

# Mediating Role of Bullying in the Relationship Between Aggression and Adolescents' Resilience

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## Abstract

This study aimed to explore the mediation effects of bullying on the connection between aggression and resilience among Azerbaijani adolescents. The research involved 623 participants from various regions in Azerbaijan, and data were collected using the Buss-Perry Aggression Questionnaire, the Illinois Bully Scale, and the Brief Resilience Scale. To analyze the data, correlations and a bootstrapping procedure were employed. The results from bootstrapping indicated that the mediating role of bullying (bullying, victim, and fighter) was statistically significant. This implies that bullying, victim, and fighter partially mediated the relationship between aggression and resilience among Azerbaijani adolescents. As a conclusion, to enhance adolescents' resilience, it is crucial to address aggression and bullying. By focusing on these aspects, adolescents' overall resilience can be negatively impacted, leading to improved well-being and performance in the school setting.

**Keywords:** aggression, bullying, resilience, mediational analysis

## 1. Introduction

### 1.1 Introduce the Problem

Bullying is generally explained as a behavior that characterizes the aggression shown by school-aged children towards each other starting from elementary grades. Further it can also occur in senior grades, university, at work, and even in communities where people live together, for example at nursing homes. In the mentioned places, bullying, which explains aggressive behavior towards each other, means to be inclined to harm someone, to scare someone, to force someone do something. In particular, if these behaviors are repeatedly committed against individuals who are powerless compared to others, who have few social privileges, who can be easily humiliated, beaten, and who are not in a position to defend themselves, then they are characterized as cases of bullying (Alikasifoglu et al., 2007). Bullying also occurs periodically rather than once, and typically physically stronger children bully other children (Barhight et al., 2013).

### 1.2 Explore Importance of the Problem

Bullying can be committed in the form of giving someone a nickname, using insults and insulting words, threatening the victims with physical violence if they do not do a certain thing, blackmailing, threatening to harm their belongings or their younger siblings, keeping them out of the group. If we look at the statistics around the world, as a result of surveys conducted among children aged 12-18 years, it was found that 20% of them faced bullying, and 30% of children admitted to bully others in this and other forms (Facts About Bullying 2019). When bullying happens, in 85% of cases, other children around also witness it happening (Barhight et al., 2013). Bullying occurs not only among children at school, but also among university students, bullying cases can also be observed at work places. The analysis of the topic of bullying in the psychological literature shows that bullying occurs as a manifestation of aggression, and the first stages are studied as a form of aggressive behavior. The facts show that in modern times, the increase in aggression among adolescents and young people has become one of the pressing problems of society, and the percentage of aggression among adolescents is constantly increasing. It is so sad that rudeness, obscenity, raising the tone of the voice has become a form of communication in our daily life, and the aggression observed in these cases has become almost sociable.

### 1.3 Describe Relevant Scholarship

Bullying itself includes three concepts: victim, bully, and fighter. Previous studies have tried to find out who is most affected by bullying. Several studies have shown a higher risk of mental health problems among victims of

bullying (Klomek et al., 2010; Reijntjes et al., 2010). So, the worst effects of being involved in bullying have been attributed to the victims of bullying. (Hunter et al., 2014; Wolke et al., 2013; Eisenberg et al., 2015). There is no simple and universal explanation for why some adolescents bully others. Usually victimized children are different in some way (shorter/taller, thinner/fatter, wears 'funny' clothes/glasses, they talk or walk in a 'funny' way) (Mark et al., 2019). Studies have shown that adolescents involved in fighting (Walsh et al. 2016) and bullying (Sousa et al. 2010) also have psychological health risks. Fighting is the most common manifestation of interpersonal violence and aggression in adolescence (Molcho et al. 2004).

It is during adolescence that peer groups become stratified, and issues of self-affirmation and popularity become more and more relevant. Research shows, for example, that toughness and aggressiveness are important status considerations for boys, while looks are a central determinant of social status among girls (Eder, 1995). Therefore, the desire for peer acceptance and status may lead adolescent boys and girls to try to demonstrate their superiority over other adolescents either by nicknames or teasing, thereby increasing bullying (Pronk et al., 2020).

