

## The Relationship between School Bullying and Self-Esteem among Middle School Students

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### Abstract

The present study examined the relationship between school bullying and self-esteem among middle school students. It aimed to investigate the association between the level of peer bullying experienced by students and their self-esteem, as well as to identify the effects of gender, age, and school year on both bullying and self-esteem. The study sample consisted of 165 students selected from several middle schools in the Wilaya of Djelfa, Algeria, including 75 males and 90 females. The study employed the Githaus Peer Bullying Scale and the Coopersmith Self-Esteem Inventory, both of which demonstrated satisfactory validity and reliability. The findings revealed a negative correlation between bullying and self-esteem. No significant differences were found between males and females in either bullying or self-esteem. However, significant differences in bullying were associated with age and school year, whereas self-esteem differed according to school year but not age.

**Keywords:** school bullying, self-esteem, middle school students, adolescence.

### Introduction

Adolescence is considered a sensitive stage of human life. Perhaps such sensitivity and importance in terms of care and consideration is that it constitutes a transitional period between childhood and adulthood. The adolescent is neither the child who receives extensive care and intensive guidance nor the adult who enjoys material and psychological independence and the ability to make decisions, with all that this provides in terms of self-satisfaction and self-fulfilment. Consequently, the adolescent fluctuates between what is desired and what can actually be attained. Existential questions emerge through which the adolescent searches for the self, which at times inclines toward distinction from others and at other times toward adopting the values of the peer group. Conflicts arise between these two poles, as does impulsiveness in behaviour or withdrawal, all of which contribute to the formation of self-esteem while also being an outcome of it. Among impulsive behaviours, bullying emerges as a form of conduct that significantly affects both the victim and the perpetrator. Bullying behaviour is associated with self-esteem among both parties. According to certain studies, such as that of Mohamed Cherbet and others (2018), the prevalence of bullying among secondary school students is observed to be particularly marked at the middle school stage, with the goal

of drawing attention to the phenomenon of school bullying, its prevalence, and its harms to develop plans through preparing the school environment and helping students confront it.

“The phenomenon of school bullying witnessed widespread prevalence at the end of the twentieth century and the beginning of the twenty-first century in both developed and developing countries. In Australia, one in six students within the age group (9 to 17 years) is exposed to bullying. According to statistics from the American Psychological Association, 160,000 pupils are absent from school for fear of being subjected to bullying. According to global statistics, between 15% and 25% of pupils are exposed to bullying. In Algeria, it is difficult to find a school that is free from this phenomenon in its various forms” (Mubarak & Ben Salem, 2022, p. 691).

Because self-esteem is a distinguishing characteristic of every schooled individual and explains productive behaviour, a person’s view of the self, thoughts about it, and the judgments made about the self and one’s ideas determine the nature of his or her adjusted or maladjusted behaviours toward others.

### **1. Problem statement**

The school is regarded as the second institution of a child's socialisation, whereby the child acquires the designation of a pupil or learner. The Algerian school system is divided into three compulsory stages: primary, middle, and secondary education.

The role of the school is considered complementary to that of the family in the pupil's upbringing and in equipping the pupil with educational knowledge and social skills. Each educational institution has its own characteristics. Thus, primary school is marked by relative stability in the number of teachers involved in teaching the learner, a reduced weekly timetable, the nature of the learning content, and the developmental characteristics of the child at this stage, which extends from 6 to 11 years of age. The child then moves to the middle education stage and is confronted with new changes, finding diversity in the number of subject teachers, the organisation of teaching periods, and the level of knowledge needed. In addition, the child’s body undergoes accelerated growth during puberty. All of these factors cause the child to experience “a difficult age period, namely, adolescence, a stage of psychological, social, and academic crises that affect their lives, as the student's personality has not yet been fully formed” (Hachem, 2024, pp. 406–407).

Attitudes begin to develop and crystallise, and perhaps the most important attitude to crystallise is the attitude toward the self and its evaluation, resulting in either satisfaction with the self or rejection of it, depending on whether the attitude is positive or negative. Thus, adolescents’ self-esteem becomes apparent in terms of both form and content. Rogers (1969) saw that self-esteem is the individual's perceived attitude toward the self, with both behavioural and emotional components.

