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The Predictive Roles of Parent-Child Interaction Quality and Inferiority Complex in Adolescent Self-Harm Behaviors: A Correlational Study

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Self-harming behaviors among adolescents are recognized as a significant mental health concern. This study aimed to explore the predictive roles of parent child interaction quality and inferiority complex in adolescent self-harm behaviors. This study was undertaken using a descriptive-correlational design in 2024, with its statistical sample consisting of 492 second-year high school students in Kerman city, who were selected using a multi-stage cluster sampling method. The instruments included the Parent-Child Relationship Assessment Questionnaire (Fine et al., 1983), the Inferiority Scale (Dixon & Strano, 1990) and the Deliberate Self-Harm Inventory (Gratz, 2001). Data analysis was performed using Pearson correlation test along with multivariate regression. The results indicated that parent-child interactions have a significant negative relationship with adolescent self-harming behaviors. Further, a positive relationship was observed between maternal role annoyance/confusion and self-harming behaviors ($p<0.01$). Specifically, maternal positive affect and paternal involvement had a greater contribution to predicting self-harming behaviors among adolescents. The findings also revealed that inferiority complex in adolescents has a significant positive relationship with self-harming behaviors ($p<0.01$), and the social dimension of inferiority complex emerged as an important predictor. These results highlight the critical importance of the quality of family relationships and adolescents' feelings of shame as well as humiliation in the manifestation of psycho-behavioral harms.

Keywords: parent-child interaction quality, inferiority complex, self-harm behaviors.

Self-harm in adolescents is a major public health concern. There are a large number of teenagers who engage in an act of self-harm (McEvoy et al., 2023). Self-harming behavior has a significant impact on the lives of those involved and, in some cases, can be linked to suicidal behavior. Self-harming refers to a set of direct, intentional actions that result in intentional harm to the individual, with the knowledge that it may lead to some degree of physical or psychological harm (Lucena et al., 2022). The act of hurting oneself can be called self-harm, self-mutilation, self-harming conducts and behaviors. Self-harming

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behavior can be understood as a way to reveal conflicts or difficulties, being related to "impulse control and decision-making, as well as the elaboration of strategies to deal with stressful situations and solve problems (Selbach & Marin, 2021). Self-harm includes all intentional acts of self-poisoning (such as drug overdose) or self-harm (such as cutting or burning yourself), irrespective of the degree of suicidal intent or other types of motivation (Witt et al., 2020). The rates of lifetime self-harm in the adolescent population worldwide were as high as 22.9% (Gao et al., 2023).

Self-harm in adolescents is the outcome of a complex interaction between genetic, biological, psychiatric, psychological, social, cultural, and other factors (Özlü-Erkilic et al., 2020). One of the factors that heavily influences the occurrence of self-harming behaviors in adolescents is communication problems with parents (Townsend et al., 2021). Parent–child relationship is defined as a kind of unique and influential relationship established in the process of interaction between parents and their children (Shao & Kang, 2022). In the parent–child relationship, parents' behaviors are guided by an underlying caregiving behavioral system, including a wide range of behaviors with two main functions: providing a safe haven to support the attachment behavior of the child as well as providing a secure base for the child to support her/his exploration (Rinaldi et al., 2023).

The strong emotional bond between parent and child is an important foundation for their emotional and affective development. It has also a significant impact on the development of other personal emotions in children (Chen et al., 2023). Thus, when understanding adolescent self-harm in a

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family context, it is important to recognize the interactive nature of the child-parent relationship (Townsend et al., 2021). Early research on self-harm and parenting focused on family dynamics that may contribute to an adolescent's self-injurious behavior. Family/environmental factors, such as childhood abuse, traumatic family relationships, and parent-child conflict, have been identified as risk factors for self-harm (Ferrey et al., 2016). Meanwhile, negative parental behaviors, such as low parental warmth, excessive criticism, and neglect, have also been strongly associated with adolescent self-harm. Conversely, supportive family environments have been linked to diminished self-harm behaviors (Hu et al., 2025). Li's study noted a positive correlation between parent-child conflict and self-harm in adolescents. (Li, 2025). Further, research has indicated that greater trust, communication, and closeness with the mother were associated with a lower rate of self-harm behaviors, while poor attachment relationships with parents were associated with engaging in or maintaining such behaviors (Jiang et al., 2017). Elsewhere, Yoon et al. reported that parent-child relationships based on warmth, autonomy support, and providing structure were linked to a lowered risk of self-harm, whereas parental rejection, coercion, and anger were associated with an increased risk of self-harm in adolescents (Yoon et al., 2025). Heidari and Mahdavi's research found that parent-child interactions, as an effective factor, can mitigate the severity of self-harm in adolescents and play a protective role (Heidari & Mahdavi, 2025).