Bullying is aggressive behavior in which individuals in a dominant position intend to inflict mental or physical pain on others (Kim & Leventhal, 2008). Exposure to bullying has been linked to poor mental and physical health (eg, depression and anxiety) (Hertz et al., 2013; Peng et al., 2019). For this, Espelage and colleagues (2013) found that suicidal thoughts and attempts were three to five times higher among victims and perpetrators of bullying compared to uninvolved adolescents. Studies have shown a link between bullying and depressive symptoms (Hertz et al., 2013).

Traditional bullying refers to "any unwanted aggressive behavior by another adolescent or a group of adolescents, involves an observed power imbalance, and is repeated or is likely to be repeated" (Gladden et al., 2014). Recent reports from the World Health Organization (WHO, 2019) found that one-third of school-age children have experienced traditional bullying. In addition, meta-analytic studies have confirmed that traditional bullying negatively affects the academic, social, physiological, and psychological health of adolescents (Arseneault et al., 2010; Glassner & Cho, 2018; Ttofi et al., 2014).

If the manifestations and complications of aggressive behavior in adolescents are not eliminated in time, the possibility of this form of behavior turning into antisocial and deviant behavior increases, and then adolescents are removed from their main activity - education, and the task of raising a useful citizen in society is left in the background (Palacios et al., 2019). In addition to all this, the cases of aggression that occur during adolescence are not only caused by the mentioned factors, but can also manifest themselves as a manifestation of their attitude to the current situation (Chen et al., 2019). Bullying, which includes aggressive behavior, also affects the psychological health of people (Bunnett, 2021). In addition to causing negative changes in the psychological state of the victim, such as depression, withdrawal, antisociality, and suicidal thoughts, bullying also hinders the proper implementation of the training and education process in educational institutions (Bunnett, 2021). As we know, mental health is one of the important issues for each individual, as well as society. During adolescence, the mental health of students emerges as an important issue. In general, mental health refers to the ability of people to use their abilities and skills, to cope with various stresses in life, to function productively and to create cooperation and mutual relations (Nilsson et al., 2023). This is the foundation of social relations (addition). For the development of psychological health, the student must be exposed to risk and adversity and succeed in different areas of life by trying to adapt to the situation, while at the same time possessing some personal qualities that individuals have described as protective factors for psychological health (Öz & Yılmaz, 2009). Mental health also means a positive emotional state with stable characteristic qualities. It is the emotional state - emotional background, negative emotional state that leads to weakening of mental health. Negative emotions, in turn, stimulate the emergence of various forms of pathological behavior. Bullying is a major mental health risk for both individual and public health, and it is increasingly important to monitor its prevention in schools (Barhight et al., 2013).

#### *1.4 State Hypotheses and Their Correspondence to Research Design*

As a result of the research, it was determined that there is a connection between different forms of bullying and aggression and resilience of adolescents. Thus, aggressive behavior can cause bullying, and when adolescents are bullied, their psychological health can decrease. Bullied children can also develop aggressive behavior. Based on these three concepts, the following hypotheses can be put forward in the conducted research:

Hypothesis 1: There is a significant predictive relationship between aggression and bullying.

Hypothesis 2: There is a significant predictive relationship between aggression and resilience.

Hypothesis 3: There is a significant predictive relationship between bullying and resilience.

Hypothesis 4: Bullying acts as a mediator between aggression and resilience.

