Presenting an Aggression Prediction Model in Teenagers based on Family Cohesion and Communication Patterns with the Mediating Role of Resilience

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Abstract

Purpose: the aim of the present research was to present an aggression prediction model in teenagers based on family cohesion and communication patterns with the mediating role of resilience.

Methodology: this cross-sectional study was of correlation type. The research population consisted of second grade high school students of Tehran city in academic year 2019-2020. The research sample consisted of 500 individuals chosen through multistage cluster sampling method. They responded to the following instruments: Novaco Anger Scale and Provocation (Novaco, 1986), communication patterns (Ritchie and Fitz Patrick, 1990), family cohesion (Olson et al., 1985), and resilience (Connor and Davidson, 2003). The data were analyzed by Pearson correlation coefficient and structural equations modeling in SPSS and AMOS 22.

Findings: the results showed that the aggression prediction model in teenagers based on family cohesion and communication patterns with the mediating role of resilience had good fit. Further, conformity-oriented communication pattern did not have a direct significant effect on resilience and aggression in teenagers and indirect significant effect with the mediating role of resilience on aggression in them (P>0.05). However, the conversation-oriented communication pattern and family cohesion had a direct significant effect on resilience and aggression in teenagers as well as indirect significant effect with the mediating role of resilience on aggression in them (P<0.05).

Conclusion: according to the obtained results, for reducing aggression in teenagers, the extent of conversation communication pattern and family cohesion can be promoted in them through organizing educational workshops.

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1. Introduction

Adolescence is one of the very sensitive and important developmental periods because of rapid and diverse biological, cognitive, emotional, psychological, and social changes impairing the teenager's balance (He, Yuan, Sun & Bian, 2019). This period is one of the important periods of human transformation, which is associated with various stressful factors; experience of aggression in different settings during the adolescence period is common and some even regard it as a characteristic common to all teenagers. This has caused increased attention by experts and psychologists to it (Blair, et al, 2021). Aggression is one of the emotional and natural reactions of anyone against frustration and unpleasant situations (Pan, et al, 2022). Aggression is a kind of reaction and activity to a person or object with the aim of inflicting physical and emotional damage to them (Jung & Schroder-Abe, 2019). In another definition, aggression has been defined as conscious verbal or nonverbal behaviors that occur in response to frustration and failure, which intends to inflict pain and suffering or damage and injury to other people, animals, or objects (Casper, Card & Barlow, 2020). Inability in controlling and managing aggression on the one hand results in development of interpersonal problems, crime, delinquency, murder, and violation of others' rights. On the other hand, it can be internalized and cause development of physical and psychological problems including stomach ulcer, depression, and migraine headaches (Wagels, et al, 2022). Generally, aggression is directly associated with many negative variables such as poor adaptation to school, drop out of school, difficulty of emotional regulation, more referral to psychologists and counselors, increased adaptation problems, and difficulty in problem-solving (Wang, Wu & Chong, 2019).

One of the factors associated with aggression is communication patterns, which deals with the way family members interact with each other and make decisions (Refahi, Dastan & Ashrafi, 2020). Family is the smallest and most important social unit in determining the behavioral manner of its members especially children; family is defined as a legislative system whose members are constantly interacting with each other based on the communication patterns formed in it (Soleimanof, Morris & Jang, 2021). Generally, communication patterns of the family have two dimensions of conformity orientation and conversation orientation; conformity refers to obeying the parents and coordinating oneself with them to prevent conflicts and disputes, while conversation refers to discussion, interaction, and opinion exchange between all family members freely in which they express different views (Hall, 2020). In conformity-oriented pattern, emphasis is placed on conformity of feedbacks, values, and beliefs, as well as prevention from clashes and conflicts in the family relationships. In the conversation pattern, emphasis is on repeated and spontaneous interaction, discussion and free opinion exchange about different issues and decision-making based on sympathy (Hanson & Olson, 2018). Thus, in the first pattern, all decisions of the family are made by the parents, and children are expected to be only compliant. Thus, parents feel that they themselves should make decisions for children, and children learn to be reliant on their parents in their own decision-making, and rarely require decision-making skills. In the second pattern, decision-making in the family occurs with all members, and the children are even allowed to discuss with their parents, and express their opinions and suggestions for improving decision-making (Suardana, Surasta & Erawati, 2020). Teenagers who live in families with conformity-oriented pattern have usually more challenge with tobacco products smoking, less resistance to problems, and more addiction. However, the teenagers who live in families with the conversation-oriented pattern have usually less challenge with smoking tobacco, and enjoy greater resistance about problems and suffer from less addiction (Zahabioun & Hoseyni, 2017).