Self-harm behavior in adolescents can also be attributed to cognitive immaturity, negative emotions such as failure and humiliation from family and friends, as well as mood disorders

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such as depression (Sadath et al., 2024). People who self-harm often report that they do it to punish themselves or to express self-loathing. Thoughts characterized by shame, inferiority complex, and humiliation are linked to higher rates of self-harm (Nagy et al., 2021). Inferiority has been defined in the scientific literature both as a composite feeling and as a cognitive appraisal. Inferiority represents a mixture of feelings of the brevity of existence, imperfection, incompleteness, powerlessness, worthlessness, disappointment, inadequacy, shame, an emotional experience of rejecting the self, having a low sense of belongingness accompanied with a negative subjective appraisal of oneself as not as good as others (Stoyanova et al., 2025).

Research has noted that inferiority complex and shame in social and interpersonal relationships can result in self-harm. Indeed, self-harm can occur as a response to inferiority complex (Brown et al., 2022). Another study found that people who self-harmed experienced higher levels of shame and inferiority complex compared to those who did not self-harm (Hack & Martin, 2018). The findings of Begdali Mojarad et al. research revealed that feelings of shame, humiliation, and sensitivity to rejection have a positive and direct influence on self-harming behavior in adolescent girls (Begdali Mojarad et al., 2025). Nagy et al. research findings indicated that self-criticism, or thoughts characterized by shame, self-consciousness, and inferiority, is associated with higher rates of irrational self-harm, whereas self-compassion, or the tendency to be compassionate and caring for oneself, is linked to diminished self-harm (Nagy et al., 2021). Another study found that self-esteem, depression, and feelings of worthlessness can predict self-harm in

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adolescents (Lei et al., 2024). Studies also suggest that inferiority complex and body shame have a direct and indirect influence on self-injurious behaviors. So that body shame, especially in its internalized form, has a strong predictive role in the occurrence of self-injurious behaviors in adolescents (Heidari & Mahdavi, 2025). Self-dissatisfaction, feelings of not being understood, temporary psychological exhaustion, depression, anger, anxiety, hatred, as well as suppression of emotions were also strong predictors of self-harm in adolescents (Vafaei et al., 2022).

Self-harm in adolescents can cause irreversible damage during this developmental period and may result in behavioral problems such as delinquency or mental disorders. Also, a history of self-harm, especially with repeated repetition, is the strongest risk factor for suicide in adolescents (Witt et al., 2020). It has also been shown that in spite of a significant decline in its frequency in late adolescence, the risks of long-term mental health problems and high-risk behaviors increase in those who may have engaged in self-harm behavior along their adolescence. Accordingly, prevention, detection, and early intervention of self-harm behaviors are important (Yazici & Hocaoglu, 2023). Thus, through examining parent-child interactions and inferiority complex in adolescents, a more comprehensive understanding of the factors that contribute to emergence of self-harm behaviors can be obtained and the way can be paved for more effective interventions that address both individual and family aspects of this issue. As such, the purpose of this study is to examine whether parent-child interactions and inferiority complex can play a role in predicting self-harming behaviors in adolescents.