## 2. Method

### 2.1 Participant Characteristics

The study enlisted adolescent based in Baku, Azerbaijan, as its participants. A total of 623 participants from Azerbaijan took part in this research, comprising 388 females (62.3%) and 235 males (8.1%). The age range of the participants varied from 10 to 17 years, with an average age of 13.33 (SD = 1.66). Fifty percent of the participants rated their course achievement as moderate (n = 402, 64.5%). Among the remaining participants, 30% considered themselves successful in their courses (n = 187), while 5.5% evaluated their performance as poor (n = 34). The majority of the participants reported no violence in the classroom (n = 362, 58.1%), while 31% of them indicated the presence of moderate violence (n = 199). Additionally, 10% of the participants stated that there was a significant amount of violence in the classroom (n = 62). Likewise, the majority of the participants reported no violence at home (n = 460, 74%), with 24% of them indicating the presence of moderate violence (n = 148). Moreover, 2% of the participants stated that there was a significant amount of violence in their homes (n = 15).

### 2.2 Measures and Covariates

In addition to collecting demographic variables such as gender and grade through a self-report questionnaire, this study utilized three established measurement tools to assess various constructs related to aggression, bullying, and resilience.

The Buss-Perry Aggression Questionnaire (BPAQ-SF) was created by Buss Perry (1992) and Bryant and Smith (2001) with the aim of assessing the degree of aggression and predicting violent conduct in individuals. The BPAQ-SF comprises 12 items (such as “At times I lose my temper for no good reason”), which are evaluated on a five-point scale that ranges from 1 (very uncharacteristic of me) to 5 (very characteristic of me). The questionnaire is categorized into four scales: Physical Aggression, Verbal Aggression, Anger, and Hostility.

The Illinois Bully Scale, which was employed to measure self-reported bullying, fighting, and victimization, consisted of 18 items selected based on a comprehensive review of existing bullying and victimization measures. These items were subjected to principal axis factoring (PAF) analysis to determine the underlying factor structure. The analysis revealed three distinct factors, namely the Bullying Scale (nine items), the Fighting Scale (five items), and the Victimization Scale (four items). These factors accounted for 49% of the variance, indicating that they captured a substantial portion of the construct’s variability (Bosworth et al., 1999; Crick, 1996).

The Brief Resilience Scale (BRS) was used to assess the mental resilience of the participants. The brief resilience scale (BRS) consists of 6 items. This scale, developed by Smith et al. in 2008. Items 1, 3, and 5 are positively worded, and items 2, 4, and 6 are negatively worded. The BRS is scored by reverse coding items 2, 4, and 6 and finding the mean of the six items. Respondents rated their agreement with each item on a 5-point Likert scale, ranging from “I strongly disagree” to “I strongly agree. The BRS has demonstrated good internal consistency, with Cronbach’s alpha ranging from .80–.91 (Samples 1–4 = .84, .87, .80, .91, respectively), indicating that the scale items effectively measure mental well-being.

### 2.3 Research Design

Initially, a correlational analysis was employed to explore the connections between aggression, bullying (bullying, victim, fighter), and resilience. Additionally, descriptive statistics such as means, standard deviations, skewness, and kurtosis were calculated using IBM SPSS Statistics version 26. To examine the mediating role of bullying, a bootstrapping procedure was conducted. Following the guidelines of Preacher and Hayes (2008), a bootstrapping analysis with 5,000 re-sampling was performed using Model 4. The aim was to determine the significance of the mediation coefficients, specifically the impact of aggression on resilience, which is influenced by bullying. The indirect effect would be considered significant if the bias-corrected bootstrap confidence interval does not entirely include zero.

## 3. Results

Table 1 displays the descriptive statistics and correlations between the variables. The findings indicate that aggression exhibited a positive correlation with resilience ( $r = -.320, p < .01$ ), signifying that higher aggression was associated with lower resilience among the participants. Moreover, aggression demonstrated positive correlations with bullying ( $r = .495, p < .01$ ), victim ( $r = .371, p < .01$ ), and fighter ( $r = .423, p < .01$ ), indicating that higher aggression levels were related to greater levels of bullying, victim, and fighter. Additionally, resilience displayed negative correlations with bullying ( $r = -.351, p < .01$ ), victim ( $r = -.296, p < .01$ ), and fighter ( $r = -.340, p < .01$ ) suggesting that increased resilience was linked to reduced levels of bullying, victim, and fighter among the participants. Overall, these results highlight the significance of aggression and its relationship with resilience, bullying, victim, and fighter levels.