Another factor associated with aggression is family cohesion (Elam, Chassin & Pandika, 2018). Family is a dynamic and active system whose elements or members interact with each other, and as such many researchers and specialists are interested in conducting research on this system (Cheng, Cheung & Chung, 2021). Family cohesion is one of the influential structures of family, contributing to sense of cohesion, as well as emotional bond, and adaptation with each other in a family (Rabinowitz, et al, 2016). Cohesion indicates integrity and agreement in most goals, values, attitudes, and family-associated beliefs, which forms in a social context, and sometimes requires renovation and review (Niehues, Kisbu-Sakarya & Selcuk,

2021). Families with high cohesion frequently allocate times for group activities and family decision-making, and they try to design coherent family plans (Rapp, Lau & Chavira, 2017). Generally, family cohesion has two dimensions of continuity and adaptation; continuous refers to the extent of emotional bond and commitment between family members as well as having emotional relationship, familial interactions, paternal and maternal relations, parental and children relations, the way leisure time is spent, while adaptation refers to the extent of variability in roles, rules, control, and adaptation of families as well as having instability in them (Tung, et al, 2018). Continuity is an indicator for emotional closeness of family members to each other, whose high levels are associated with low levels of parental stress and familial problems. Adaptation is a complex process encompassing changes at different levels, where positive adaptation has good and suitable consequences for both children and parents of the family (Sun, et al, 2020).

One of the variables that can have a mediating role between familial variables and aggression is resilience (Ng, Ang & Ho, 2012). It refers to the person's ability in reestablishing balance in achieving adaptation after incidence of stressful events (Kong, et al, 2021). This construct is one of the variables adapted from positive psychology approach, which refers to a dynamic process, suitable and pervasive adaptation, self-healing, and passing beyond damaging conditions under challenging conditions (Cerit & Simsek, 2021). Residence includes flexibility, improvement, and return to the initial state after confronting adverse conditions including accidents and disasters such as war, flood, drought, or even divorce and death (Shi, Sun, Wei & Qiu, 2019). This construct functions as a protective and resistive factor against high-risk events, and as one of the important personality constructs, plays a key role in understanding motivation, emotion, and behavior (Hou, et al, 2021). Resilience has a direct relationship with many positive psychological characteristics including health, quality of life, adaptation, and hope. It is inversely related with many negative psychological characteristics or problems including anxiety, depression, low self-esteem, and OCD (Xiao, et al, 2019).