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Method

The present study is a descriptive correlational study undertaken in 2024. The statistical population of this research consisted of all students of public high schools in Kerman city. The research sample included male and female students between the ages of 15 and 18, single and married, in the 10th, 11th, and 12th grades of the second secondary school. Since the size of the statistical population in the present study was unknown, the Cochran formula was utilized for the unlimited population size. Cochran's formula in this case is equal to:

$$n=\frac{Z^2 pq}{d^2}$$

z= 1.96 ; p=q=0.5 ; d= 0.05

The required sample size using this formula was estimated to be 384 individuals with an error rate of 0.05. Considering the possibility of questionnaires being lost and for greater generalizability of the results, 500 students were selected using multi-stage cluster sampling. For this purpose, after obtaining the necessary permits from the Kerman City Education Department, 10 schools (5 girls' schools and 5 boys' schools) were randomly selected from all second-year high school girls' and boys' schools in Kerman city, whereby 2 classes were selected from each school and the research questionnaires were distributed. Eventually, 492 questionnaires underwent the final analysis. The objectives of the study were also explained to the students and they were assured that their information would remain confidential. Data collection was carried out through the following questionnaires:

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Parent- Child Relationship Survey

This questionnaire is a 24-question instrument for measuring the relationship between children and their parents, developed by Fine et al. (1983). It has two forms, one for measuring the mother-child relationship and the other for measuring the father-child relationship. The scale is the same in both forms except that the word mother is replaced by father. Nevertheless, different dimensions are evident in the father and mother forms. These dimensions for the father form include: positive affect (questions 3, 14, 18, 24), paternal involvement (questions 1, 2, 6, 9, 10, 16), communication (questions 7, 8, 15, 17) and anger (question 13) and for the mother form; Positive affect (questions 1, 3, 6, 7, 15, 23), role resentment/confusion (questions 9 and 14), identification (questions 3, 13, 21, 24), and communication (questions 4, 5, 7, 8, 15, 17). Scoring is on a 7-point Likert scale ranging from never to very much, and items 9, 13, and 14 are reverse-scored. The lower limit of the test score is 24 while the upper limit of the score is 168. Content validity of the questionnaire was reviewed by Ma et al. (2021) where content validity ratio was greater than .65 and content validity index was greater than .79. After administering the questionnaire to 241 students, the questionnaire creators obtained alpha coefficients of .89 to .94 for the parent-related components and .61 to .94 for the mother-form components (Fine et al., 1983). In the study by Hajisoltani et al. (2024), Cronbach's alpha for the father form was reported to be .83 and the mother-form was 0.80. In the current study, Cronbach's alpha for the father form was reported to be .93 and the mother-form was .92.

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Comparative Inferiority Index

This scale was developed by Dixon and Strano (1990) and consists of two parts: the self-rating scale and the familial scale. Both scales have 30 similar adjectives. Each person is asked to express his/her opinion about these adjectives on a 6-point scale from 1 (strongly agree) to 6 (strongly disagree). In the self-rating scale, the subject completes these adjectives about his/her childhood from number 1 to 30, while in the familial scale, from number 31 to 60, he/she completes the sentences about his/her siblings when he/she was a child. This tool has three components that appraise inferiority complex in three different areas; Physical domain (questions 1, 4, 7, 10, 13, 16, 19, 22, 25 and 28), social (questions 3, 6, 9, 12, 15, 18, 21, 24, 27, 30) as well as goals and criteria (2, 5, 8, 11, 14, 17, 20, 23, 26 and 29). Strano and Dixon (1990) obtained the reliability and validity of this index through Cronbach's alpha coefficient in the self-rating scale equal to .76 and for the family measurement scale equal to 0.81; the obtained values were .82 and .79 respectively through retesting in the self-rating and family measurement scales. Further, Strano and Dixon (1990) to examine the divergent validity of the correlation between the self-assessment scale and the family-assessment scale, they obtained a comparative index of inferiority with the Tennessee self-concept scale, -.356 and -.313, respectively (Samadian et al., 2017). In the current study, Cronbach's alpha value was reported as .73 for the self-rating scale and .76 for the family measurement scale.

Deliberate Self-Harm Inventory (DSHI)

In the present study, the Gratz Deliberate Self-Harm Inventory (2001) was employed to measure the self-harm variable. This questionnaire includes 17 questions about

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common types of intentional self-harm behaviors (hitting the head and face, scratching and piercing the skin, burning, carving and painting on the skin, etc.). Each statement is related to the duration and persistence of these behaviors over the past year. The scoring of this questionnaire is in the form of yes (score 1) and no (score 0). The minimum and maximum scores in this questionnaire are 0 and 17, with higher scores reflecting a higher frequency of non-suicidal self-harm. Gratz (2001) calculated the Cronbach's alpha coefficient of the questionnaire as .82 and its reliability coefficient by the test-retest method as .68. This questionnaire has appropriate construct, convergent, and discriminant validity (Mansouri et al., 2024). In the study by Taghipour et al. (2021) the validity of this test using the internal consistency method was reported to be .83. In the current study, the validity of this test using the internal consistency method was reported to be .81.