What makes self-esteem important is that it constitutes an urgent need for the individual, who seeks to place it at the top of the hierarchy of needs, as Maslow maintained. Herein lies the importance of attending to the factors that lead to high self-esteem and of identifying the negative influences upon it. Among the most important associated behavioural manifestations is bullying. This behaviour is exhibited by an aggressor who lacks self-esteem and attempts to obtain it through intimidating and humiliating the other, namely, the victim, who in turn does

not defend himself or herself against the harm because he or she sees the self as weak and does not value it as it ought to be valued. The victim, therefore, submits and falls under the weight of abuse, and the situation becomes increasingly critical. This was confirmed by the study by Ali Abdelsamie and others (2021), entitled “*School bullying behaviour and its relationship to self-esteem among pupils in the first cycle of basic education in Egypt*”. The results revealed a negative correlation between bullying behaviour and self-esteem and revealed differences in bullying behaviour between males and females in general. Physical bullying and property destruction were found to be prominent among males. In contrast, social, verbal, and psychological bullying were more prominent among females, together with differences in self-esteem in favour of females.

A study conducted by Boughrane and Talbi in Tlemcen (2023) examined cyberbullying and its relationship to self-esteem among first-year secondary school pupils. Its findings indicated a negative inverse correlational relationship between cyberbullying and self-esteem, such that the higher the level of cyberbullying is, the lower the level of self-esteem.

Statistics in studies indicate the marked spread and aggravation of bullying among pupils. As stated in the UNICEF report of 2018, bullying hinders the education of 150 million students aged 13 to 15 years worldwide; that is, 50% of the world's children are subjected to bullying by their peers in schools, and one in every three students suffers from peer bullying. Three out of ten students admitted to bullying their peers in 39 industrialised countries (Kheiri Ahmed et al., 2024, p. 110). Hence, the present study aimed to answer the following questions:

## **2. Study questions**

### **2.1. General question**

Is there a statistically significant correlation between the level of peer bullying directed at the individual and the level of self-esteem among middle school pupils?

### **2.2. Sub-questions**

1. Is there a difference in the level of peer bullying directed at the individual attributable to the variable of gender among middle school pupils?
2. Is there a difference in the level of peer bullying directed at the individual attributable to age among middle school pupils?
3. Is there a difference in the level of peer bullying directed at the individual attributable to the variable of school year among middle school pupils?
4. Is the difference in the level of self-esteem attributable to the variable of gender among middle school pupils?
5. Is there a difference in the level of self-esteem attributable to age among middle school pupils?
6. Is the difference in the level of self-esteem attributable to the variable of school year among middle school pupils?

## **3. Hypotheses**

### **3.1. General hypothesis**

There is a statistically significant correlation between the level of peer bullying directed at the individual and the level of self-esteem among middle school pupils.

### **3.2. Sub-hypotheses**

1. There is a difference in the level of peer bullying directed at the individual attributable to the variable of gender among middle school pupils.
2. There is a difference in the level of peer bullying directed at the individual, attributable to age, among middle school pupils.
3. There is a difference in the level of peer bullying directed at the individual, attributable to the school year variable, among middle school pupils.
4. There is a difference in self-esteem levels attributable to gender among middle school pupils.
5. There is a difference in self-esteem levels attributable to age among middle school pupils.
6. There is a difference in self-esteem levels attributable to the school year variable among middle school pupils.

### **4. Significance of the study**

This study has both theoretical and practical significance.

It examines a serious negative behavioural phenomenon that has begun to spread in school settings and identifies its adverse consequences for adolescents' psychological functioning.

It draws the attention of those responsible for educational institutions to the necessity of combating this phenomenon and addressing it by highlighting its harmful aspects.

It directs researchers to conduct more in-depth research on bullying and to cover the topic more comprehensively.

This highlights the importance of a safe school environment for sound psychological development.

It highlights the role of psychologists and researchers working in the school context in shedding light on pupils' interactions and their overall impact on adolescents' psychological structures.

### **5. Objectives of the study**

The study aims to identify the following:

Relationships between bullying levels and self-esteem at the middle school stage.

Effects of gender, age, and school year on bullying among the sample.

Effects of gender, age, and school year on self-esteem among the sample.

### **6. Operational definitions of the study variables**

#### **6.1. School bullying**

It is the score the pupil obtained on the Githaus Bullying Scale administered during the field study.

#### **6.2. Self-esteem**

It is the score obtained by the pupil on the Coopersmith Self-Esteem Scale administered in the field study.

### **7. Theoretical framework of the study**

#### **7.1.1. School bullying**

Olweus Dan (2012) defines it as “a student being exposed to intimidation by another student or several students through saying mean and hurtful things, making fun of him or her, calling him or her bad and hurtful names, excluding him or her from a group of friends, or deliberately leaving him or her out of things; hitting, kicking, pushing, or locking him or her inside a room; telling lies or spreading false rumours about him or her; sending mean notes; trying to make other students dislike him or her; and other hurtful things of that kind, or bullying through email, instant messages, chat rooms, a website, or text messages via mobile phone” (pp. 4–5). Abou El Diyar (2012) maintains that “bullying is a set of behaviours issued by an individual or a group, in which words and actions are used, such as repeatedly making mocking and provocative remarks about the victim’s colour, appearance, or clothing in a loud voice for others to hear because of jealousy or racism ... or isolating him or her from friends, threatening him or her inside or outside the school, or hitting, pushing, and other such practices” (p. 34).