Sparse studies have been performed on the relationships between communication patterns, family cohesion, resilience, and aggression, and no research has examined their interrelationships with the mediating role of resilience. For example, the results of Hall, Scharp, Sanders & Beaty (2020) indicated that the conformity-oriented and conversation-oriented communication patterns had a direct and positive effect on resilience of students. Salari Salajegheh, Khezri Moghaddam & Mousavi Nasab (2017) concluded that the conformity-oriented communication pattern had a direct and negative effect on resilience of students, while the conversation-oriented communication pattern offered a direct positive effect on their resilience. Seyedi Saroei, et al (2014) reported that both conformity and conversation-oriented communication patterns had a direct and positive effect on resilience of patients with multiple sclerosis. The results of Vieira (2015) suggested a negative and significant relationship between the conversation-oriented communication pattern and interpersonal violence among girls, and lack of significant relationship between the conformity-oriented communication pattern and interpersonal aggression among them. Elsewhere, Refahi, Dastan & Ashrafi (2020) concluded that the conformity-oriented communication pattern had a positive and significant relationship with aggression among children, while conversation-oriented communication pattern showed a negative and significant relationship with their aggression. Also, Ghasemi, Maktabi & Hajiyakhchali (2018) showed that family cohesion, academic support, and bond with the school had a positive and significant relationship with academic resilience of students. Kiani & Arefi (2015) concluded that family cohesion and flexibility had a direct and significant effect on resilience of students. In another research, Daniels & Bryan (2021) reported that family cohesion and resilience had a positive significant relationship. The results of Elam et al. (2018) suggested a negative and significant relationship between family cohesion and aggression of teenagers in American Mexican and American European families. Siri & Siri (2016) concluded that there was a negative and significant relationship between family cohesion and students' aggression. In another research, Mirzaei Kotnaei, et al (2015) reported that there was a negative significant correlation between family cohesion and children's aggression. In addition, the results of Pundir (2020) indicated that there was

a negative significant relationship between aggression and resilience. Zardoshtian, Karimi & Hosseini (2018) concluded that resilience had a direct and negative effect on aggression among Kung Fu athletes.

Considering the significance and necessity of the present research, it can be stated that adolescence, as one of the most important and sensitive developmental periods, often witnesses aggression during it. Thus, research should be conducted with the aim of predicting aggression for designing plans for its mitigation. Another important point is that on the one hand sparse studies exist about the relations of communication patterns, family cohesion, resilience, and aggression, and no research has explored their interrelations with the mediating role of resilience. On the other hand, the results of studies as mentioned above are discrepant. The results of this research can help health specialists and counselors and even parents better understand the factors affecting aggression among teenagers as well as in providing solutions for its mitigation. Thus, the aim of the present research was to present an aggression prediction model among teenagers based on family cohesion and communication patterns with the mediating role of resilience.

2. Methodology

The present cross-sectional research was of correlation type. The research population consisted of second grade high school students of Tehran city in academic year 2019-2020. The population was about 320,000 individuals, 500 of whom were chosen through multistage cluster sampling method as the sample. In the multistage cluster sampling method, first Tehran city was divided into five regions of North, East, West, South, and center. Then, from among them, districts 1, 4, 5, 12, and 19 were chosen randomly, and then from each district, two schools, and from each school two classes were chosen randomly who responded to the research instruments. To conduct this research, first necessary coordination was done with the headquarters of education of Tehran city, and then sampling was initiated. The importance and necessity of the research were explained for the executive team of the selected schools and subjects. They were also assured about data analysis in general and observation of ethical considerations. Next, the questionnaires were completed by them and the data were prepared to be inputted to the computer. In this research, in addition to demographic information form, the following tools were used.

For measuring aggression, Novaco aggression scale (1986) was used, which had 30 items in three dimensions of aggressive behavior (12 items), aggressive thoughts (7 items), and aggressive emotions (11 items). Each item is scored using a four-degree scale from never with zero score to always with score 3, where the total score of the instrument is calculated by summing up the total score of items, with higher scores representing more aggression. Its content validity was confirmed and its reliability was obtained 0.96 using Cronbach alpha method. Kazemi, Peyman, Kazemie Rezaei & Salehi (2020) reported the reliability using Cronbach alpha method as 0.88. In the sample of this research, the total reliability of the instrument using Cronbach alpha coefficient was calculated 0.75.