In the present research, descriptive statistics methods (mean and standard deviation) were utilized to analyze the data. In order to examine the relationship between research variables, Pearson's correlation test and stepwise regression analysis were applied. SPSS-26 software was used to perform the mentioned analysis.

Results

Table 1 reports the demographic characteristics of the selected sample. The students participating in the present study were 492 with a mean age of 16.56±0.856 years. Regarding gender, 183 were boys and 309 were girls. Also, 477 people were single and 15 people were married. In terms of educational level, 36.7% of students were in the 10th grade, 19% in the 11th grade, and

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44.3% in the 12th grade. Concerning parental education, 41.3% of fathers and 31.5% of mothers had a guidance school degree, 45.5% of fathers and 52.8% of mothers had a high school diploma, 1% of fathers and 0.8% of mothers had an associate degree; finally, 12.2% of fathers and 14.8% of mothers had a bachelor's degree or higher.

Table 1

Demographic Characteristics of the Selected Sample

Demographic characteristics		percentage
Gender	boy	37.2
	girl	62.8
marital status	single	97
	married	3
Level of Education	Tenth	36.7
	Eleventh	19.0
	Twelfth	44.3
Father's education	Guidance	41.3
	Diploma	45.5
	Associate degree	1
	Bachelor's degree or above	12.2
Mother's education	Guidance	31.5
	Diploma	52.8
	Advanced Diploma	0.8
	Bachelor's degree or above	14.8

Descriptive statistics (arithmetic mean and standard deviation) and correlation coefficients regarding variables are outlined in Table 2. Among the subscales of the parent-child relationship, in the father form, involvement had the highest mean (25.03) while anger had the lowest mean (3.40). In the mother form, communication had the highest mean (33.81) whereas role resentment/confusion had the lowest mean (5.69). Among the subscales of inferiority complex, in both the self-assessment and family assessment forms, social inferiority complex showed the

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highest mean (26.81 and 26.71). The mean self-harm score was reported to be lower than the average (3.20). Pearson correlation results indicated that there was a negative and significant relationship between all subscales of the parent-child relationship and self-harming behaviors. Only the role resentment/confusion subscale in the mother form had a positive and significant relationship with self-harming behaviors. Further, a positive and significant relationship was reported between all dimensions of inferiority complex in the self-assessment as well as family assessment forms and self-harming behaviors ($p<.01$).

Table 2
Descriptive Statistics and Correlation Coefficients Regarding Variables

Variables	M	SD	Self-harm
Father positive affect	17.87	5.59	-.13 **
Father involvement	25.03	9.31	-.22 **
Father communication	16.52	7.60	-.20 **
Father anger	3.40	2.09	.02
Mother Positive affect	33.79	9.23	-.28 **
Mother role resentment/confusion	5.69	3.18	.12 **
Mother identification	19.27	5.10	-.25 **
Mother communication	33.81	9.86	-.27 **
physical Self-inferiority	23.95	6.56	.18 **
social Self-inferiority	26.81	6.29	.30 **
goal Self-inferiority	23.79	6.97	.11 **
physical Other-inferiority	22.25	6.60	.17 **
social Other-inferiority	26.71	6.50	.27 **
goal Other-inferiority	23.90	7.31	.13 **
Self-harm	3.20	3.08	1

** Correlation is significant ($p<.01$)

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The results of multiple regression analysis undertaken to predict self-harm behaviors based on parent-child relationship and inferiority complex are provided in Table 3. Skewness and kurtosis indices were employed to inspect the normality of the variables, which reported desirable values. Tolerance and VIF values were reported as normal to examine the collinearity between independent variables. For the dimensions of child-parent relationship, Mother Positive affect (Tolerance=.87 and VIF=1.14), and Father involvement (Tolerance=.90 and VIF=1.10). Also, for the dimensions of inferiority complex, social Self-inferiority (Tolerance=.75 and VIF=1.32), and social Other-inferiority (Tolerance=.78 and VIF=1.28). The value of the Durbin-Watson statistic for checking the collinearity of errors was 1.69, which was an acceptable value.

