efforts and calculations to find the strengths and weaknesses of others as much as possible and use both to their advantage, so that they achieve their goals by tricking the other party and in this way they can have a negative impact on the tendency and even risky behaviors in their teenagers; they first become aware of the person's fears and then use them as their weakness and exploit them by threatening them with their fears. This is because people with a vulnerable mindset have several types of fears in their minds, including fear of getting sick or losing their health, fear of danger, fear of going crazy or losing control, and fear of being penniless and homeless. These fears are created in the person due to bad and bitter childhood experiences and deprive the person of a sense of security (Sadock et al., 2017; Barlow and Durand, 2017).

Again, according to the results of path analysis, mothers' Machiavellianism trait affects the increase in risky behavior of adolescents through the shame/defect, dependency/incompetence, and vulnerability schemas. So, mothers' narcissism trait is accompanied by the creation of these schemas in adolescents, which in turn causes an increase in risky behavior in adolescents. Therefore, the shame/defect, dependency/incompetence, and vulnerability schemas of adolescents play a significant mediating role in the relationship between mothers' Machiavellianism trait and adolescents' risky behavior. People with Machiavellian personality traits consider others as weak people who have little control over their situation. In interpersonal situations, these Machiavellians are the ones who take the control in relationships with others because they believe that they can dominate others and get what they want. Among the dark traits of these people are social deception and social immorality. It is conceivable that mothers with this trait are not very successful in raising their children and play an

important role in the formation of maladaptive schemas such as shame/deficiency, dependency/inadequacy, and vulnerability in their children. It is possible that mothers with this trait may even use their children to achieve their own goals and use them for their immoral intentions. Because people with Machiavellian traits value social status because of their interest in the power of obligation, they do things that are conducive to their control and dominance in order to persuade others to listen to them (Corzine and Hozier, 2005). As a result, this mother's control and dominance may cause shame/deficiency, dependency/inadequacy, and vulnerability in children, which makes them more vulnerable to risky behaviors.

In general, the present study aimed at explaining adolescent risk behaviors, based on mothers' dark triad personality traits with the mediating role of early maladaptive schemas. The correlation results showed that there is a significant positive relationship between the types of mothers' dark triad personality traits and adolescents' risky behaviors and early maladaptive schemas. There is also a significant positive relationship between adolescents' risky behaviors and their early maladaptive schemas. On the other hand, the results of the path analysis showed that the shame/deficiency schema, the dependency/inadequacy schema, and the vulnerability schema can have a significant mediating role in the relationship between mothers' dark triad personality traits and adolescents' risky behavior. In general, the findings of the present study can provide some explanations for the question of how parental personality traits lead to adolescents' risky behavior and clarify this unknown relationship.

This study had several limitations: The present study was conducted on adolescents in Malayer City, Hamedan Province, so caution should be taken when generalizing the results to other individuals. The sample included a student population, which does not allow the results to be generalized to other groups, including adolescents who have quit school. Also, the instrument used to collect data in the present study was a self-report questionnaire. Therefore, the limitations of this type of instrument, including the possibility that some respondents may have refused to provide a true answer and have given a superficial and inaccurate answer, should be considered. Considering these limitations and the research background, it is suggested that this study be replicated in other regions and with different cultures, as well as at different ages. In order to examine

how parental personality traits lead to risky behaviors in adolescents, other relevant mediating variables should be considered. Also, based on the results, it is suggested that parent education, especially for mothers, be considered so that parents become aware of their personality traits and the impact of these traits on their children, and reduce the intensity of these effects as much as possible.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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