In order to measure the communication patterns, Ritchie & Fitzpatrick (1990) communication patterns scale was used. It had 26 items in two dimensions; conformity-oriented communication pattern (11 items) and conversation-oriented communication pattern (15 items). Each item is scored using a five-degree scale from absolutely disagree with score 1 to absolutely agree with score 5, where the score of each dimension is calculated with the total score of items of that dimension, with higher scores representing more of that communication pattern. The construct validity of the instrument suggested presence of the two factors of conformity and conversation, and the reliability of the conformity and conversation dimensions using Cronbach alpha method was obtained 0.89 and 0.79. Farmani & Aflakseir (2020) reported the reliability using Cronbach alpha method as 0.77 and 0.88 for conformity and conversation dimensions respectively. In the sample of the present research, the reliability of conformity and conversation dimensions using Cronbach alpha method was obtained as 0.76 and 0.80.

In order to measure family cohesion, Olson, Portner & Lavee (1985) family cohesion scale was used, which had 40 items in two dimensions of continuity (20 items) and adaptation (20 items). Each item is

scored using a five-degree scale from never with score 1 to always with score 5. The total score of the instrument is calculated by summing up the total score of items, with higher scores representing greater family cohesion. The construct validity of the instrument suggested presence of two factors of continuity and adaptation, and its reliability using Cronbach alpha method for the total as well as continuity plus adaptation dimensions was obtained 0.90, 0.98, and 0.78 respectively. Momeni, Kavoosi Omid & Amani (2016) reported the reliability using Cronbach alpha method as 0.85 for the entire instrument, and 0.74 for continuity. In the sample of the present research, the total reliability of the instrument using Cronbach alpha method was calculated 0.84.

In order to measure resilience, Connor & Davidson (2003) resilience scale was used, which had 25 items. Each item is scored using a five-degree scale ranging from absolutely incorrect with score 0 to absolutely correct with score 4, where the total score of the instrument is calculated by summing up the total score of items, with higher scores indicating greater resilience. The validity of the instrument was confirmed through correlation of each of the items with the total score of the instrument, and its reliability using Cronbach alpha and four-week test-retest methods was obtained 0.89 and 0.87 respectively. Salari Salajegheh et al (2017) reported the reliability as 0.86 using Cronbach alpha method. In the sample of the present research, the reliability of the total instrument using Cronbach alpha coefficient was calculated 0.88.

Once the data were collected with the above instruments, and after their preliminary investigation, they were analyzed by Pearson correlation coefficient and structural equations modeling methods in SPSS and Amos 22 software.

3. Findings

The sample of the present research consisted of 500 second-grade high school students; 267 were female (53.40%) and 233 were male (46.60%). Out of them, 175 studied in the 10th grade (35.00%), 169 in the 11th grade (33.80%), and 156 in the 12th grade (31.20%).Table 1 reports the results of mean, standard deviation, as well as skewness and kurtosis of the research variables

Table1. The results of mean, standard deviation, kurtosis, and skewness of the research variables

Variable	Mean	SD	Skewness	Kurtosis
Conformity communication pattern	33/87	10/20	0/17	-0/62
Conversation communication pattern	41/37	9/69	0/18	-0/49
Continuity	60/42	10/93	0/50	-0/24
Adaptation	62/64	11/50	0/30	-0/48
Family cohesion	123/06	17/67	0/37	-0/31
Resilience	50/46	7/62	0/67	-0/22
Aggressive behavior	18/03	4/42	0/39	0/33
Aggressive thoughts	11/14	3/64	-0/17	-0/80
Aggressive emotions	16/35	5/09	-0/13	-0/70
Aggression	45/52	7/36	0/15	-0/36

Based on the values of kurtosis and skewness reported in Table 1, the data normality assumption was not rejected since the values of skewness and kurtosis lied within the range [-1,+1]. Table 2 outlines the results of correlation coefficient matrix of the research variables.