Table 3
Stepwise Regression Model Coefficients to Predict Self-Harm

Model	R	R^2	R^2 change	F	B	SE	β	t	p
social Self-inferiority	.30	.09	.096	51.800*	.087	.023	.177	3.715	.001
Mother Positive affect	.37	.13	.044	24.859*	-.059	.015	-.175	-3.971	.001
social Other-inferiority	.39	.14	.015	8.593*	.063	.022	.133	2.833	.005
Father involvement	.40	.16	.012	7.289*	-.039	.014	-.117	-2.700	.007

Dependent variable: Self-harm, * p<.01

The results of Table 3 for forecasting self-harm behaviors based on the parent-child relationship and inferiority complex indicated that in the first step, the social Self-inferiority subscale

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was able to explain 9% of the variance in self-harm behaviors, which increased to 13% with the addition of mother's positive affect, social Other-inferiority to 14%, and father's involvement to 16%. The remaining dimensions did not meet the conditions for incorporation into the equation and were removed from the it. Social Self-inferiority with a value of (Beta = .177 and Sig = .001) had the highest contribution to predicting self-harm behaviors, followed by mother's positive affect with a value of (Beta = -.175 and Sig = .001), social Other-inferiority with a value of (Beta = .133 and Sig = .005), and father's involvement with a value of (Beta = -.117 and Sig = .007). Social Self-inferiority and social Other-inferiority were positive predictors, while positive maternal affect and paternal involvement were negative predictors of self-harm behaviors.

Discussion

This study aimed to deal with the prediction of self-harming behaviors based on parent-child relationship and inferiority complex in students. The results revealed that there is a significant relationship between the components of the parent-child relationship including positive parental affection, parental involvement, parental relationship, along with identification and role resentment/ confusion and the mother and self-harming behaviors. Positive maternal affection and paternal involvement showed the greatest contribution to predicting self-harming behaviors. According to the results, the parent-child relationship can play a significant predictive role in adolescents' tendency towards self-harming behaviors. Such that weak family relationships can set the ground for occurrence of self-harming behaviors. This finding aligns with the results of other studies

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(Hu et al., 2025; Li, 2025; Yoon et al., 2025; Heidari & Mahdavi, 2025; Townsend et al., 2021; Jiang et al., 2017; Ferrey et al., 2016). These studies emphasize that parent-child relationships based on warmth, autonomy support, and providing a safe environment are linked to a diminished risk of self-harm, and that rejection, lack of communication, and warmth are associated with an elevated risk of self-harm in adolescents. The findings of the present study are also in accordance with the existing literature, suggesting that harmful behaviors are heavily influenced by family contexts, parenting styles, and communication experiences. Research explaining the relationship between children's self-harm and parental communication style has noted that during adolescence, students experience severe psychological and physiological changes and confront a series of adaptation problems, including physiological maturation, cognitive development, and social role changes (Guoliang & Yu, 2018). Thus, when they fail to cope with family relationships, they may relieve their pain with self-harming behavior (Victor et al., 2012).

In this regard, the psychoanalytic perspective also assumes that self-harming behaviors are rooted in primary attachments. This perspective states that from childhood, the physical experience of being held, fed, soothed, and having one's needs met plays a role in forming a cohesive sense of self. As such, early care disruptions may result in an impaired sense of internal integration, which may emerge as self-harming behaviors. According to the psychoanalytic perspective, self-harm in adolescents emerges as a communication mechanism and is applied to the body instead of being expressed through words. Self-harming behavior inscribes a meaningful narrative on the

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body, in the hope of understanding and responding from parents (Gündoğan, 2024). Interpersonal or systematic models have also noted that self-harming is the result of family dysfunction, and that the family environment of certain individuals will unconsciously promote or strengthen their self-harming behavior (Tao et al., 2020).