Table 1. Descriptive statistics and correlations among study variables

Variable	1	2	3	4	5
1. Aggression	–				
2. Bullying	.495**	–			
3. Victim	.371**	.506**	–		
4. Fighter	.423**	.694**	.429**	–	
5. Resilience	-.320**	-.351**	-.296**	-.340**	–
Mean	27.71	10.99	5.80	6.40	38.18
SD	9.69	3.06	2.35	2.25	11.12

\*\*  $p < .01$

### 3.1 Mediation Analysis

The study utilized a bootstrapping procedure to investigate the mediating role of bullying, victim, and fighter in the relationship between aggression and resilience. The results, including the regression pathways, direct effects, and indirect effects, were visually represented in Figure 1. The use of bootstrapping allowed for a robust analysis of the mediating effects, providing valuable insights into the mechanisms underlying the associations between aggression, bullying, and resilience.

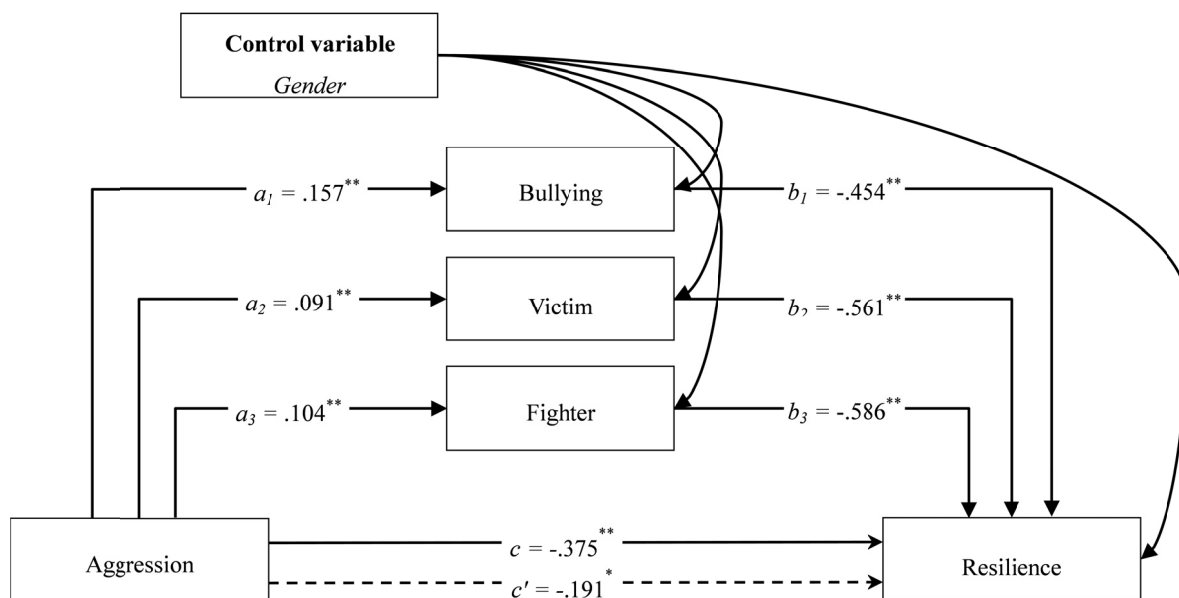


Figure 1. Mediation model

The direct effects analysis, as presented in Figure 1, revealed significant negative predictions of aggression on bullying ( $B = 0.157, p < .001$ ), victim ( $B = 0.091, p < .001$ ), and fighter ( $B = 0.104, p < .001$ ). Furthermore, resilience was found to be predicted by bullying ( $B = -0.454, p < .01$ ), victim ( $B = -0.561, p < .01$ ), and fighter ( $B = -0.586, p < .01$ ). The bootstrap analysis provided additional insights, confirming the presence of indirect effects in the relationship between aggression and adolescents' resilience. The 95% confidence intervals (95%CI) did not include zero for bullying (bootstrap value =  $-.072$ , 95%CI =  $-.146, -.003$ ), victim (bootstrap value =  $-.051$ , 95%CI =  $-.086, -.018$ ), and fighter (bootstrap value =  $-.061$ , 95%CI =  $-.114, -.010$ ), indicating that these factors (bullying, victim, fighter) mediated the link between aggression and resilience among adolescents. These results underscore the importance of bullying variables as mediators in the relationship between aggression and resilience in the context of this study.

