

## The Impact of Educational Intervention on Aggression Level among High School Students in Ilam-Iran

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### Abstract

#### Background

Management and control of adolescence aggression improves constructive relationships, quality of life, and academic achievement. This research aimed to study the impact of educational intervention on reduction of aggression among male high school students in Ilam city, Iran.

#### Materials and Methods

This quasi-experimental intervention study using the pretest-posttest method was conducted on 70 aggressive male high school students in Ilam who were selected using the convenience sampling method. First, students were asked to fill out the Buss-Perry Aggression Questionnaire (BPAQ) and 70 of them with the highest score of aggression were selected as the sample. They received educational intervention for eight 90-minute sessions during one month. Then post-test data were collected and follow-up at three months after the intervention and statistically analyzed using SPSS-20.

#### Results

The mean age of subjects was  $15.81 \pm 1.24$  years old. 83% belonged to the urban community and 12.5% belonged to the rural community. The results showed that the educational intervention was effective in reduction of aggression levels and its four subscales ( $P < 0.05$ ). The results of the within-subject ANOVA indicated that the mean score of overall aggression, verbal aggression, physical aggression, anger, and hostility, follows a linear and descending trend from the posttest to the follow-up ( $P < 0.05$ ).

**Conclusion:** The study findings suggest that development of educational interventions can lead to improved management of aggression and mental health of students.

**Key Words:** Aggression, Educational intervention, High school students, Iran.

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## 1- INTRODUCTION

Adolescence is a transitional stage in the physical and psychological evolution of humans that generally occurs during puberty until adulthood (1). This period is characterized by its own complexities which can affect the psychological health of adolescents. Lack of mental health in this period may interfere with the progress of individuals and their ability to undertake everyday life responsibilities (2). Aggression, depression, and anxiety are three major psychological disorders that affect mental health during adolescence. Although aggression begins at an early age and continues throughout life, its beginning can be generally attributed to adolescence (3). In this period of life, aggression may probably predict delinquency, drug abuse, depression, and academic failure (4). In fact, the anger associated with violence is among the main reasons for referral of adolescents to counseling centers (5).

Aggression refers to observable behaviors with the intention of causing harm that may be expressed as physical (beating), verbal (shouting, offending) or violating the rights of others (6). Aggression involves 4 subscales of physical aggression, verbal aggression, anger, and hostility. Studies have shown that aggression carries many physical, psychological, and social complications and may cause symptoms such as feelings of helplessness and loneliness, social conflict, and disregard for the rights and wishes of others or diseases such as stomach ulcer, migraine, impaired blood pressure, depression, anxiety, and academic failure. People who have behavioral problems such as aggression, not only are afflicted with physical diseases such as headache or gastrointestinal pains but also, are in isolation and loneliness and do not care for social wishes and wills of others (7). Recent studies have shown that aggression

and its associated social harms are increasingly growing in human societies (8). According to studies, aggression is less prevalent among Asian adolescents than Spanish and African American ones and its incidence in both genders is almost the same (9). In a study conducted by Kim (2003) on Korean adolescents, prevalence of aggression was reported to be about 48% (10). In the 15-64 year-old population of Iran, the prevalence of physical aggression and severe aggression (which needs treatment or arresting the victim) was obtained to be about 31% and 1.7%, respectively (11). Torshizi et al. (2012) reported that prevalence of aggression among boys and girls is 54% and 52%, respectively (12). In addition, the prevalence of aggression among Iranian students has been reported almost 27% (13). Given that aggression can cause harmful effects to the physical and mental health of children and adolescents, their attitudes, problems, concerns, and wills should be well understood and the best way should be chosen for dealing with them (20).

Therefore, better understanding of factors affecting aggression among adolescents and development of appropriate programs for the prevention and treatment of this phenomenon seem to be necessary. The most important ways of reducing aggression in adolescents include intervention-based skills, effective communication, problem solving, management of parents, and resistance to peers pressure (22). For example, Oscós-Sánchez et al. (2013) stated that the level of rape and violence showed a reduction in high school students after participating in educational interventions (14). Snyder et al. (2012) reported that increased social and emotional support and personality development significantly reduce the incidence of violence and negative behaviors in students (15). In addition, other studies conducted in Iran have shown

the effectiveness of educational interventions in the control and reduction of anger (16, 18). Hence, the present study aimed to determine the effectiveness of educational interventions in reduction of aggression and its subscales among male adolescents in Ilam city, Iran.

## 2- MATERIALS AND METHODS

### 2-1. Study Design and Population

The present research was a quasi-experimental intervention study using the pretest-posttest method. The statistical population included all male high school students in Ilam city, in the academic year 2015 to 2016.