The results of the present study also revealed that inferiority complex and humiliation in terms of physical, social, and goals in adolescents have a positive and significant relationship with self-harm behaviors in them. The social dimension of inferiority complex had a greater contribution to the occurrence of self-harm behaviors in adolescents. The findings of the present study align with the results of the study by Sadath et al. (2024) and Heidari & Mahdavi (2025). They emphasize that repeated experiences of inferiority complex and shame towards the body can augment the risk of self-harm in adolescents. These results also accord with a study by Nagy et al. (2021), which found that people who self-harm often report performing it to punish themselves or express self-hatred. The study reported that self-harm in adolescents was linked to self-criticism, or thoughts characterized by shame and inferiority. On the other hand, self-compassion, or the tendency to care for and be compassionate towards oneself, was associated with reduced self-harm.

The findings of this study are also in line with the study by Hack & Martin (2018), Lei et al. (2024), and Vafaei et al. (2022), who reported that higher levels of inferiority complex, self-satisfaction, low self-esteem, and depression can heighten the risk of self-harm in adolescents. In general, most studies have demonstrated that inferiority complex as well as shame in interpersonal and social relationships, especially from family

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and friends, can lead to self-harm in adolescents (Begdali Mojarad et al., 2025; Sadath et al., 2024; Brown et al., 2022), as also found in the present study. Adolescence is considered a peak period for emergence of self-harming behaviors (Goldston et al., 2016). Studies have also documented that the developing adolescent brain interprets inferiority and humiliation differently than an older adult, partly due to biological factors, but largely owing to the priority and need for social approval as well as acceptance from significant others, which is crucial at this stage of development. As an adolescent seeks to achieve independence while trying to form their own identity, acceptance by others is highly valued. Rejection and inferiority by family members and peers can pave the way for potentially self-harming behaviors in vulnerable adolescents ((Sadath et al., 2024).

The integrated motivational-volitional (IMV) model is an important model that can explain the relationship between self-harming behavior and inferiority complex as well as humiliation in adolescents, especially from a social perspective. This model explains self-harming behavior as a process consisting of three stages. In the pre-motivational stage, biological, genetic, and cognitive factors (such as serotonergic neurotransmission and socially prescribed perfectionism) make adolescents vulnerable to self-harming behavior (O'Connor & Kirtley, 2018). Inferiority complex and failure are deteriorated when an interpersonal crisis occurs, and high levels of perfectionism heighten sensitivity to emotional pain. In the motivational stage, negative emotions such as failure and humiliation affect the development of self-harming ideas and plans. Feelings of helplessness arise when an adolescent feels that he or she has no

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way to escape the humiliation or failure inflicted on him or her by himself or herself and society, which in turn predicts self-harming thoughts. In adolescence, increased sensitivity to the negative consequences of peer rejection or social rejection may contribute to the process of self-harm. Ultimately, in the volitional stage, precipitating factors such as access to tools or impulsivity result in the act of self-harm (Sadath et al., 2024).

Overall, the results of this study indicated that the quality of family interactions and adolescents' inferiority complex, especially from a social perspective, can predict self-harm behaviors in them. Thus, identifying family patterns and understanding the psychological mechanism associated with them is of fundamental importance for designing targeted family and preventive interventions in adolescents. In spite of the significant findings of the present study, several important limitations should be considered which could affect the interpretation and generalization of the results. First, the study focused on teenage girls and boys in the second year of high schools in Kerman, which limits the generalizability of the findings to other population groups, teenagers in other cities and regions with different cultures. This is especially important in studies that examine variables such as inferiority complex and child-parent interactions, since cultural and social factors can play a role in the formation of these variables. Further, the usage of a descriptive and cross-sectional method causes the relationships between variables to be analyzed merely as correlations and it is not possible to make a definitive statement about the causality between them. In addition, the research's reliance on self-report instruments, especially in the inferiority complex variable, can result in response bias. It is suggested that

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future research apply longitudinal studies and quantitative-qualitative approaches to track the evolution of the variables studied over time as well as to obtain more accurate results. Also, expanding the sample to other cities and culturally diverse regions can boost generalizability. From a practical perspective, the findings of this study can be an effective guide for developing family-based educational programs in schools and counseling centers. Providing interventions such as parenting skills training to parents and designing psychological interventions in schools with the aim of improving self-esteem and interpersonal skills in adolescents can be effective in mitigating self-harm behaviors in them.

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