Table2. The results of correlation coefficients matrix of the research variables

Variable	1	2	3	4	5
1. Conformity communication pattern	1				
2. Conversation communication pattern	-0/46**	1			
3. Family cohesion	0/09	0/37**	1		
4. Resilience	0/13	0/35**	0/52**	1	
5. Aggression	0/17*	-0/43**	-0/59**	-0/68**	1

Based on the correlation coefficients reported in Table 2, the conformity-oriented communication pattern has had a positive significant relationship with teenagers' aggression, while the conversation-oriented communication pattern, family cohesion, and resilience have had negative relationship with it (P<0.05). Thus, there was assumption of normality and presence of adequate correlation to perform structural equations modeling. Table 3 provides the results of fitness indices of the model in the present research.

Table3. The results of fitness indices of the present research model

Indices	χ^2/df	RMSEA	CFI	NFI	GFI	AGFI
Calculated value	2/16	0/05	0/96	0/95	0/95	0/94
Allowable limit	Lower than 3	Lower than 0.1	Above 0.90	Above 0.90	Above 0.90	Above 0.90

Considering the fitness indices reported in Table 3, the present research model i.e. the aggression prediction model among teenagers based on communication patterns and family cohesion with the mediating role of resilience, has had good fitness. Fig. 1 presents the results of structural equations modeling of the present research model alongside the standard coefficients of paths, with Table 4 reporting the results of direct and indirect hypotheses of the present research model.
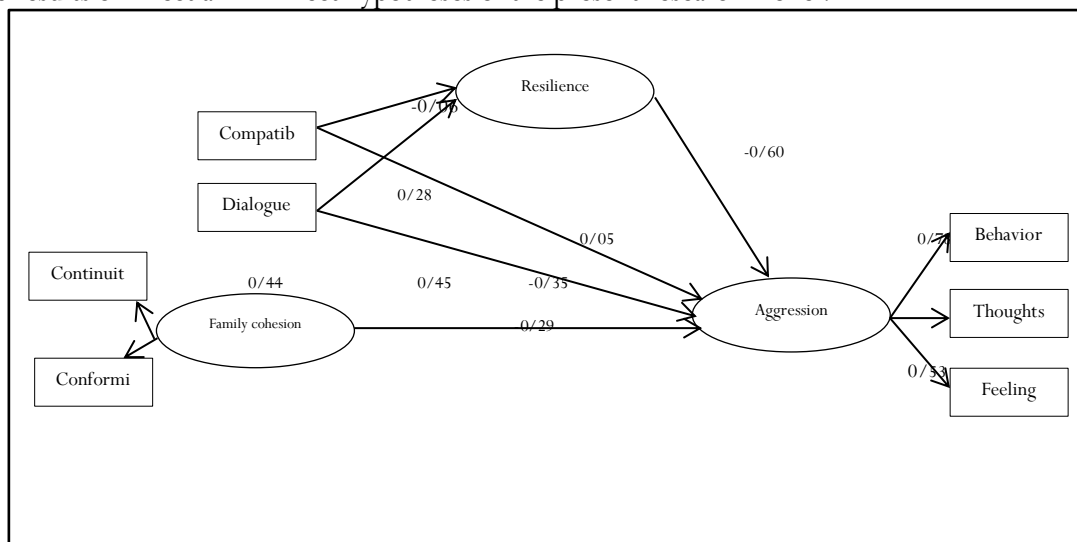

Fig.1. the results of structural equations modeling of the present research model alongside the standard coefficients of paths.

Table4. The results of direct and indirect hypotheses of the present research model

Hypotheses	Beta	t-statistic	Significance
Direct effect of conformity communication pattern on resilience	-0/06	1/20	0/23
Direct effect of conformity communication pattern on aggression	0/05	1/14	0/25
Direct effect of conversation communication pattern on resilience	0/28	2/83	0/005
Direct effect of conversation communication pattern on aggression	-0/35	-7/17	0/001
Direct effect of family cohesion on resilience	0/45	10/11	0/001
Direct effect of family cohesion on aggression	-0/29	-2/89	0/004
Direct effect of resilience on resilience	-0/60	15/34	0/001
Indirect effect of conformity communication pattern on aggression with the mediating role of resilience	0/04	1/11	0/27
Indirect effect of conversation communication pattern on aggression with the mediating role of resilience	-0/14	-2/92	0/003
Indirect effect of family cohesion on aggression with the mediating role of resilience	-0/24	-4/89	0/001