## 4. Discussion

According to the first (theoretical) task of our research, the variety of approaches to the concept of aggressive and bullying behavior among adolescents can be noted. A large number of studies, both foreign and domestic are

devoted to these concepts. (Kaliampos, 2022). Bullying is especially problematic in adolescence. The fact that this age is often accompanied by a manifestation of aggressiveness bordering on a neurosis-like state, conflict, knowledge of oneself and surrounding peers, and moral norms are formed can serve as an explanation to that (Kaliampos, 2022). In this research, we aimed to investigate the mediating role of bullying between aggression and mental health (resilience) in adolescents. The obtained results are discussed below.

As most adolescents are quite vulnerable and sensitive, and even emotionally unstable, so, at this age, any violence leaves a strong imprint on their future. For this reason at this age it is essential to perform bullying prevention in order to help adolescents understand how to behave correctly in certain situations. Researchers distinguish bullying prerequisites that cause aggressive or victim behavior in adolescents (Chen et al., 2019). They proceed from the division of such risk factors into personal, family, group, school environment, community or area and cultural factors. Their combination reflects complex individual factors that predetermine the manifestations of bullying and aggressive behavior (Palacios et al., 2019). To consider this problem in more detail, we will turn to the very origins and figure out what scientists, researchers, representatives of various approaches and theories, understood by bullying (Peng et al., 2019).

Most of these theories confirm that bullying is caused by aggressive behavior. Besides that, bullying is understood as a type of destructive interaction, which is manifested in the form of physical and psychological harm to other people (Sourander et al., 2007). Olweus, Fuld and Zmanovskaya expressed the assumption that bullying is a type of behavior in which mental and physical health is harmed (Bochaver & Khlomov, 2013). According to Krivtsova, bullying is the aggression of some children against others, and when there is an inequality in the forces of the aggressor and the victim, aggression tends to be repeated. Krivtsova also believes that the inequality of forces and repetition are two important features of bullying (Rossouw, 2012). There are many reasons why some adolescents bully. Especially often, researchers identify the following reasons: the erroneous idea that aggressive behavior is acceptable; desire to gain authority in the eyes of friends and peers; desire to attract the attention of influential adults; boredom, extortion, compensation for failures in school or social life; through pressure from parents, through abuse and lack of attention to the child. Also, quite often adolescents consider bullying as one of the most effective ways to become popular, to have an influence on others, to get attention, and to make others afraid of them (Sourander et al., 2007).

Aggression is a form of response to difficult life situations and a stable personality trait, which is manifested in a willingness to express aggressive behavior. Adolescents tend to be aggressive for a number of reasons (Demir, 2023; Falla et al., 2021). Besides that, aggressiveness can also be one of the symptoms of adolescence crisis. We strongly believe that aggression acts as a kind of defensive or protective reaction in order to protect one's own rights, speak about one's own desire to be an adult and insist on a respectful attitude towards oneself (Due et al., 2005). Also, aggressiveness can be considered a consequence of the fact that a adolescent does not cope with the resulting age-related difficulties. Enikolopov believes that aggressiveness in adolescence is determined by its specific features of formation, which exceeds the degree of severity of aggressiveness inherent in adults (Muetzel et al., 2019).

Dan Olvaeus, who first systematically studied bullying, defined it as purposeful, repetitive aggressive behavior directed against someone who is unable to defend himself (Falla et al., 2021). According to UNESCO, one third of children worldwide are bullied in one form or another (UNESCO, 2019). As it is known, any kind of bullying affects the mental health of bullies and leaves both long-term scars and short-term damage. Bullying's impact on health causes great damage to the person himself, his family and society as a whole. So, prevention of bullying can be financially beneficial for both the family and society (Quinlan et al., 2018).