**Fig.1:** The location of Ilam city, Iran

### 2-2. Methods

Morgan Sample Size Table were used for calculating the required sample size. So 266 students were firstly selected as sample and fill out the Buss-Perry Aggression Questionnaire (BPAQ). Then, based on the questionnaire score, out of 96 students with the highest score of aggression, 70 students who met the inclusion criteria were randomly selected as the sample. Educational intervention was performed in eight 90-minute sessions

on even days of the week for one month. These sessions included lecture, question and answer, individual counseling, and group discussions run by a clinical psychologist. In order to compare and determine the effectiveness of the educational intervention, the subjects were asked to again fill out the study questionnaire at the end of the intervention and three months later.

### 2-3. Measuring tools

In this study, two questionnaires were used for data collection:

**A)** Demographic questionnaire: this scale measures variables such as age, place of residence, parental occupation, parental education, and household income.

**B)** Buss-Perry Aggression Questionnaire (BPAQ): the new version of the Aggression Questionnaire, formerly known as the Hostility Inventory, was revised by Buss and Perry (23). This questionnaire is a self-report tool consisted of 29 items in four subscales of physical aggression (9 items), verbal aggression (5 items), anger (7 items), and hostility (8 items). The questionnaire items are scored based on a five-point Likert scale (from "quite looks like me" to "does not look like me at all"). Two items of 9 and 16 are scored inversely.

The higher scores indicate severer levels of aggression. In the study of the test-retest reliability of the questionnaire, correlation coefficient for physical aggression, verbal aggression, anger, and hostility was reported 80%, 76%, 72%, and 72%, respectively (23). In Iran, Cronbach's alpha, test-retest, and split-half coefficients for this questionnaire have been obtained 89%, 78%, and 73%, respectively. Cronbach's alpha coefficient for physical aggression, verbal aggression, anger, and hostility has been reported to be 82%, 79%, 74%, and 71%, respectively (24).

### 2-4. Inclusion criteria

The inclusion criteria were: studying in the second grade of high school in a public center, non-affliction with mental illnesses certified by a specialist physician, and informed consent.

### 2-5. Exclusion criteria

Exclusion criteria were: taking psychiatric drugs, having serious physical or psychological disease and participation in similar programs in duration of the study.

### 2-6. Ethical considerations

Before beginning the intervention, a written informed consent was obtained from all subjects. Codes were assigned to all subjects and information remain confidential throughout the study.

### 2-7. Data analyses

Indexes of mean, standard deviation(SD), and frequency were used to describe purposes. Furthermore, inferential statistics include within-subject ANOVA and trend analysis were used to determine the changes in aggression and its subscales. The data were statistically analyzed by SPSS-20 at a significance level of 0.05.

## 3- RESULTS

In this study, 70 high school students who were studying in public schools of Ilam in the academic year 2015-2016 were selected as the sample. The mean age of subjects was  $15.81 \pm 1.24$  years old. Out of the subjects, 83% belonged to the urban community and 12.5% belonged to the rural community. In addition, the origin of 4.5% of them was unknown.

In terms of household income, 45.3%, 21.5%, and 4.5% of subjects had a low [up to ten million Iranian Rial (IRR)], average (10-20 million IRR), and high (20 million IRR or higher) household income. In

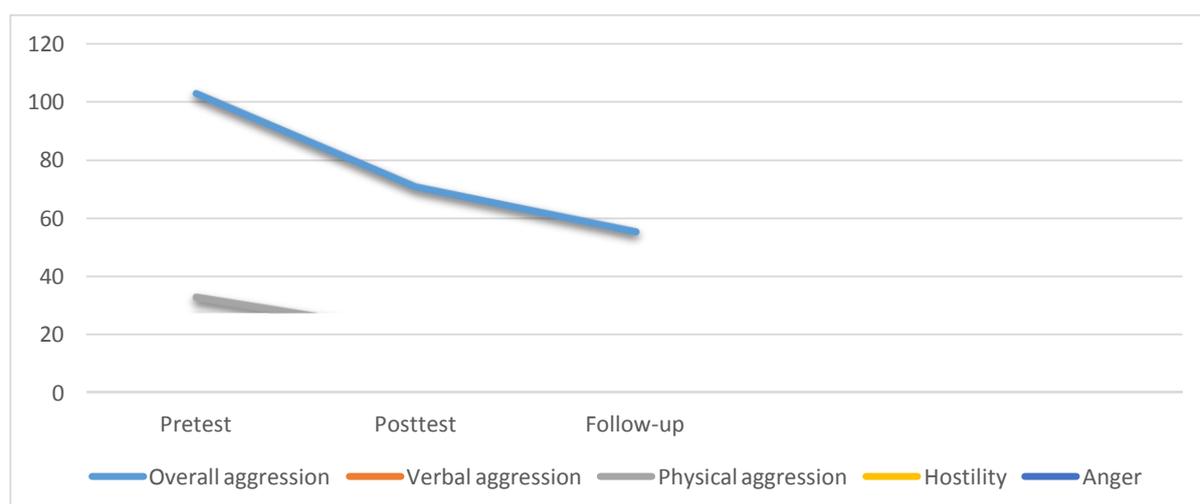
addition, the household income of 28.7% of subjects was unknown. **Table.1** (please see the end of the paper) shows the frequency of subjects based on household income and parental education. As it can be seen, 56.6% of subjects' fathers were self-employed and 87.3% of their mothers were housekeeper. In addition, most parents of subjects had an elementary education level **Table.1** (please see the end of the paper).