Considering the values of betas of direct and indirect paths reported in Fig. 1 and Table 4, the conformity-oriented communication pattern did not have a significant direct effect on resilience and aggression among teenagers, nor had it an indirect significant effect with the mediating role of resilience on

aggression among them (P>0.05). However, the conversation-oriented communication pattern and family cohesion had a direct significant effect on resilience and aggression among teenagers along with indirect significant effect with the mediating role of resilience on aggression among them (P<0.05).

4. Discussion

The results of the present research suggested lack of direct significant effect of conformity-oriented communication pattern on resilience and aggression among teenagers. These results did not concur with the findings of Vieira (2015), as well as those of Refahi, et al. (2020), Hall et al. (2020), Salari Salajegheh, et al. (2017), and Seyedi Saroei, et al. (2014). In interpreting this lack of congruence of research, it can be stated that the present research has explored the causal relationships between variables, but the previous studies have examined simple relationship between variables. Since causal relations are evaluated by beta value while simple relationship is assessed by correlation value, and for having a significant causal relationship, high values of correlation are required, thus logically in the present research the effect of conformity-oriented communication pattern has not become significant on resilience and aggression, though its correlation value has been significant. In interpreting the lack of significant effect of the conformity-oriented communication pattern on resilience and aggression among teenagers, it can be deduced that families with conformity-oriented communication pattern have a hierarchical structure, where the position of each person is clear in this structure, whereby the children obey the authority of their parents, and in interpreting situations, they are often dependent on their parents. Thus, the development of their decision-making skills may be limited. In families with high conformity-oriented communication pattern, due to worries about disputes and clashes, as well as the wavering of values governing the family, family members inevitably conform to the norms and attitudes of the family, and cannot express their conflicts. The children of such families, outside the home context, either show these same compliant behaviors, or attempt to have others obey them. Due to this dual aspect nature of this situation, on the one hand they do not show aggressive and resilience behaviors against problems, and on the other in order to dominate others, they show aggressive and resilient behaviors against problems. The outcome of all these causes the conformity-oriented communication pattern not to have a direct and significant effect on resilience and aggression among teenagers.

Another result of this research suggested significant direct effect of conversation-oriented communication pattern on resilience and aggression among teenagers. These results concurred with the findings of Refahi, et al (2020), Hall et al. (2020), Salari Salajegheh et al. (2017), Vieira (2015), and Seyedi Saroei, et al. (2014. In interpreting these results, it can be deduced that the characteristics of families with high conversation include having warm and friendly relationships, freedom in expression of emotions, and consultation with each other. Accordingly, the children in these families feel they are approved by the family, and when confronting different challenges and issues, they express their own ideas and opinions, and help the family in decision-making. Thus, they have suitable problem-solving as well as decision-making abilities, and self-confidence. Having such situation is the breeding ground for greater development and flourishing of children. This is because in order for children to have a point to say, they should seek to study and follow more, and they should deal with different challenges and issues, and show less of improper strategies such as hasting and aggression. Thus, these factors through increasing the conversation-oriented communication pattern cause enhanced resilience and diminished aggression in teenagers.