Psychological resilience is defined as the ability of humans to adapt to negativities and the skills of coping with the negativities (Karairmak & Siviş, 2011; Kutuk, 2023) and is examined based on the risky and difficult life events during childhood and adolescence periods (Gizir, 2007). Adolescents can be protected from negative psychological outcomes by psychological resilience. Specifically, it may impact the psychological health of individuals through the appraisal of stressors, meta-cognitions in response to felt emotions, and selection of coping strategies (Fletcher & Scott, 2010). According to the previous research high psychological resilience can improve school adjustment (Zhang et al., 2019; Satıcı et al., 2023) and alleviate depression and anxiety in adolescents (Anyan & Hjemdal, 2016). For this reason, the study of psychological resilience in adolescent students is of great importance.

Bullying is one of the factors affecting psychological health (resilience) (Cerit & Şimşek, 2021). The effects of bullying on mental health can be both short-term and long-term—many years later. We can divide bullying consequences into two main groups: internal and external problems. Internalizing problems are problems that are

directed at a person and are inside him (Sapouna & Wolke, 2013). These include depression, withdrawal, fear, anxiety, self-harm, and more. Externalizing problems refer to behavior directed towards others. These include substance abuse, aggressive behavior, impulsive behavior, and more. Internalization problems are more common in girls. Externalization problems are more common in boys (Muetzel et al., 2019). So, our research showed that aggression influences bullying behavior. Various psychological problems in adolescents can be caused by constant bullying. This period requires psychological resilience to cope with problems specific to this developmental period and the tendency toward risky behaviors (Cerit & Şimşek, 2021).

In promoting resilience to bullying peer relationships may also play a crucial role. For example, bullied adolescents who report high levels of support from peers are more likely to maintain appropriate academic achievement for their age group compared to those with low peer support (Rothson et al., 2011; Wang et al., 2011). Resilience has been neglected in bullying research (Sapouna & Wolke, 2013), and, as a result, it is not currently known how some bullied students manage to bounce back and function well over time despite their negative experience. Studies that have investigated resilience to child maltreatment find that 12–22% of children or adults who were abused as children manifest better outcomes than expected given their experiences of abuse (Jaffee et al., 2007).

#### 4.1 Limitation

The research has specific limitations that should be considered when interpreting the results. First, the data were obtained from self-reported surveys, which are prone to subjective methodological biases (e.g., memory recall, social desirability). Second, the research sample is biased against the females, which may affect generalizability. Third, the data were cross-sectional, so all results are associative, and thus causal relationships between variables could not be inferred. Fourth, the participants were school students with no clinical characteristics, so the results can only be generalized to some of the population. Fifth, the sample consisted of high school students, so the findings may not be generalizable to adults. Sixth, the study did not include test-retest reliability. Finally, some types of validity (eg, convergent and divergent validity) were not examined.

#### 4.2 Conclusion

In this research, we investigated the relationship between aggression, bullying and mental health in adolescents in Azerbaijan. In the research, we determined that there is an interaction between aggression and mental health in adolescents in Azerbaijan. According to the results of the research, bullying plays a mediating role here. In other words, a direct relationship between aggression and bullying and an inverse relationship between bullying and mental health have been identified in adolescents. That is, the higher the aggression in adolescents, the more likely it is to increase bullying, which leads to a decrease in mental health.

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### Authors contributions

Elnur Rustamov: Conceptualization, design, analysis, writing, final approval, supervision. Ulviyya Nahmatova: Writing, data acquisition, data analysis/interpretation, statistical analysis, drafting manuscript. Narinj Rustamova: Writing, critical revision of manuscript, statistical analysis. Matanat Aliyeva: Technical and material support. All authors: Editing, reviewing, final approval.

### Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Informed consent

Obtained.

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**Data sharing statement**

No additional data are available.

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