The findings related to changes of aggression and its subscales during the study showed that the educational intervention reduced the mean score of these variables one month and three months later. It is noteworthy that mean score of hostility reduced one month after the intervention, but again increased three months later (**Table.2**, please see the end of the paper) ( please see the end of paper).

In order to study the mean difference of regression in three stages of pretest, posttest, and follow-up, the within-subject ANOVA was used. The results of this analysis showed that there was a significant difference in mean score of regression and its subscales between these three stages ( $P < 0.05$ ).

In addition, trend analysis of mean score indicated that there was a linear trend in changes of aggression and its subscales. This means that the mean scores of pretest were lower than those of posttest and mean scores of follow-up were lower than those of both of them.

The within-subject ANOVA also showed that there was a linear trend and significant difference for all subscales of aggression (**Table.3**, please see the end of the paper). In addition, the trend of changes in aggression and its subscales has been shown in **Figure.1**.



**Fig.1:** Changes of aggression and its subscales during the pretest and follow-up

#### 4- DISCUSSION

Adolescence is one of the important stages of human development that accompanied with a lot of Stressors. This period represents the profound changes that separated children from adults and creates different transformations (25). In this period due to physical growth and change in the social structure, emerges inconsistencies between physiological maturity and social maturity and this caused particular problems of adolescents such as aggression (26). Although, aggression is a vital emotion that prepared to deal with potential risks, but associated with adverse consequences. This necessitates to design appropriate interventions for the prevention and treatment of aggression is necessary (27).

Generally, it can be stated that interventions undertaken in the field of aggression aim to inform individuals about aggressive modes and effective ways for controlling them. Previous studies have shown that providing early interventions to students reduce their level of aggression (28). The objective of the present study was to determine the effectiveness of anger management educational intervention on reduction of aggression in male high

school students. The study findings indicated the effectiveness of the educational intervention used in this research in reduction of aggression. This is consistent with the results of previous studies (15-17). For example, in the study of Oscós-Sánchez et al. (2013), the effectiveness of educational intervention in reduction of aggression and its subscales was significant (14). The results of the present study are also consistent with the findings of Moghanlou et al. (2014) who showed that educational intervention is effective in reduction of aggression of guidance school students in Ahwaz- Iran (29).

Furthermore, the educational intervention used in this study showed good efficiency in reduction of physical aggression, verbal aggression, hostility, and anger, as the subjects reported lower levels of aggression three months after participating in the intervention. These findings are consistent with the results of Dehghan et al. (2014) who showed the effect of stress management training on reduction of general aggression and its subscales among university students and also the findings of Kellner and Irma (32, 33).

Another notable finding of the present study was the continuation of therapeutic benefit in the three months follow-up stage. The results show that the intervention used in this study can be considered an effective way for reducing aggression among adolescents in a long term. Dortaj, Masaebi, and Asadzadeh (2009) studied the impact of anger management training on aggression and social adjustment in students aged 12-15 and their results indicated that the positive impacts of anger management still remain in the six-month follow-up (34). Studies conducted by Maleki et al. (16) and Jones and Helen (35) also corroborated the continuation of therapeutic benefits in the follow-up stage.

In explanation of how anger management reduce aggression it can be said that this intervention was organized psycho-educational intervention that run to develop anger management skills and reduce the vulnerability of normal individuals or specific groups of clinical population (36). In this way, the cognitive restructuring and skills such as problem-solving, empathy, relaxation and assertiveness has emphasized (37). Participants learned to correct their false cognition and reduce frequency and intensity of physical arousal that Precedes aggression through relaxation. They expand their treasure of adaptive behaviors. Also, they learned to react to situations stimulating aggression in the adaptive ways (38).