Other results of the present research indicated lack of direct significant effect of family cohesion on resilience and aggression among teenagers. These results were in line with the findings of Daniels & Bryan (2021), Ghasemi, et al. (2018), Elam, et al. (2018), Siri & Siri (2016), Kiani & Arefi (2015), and Mirzaei Kotnaei, et al. (2015). In interpreting these findings, it can be stated that family cohesion refers to the family's ability for cooperation and supporting family members from each other as an available emotional source, especially the one parent provide for children. In such families, support, intimacy, warmness, restraint, and supervision of parents on the behavior of children are observed more. There is minor conflict

between members and parents; group discussion sessions are formed for resolution of complexes, abreaction, and consensus, through which aggressive tendencies are suppressed. Thus, existence of such conditions inside any family leads to effective communication patterns in that family, whereby the children can better use the supportive systems of the family. They also find the opportunity to express themselves without worries and fear of reprehension or punishment, and in necessary cases, through logical and adaptive behaviors, they can defend their rights. Another important point is that children learn effective communication skills by observing the proper performance of parents in their marital relationships as well as the relationships between parents and themselves through imitation and conformity, and internalize them. Through this, they learn suitable strategies in confrontation with conflicts, obstacles, and problems. Hence, the above factors cause family cohesion to have a significant effect on enhancing resilience and decreasing aggression among teenagers.

Another result of this research showed direct significant effect of resilience on aggression among teenagers. This was in line with the findings of Pundir (2020) and Zardoshtian (2018). In interpreting this finding, it can be deduced that those with high resilience show greater tolerance against problems, challenges, and hardships that exist in the path of their growth and development, and also show more persistence for resistance and solving them. In order to achieve their goals, these individuals try more; have greater hope for acquisition of success and solving problems, challenges, and hardships or accepting them. They also see more opportunities in their life for progress and success in all areas of life, and have stronger motivation for success and excellence. For this purpose, they always try to use adaptive coping strategies such as problem-solving, and not to use maladaptive coping strategies such as impulsivity and aggression. Thus, logically resilience would cause significant reduction of aggression among teenagers.

Also, the results of the present research suggested lack of indirect significant effect of conformity communication pattern on aggression with the mediating role of resilience among teenagers. In interpreting this finding, it can be stated that the effect of conformity communication pattern on resilience has been insignificant, while the effect of resilience on aggression has been significant. As such, logically in case the extent of effect of resilience on aggression is even high, this mediating effect of it becomes again insignificant. Hence, the variable of resilience cannot and could not be a suitable mediating variable between the conformity-oriented communication pattern and aggression among teenagers. Further, the results of the present research revealed significant indirect effect of conversation-oriented communication pattern on aggression with the mediating role of resilience among teenagers. Regarding interpretation, it can be stated that the effect of conversation-oriented communication pattern on resilience has been significant, and the effect of resilience on aggression has also been significant. The result suggested that the variable of resilience could be a suitable intermediate variable between the conversation-oriented communication pattern and aggression among teenagers. Another important point is that the effect of conversation-oriented communication pattern on aggression occurs with mediation of cognitive and motivational mechanisms. The cognitive mechanisms include awareness and understanding of suitable solutions and problem-oriented solution, having self-esteem and self-efficacy, while the motivational mechanisms include having tendency and motivation for executing suitable solutions as well as problem-oriented solution and enhancing both self-esteem and self-efficacy. Since resilience is a variable with cognitive and motivational dimensions, thus it can be predicted that it could have a suitable mediating role between conversation-oriented communication pattern and aggression among teenagers.

The most important strong point of the present research was investigating the causal relationships between variables of communication pattern, family cohesion, resilience, and aggression among teenagers. However, most previous studies had dealt with investigating simple relationships between them, and in this regard they did not have much attention to the mediating role of resilience. The most important limitation of the present research was use of self-report tools, difficulty of data collection because of the scattering of the population, and lack of investigation of results for each individual gender. Thus, if possible usage of other data collection methods such as observation and interview as well as conducting research for each

gender is suggested. Based on the results of the present research, communication pattern especially conversation-oriented pattern, family cohesion, and resilience in Iranian culture had a significant effect on aggression. Hence, it is necessary to provide education for correcting and modifying the communication patterns or parenting methods in order to improve them. In addition, family cohesion and resilience should be strengthened through which the extent of aggression among teenagers would decrease.

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