#### **4-1. Study limitations**

Lack of a control group in order to assess and compare the effectiveness of training programs was one of the constraints of this study. Hence, it is recommended that future studies to be conducted on larger samples of students with a control group. Not comparing the intervention group with the control and using only one type of

intervention were other constraints of this research.

### **5- CONCLUSIONS**

In the present study, it was found that development and implementation of appropriate training programs can be effective in reducing aggression among adolescents. The results of this study confirm the behavioral-social cognitive theories on aggression indicating that emotional aggression is controllable and anger control training can be helpful in the control and reduction of anger. Considering the multiple crises of adolescence and its associated tensions, the importance of these finding becomes clearer. Continuation of the benefits obtained from anger management program in the posttest and follow-up stages suggests that such programs can be helpful and effective in reduction and control of aggression and its consequences in this sensitive period of life. Hence, such training programs and intervention are recommended to be taken into account more.

**6- CONFLICT OF INTEREST:** None.

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**Table-1:** Frequency distribution of job and education degree among subjects' parents

Variables	Frequency	Percentage
<b>Father's job</b>		
Unemployed	13	4.8
Clerk	74	27.6
Unknown	150	56.6
<b>Mother's job</b>		
Housekeeper	232	87.3
Clerk	12	4.3
Self-employed	11	4.2
Unknown	11	4.2
<b>Father's education degree</b>		
Illiterate	43	16.3
Elementary school	63	23.8
Guidance school	41	15.5
High school	9	3.4
Diploma	49	15.5
Associate's degree	8	3
Bachelor's degree	26	9.8
Master's degree or higher	13	4.9
Unknown	12	4.5
<b>Mother's education degree</b>		
Illiterate	72	27.2
Elementary school	89	33.6
Guidance school	35	13.2
High school	10	3.8
Diploma	24	9.1
Associate's degree	3	1.1
Bachelor's degree	12	4.5
Master's degree or higher	4	1.5
Unknown	16	6.1

**Table-2:** Mean of aggression and its subscales before the intervention and one month and three months after the intervention

Variables	Before		One month later		Three months later	
	Mean	SD	Mean	SD	Mean	SD
Overall regression	102.91	14.67	70.97	13.15	55.65	9.63
Physical regression	32.85	4.39	21.25	12.02	16.81	3.25
Verbal aggression	17.41	3.55	12.88	11.49	9.68	2.58
Anger	26.2	7.76	17.15	7.38	13.62	4.15
Hostility	26.44	5.83	19.67	10.21	15.51	3.55

SD: Standard deviatin.

**Table-3:** The within-subject ANOVA for aggression and its subscales

Variables	Analysis of Variance	Trend Analysis
Overall aggression	( $f_{(2,9)}=35.855$ & $p=0.001$ & $\eta^2=34.2$ )	( $f_{(1)}=102.736$ & $p=0.001$ & $\eta^2=91.9$ )
Verbal aggression	( $f_{(2,138)}=4.426$ & $p=0.001$ & $\eta^2=0.097$ )	( $f_{(1)}=219.251$ & $p=0.001$ & $\eta^2=167$ )
Physical aggression	( $f_{(2,138)}=45.981$ & $p=0.001$ & $\eta^2=0.40$ )	( $f_{(1)}=565.856$ & $p=0.001$ & $\eta^2=189$ )
Anger	( $f_{(2,138)}=25.171$ & $p=0.001$ & $\eta^2=0.267$ )	( $f_{(1)}=154.086$ & $p=0.001$ & $\eta^2=678$ )
Hostility	( $f_{(2,138)}=10.626$ & $p=0.001$ & $\eta^2=0.133$ )	( $f_{(1)}=180.347$ & $p=0.001$ & $\eta^2=723$ )

**Analysis of variance** (within subject): when subjects are assessed more than twice (for example in pretest, posttest and follow up), this statistical method are best strategy for comparison the means and to determine the effectiveness of the intervention. This method allow to compare more than two means at a time.

**Trend analysis:** when the dependent variable measured in Quantitative basis (Such as aggression in this study), multiple comparisons do not provide sufficient information and trend analysis is a more accurate way to demonstrate changes in dependent variable over time.

**f:** f ratio or variance ratio calculated by division of within group mean square on between group mean square. for Significance of the test, this ratio must be large enough.

**$\eta^2$ :** The significance tests do not show effect size or power of relationship between variables. So indexes are used to determine the effect size of the independent variable on the dependent variable that Eta Square ( $\eta^2$ ) is one of the most important. In fact,  $\eta^2$  shows the amount of change was created in the dependent variable due to the independent variable.