### 7.1.2. Criteria for diagnosing bullying

Olweus Dan (2012) considers the following criteria to be the basis for diagnosing bullying behaviour and distinguishing it from other negative violent behaviours:

- Intentionality.
- Repetition.
- An imbalance of power between the perpetrator (offender) and the target (victim).

### Causes of bullying:

Many theories attribute the principal causes behind the spread of bullying in schools to changes occurring in human societies related to the emergence of violence and discrimination in all its forms, the disturbance of family relationships in society, the influence of the media, increasing poverty, and low-income family control over the behaviour of bullies (Sayhi, 2018).

### 7.1.3. Manifestations of bullying

- **Physical manifestation:** represented as hitting, kicking, and pushing.
- **Verbal manifestation:** appearing in insults, abuse, threats, rumours, accusations, and mocking nicknames.
- **Material manifestation:** This is represented as stealing the victim’s belongings, taking possession of them, or damaging them.
- **Social manifestations,** such as exclusion from groups of friends, classmates, and neighbourhood children, may be direct, involving the previous manifestations explicitly and directly toward the victim, or indirect, involving the same manifestations but not directed toward the victim.
- **Technological** manifestations include the use of the internet through social networking sites and email (Abd al-Sami et al., 2021).

## 7.2. Self-esteem

### 7.2.1. Definition of self-esteem

The concept of the self came to occupy a central position in psychology in William James's (1890) *The Principles of Psychology*. Since the twentieth century, most psychological theories have adopted the concept of the self in the study of personality and psychological adjustment, and even Freud considered the self to be the centre of the psychological apparatus (Ali Abdelsamie et al., 2021, pp. 546–547).

Briggs defines self-esteem as the way a person feels about the self and his or her general judgment of it, that is, the extent to which the person likes the self (Mubarak & Ben Salem, 2022, p. 697).

Coopersmith maintains that self-esteem is an expression of approval or disapproval of the self; it indicates the extent to which the individual believes himself or herself to be capable, worthy, and significant. It is a subjective experience expressed verbally and through important behaviours. Here, self-esteem refers to self-evaluation, and this term leads us to speak of the individual's judgement of his or her outcomes, abilities, and characteristics in accordance with a system of personal values and standards (Coopersmith, 1984, pp. 6–7).

### 7.2.2. Levels of self-esteem

- **High self-esteem** refers to the self being regarded as important and worthy of respect and esteem. Individuals at this level also display greater challenges and confrontations than others do.
- **Low self-esteem:** feeling unimportant and unworthy of love. Individuals at this level are unable to do things they would like to do and believe that others are better than they are and possess greater abilities.
- **Moderate self-esteem:** Here, the individual falls between the two previous levels (Mubarak & Ben Salem, 2022, p. 698).

### 7.2.3. Importance of self-esteem

Adopting a positive attitude toward the self is an important, effective, and active factor in personality. Physicians have reported that individuals who doubt their own worth are unable to achieve a harmonious emotional life because they fear that their flaws will be exposed and that they will consequently be rejected. They therefore avoid any emotional relationships and ultimately experience feelings of isolation.

Studies have shown that individuals whose achievements do not match their aspirations regard themselves as inferior, regardless of their level of achievement. They thus experience guilt or even depression, judge their results to be inadequate, and consider them unsuccessful.

Many clinical studies on anxiety indicate that one of its principal causes is the feeling of inadequacy and failure to meet the individual's aspirations. Anxiety and self-respect are closely related, since if a threat is what indeed arouses anxiety, it is because self-respect is under threat. The desire to achieve high social status or strong social recognition stems from a desire to acquire a positive self-image.

It has been established that creative individuals possess high self-esteem, as confidence is an important element of creativity. Individuals with high self-esteem are more likely to assume active roles in social groups, to express themselves freely and effectively and to achieve their personal goals more easily (Coopersmith, 1984).

## 8. Field procedures

### 8.1. Place and time of the pilot study

The third term was selected because the pupils had already spent a long period of time interacting with one another. The study was therefore conducted during the first academic week of May in the 2024/2025 school year at Martyr Reggab kouider Middle School in the city of Djelfa.

**8.2. Characteristics of the pilot study sample**

The pilot study sample consisted of 62 male and female pupils at the middle school stage across different school years. They were selected by convenience sampling. Females accounted for 54.8% of the sample, whereas males accounted for 45.2%. This was done to verify that the two study scales possessed the psychometric properties required for scientific research, namely, validity and reliability.

**9. Study instruments**

**9.1.1. The Githaus Bullying Scale**

The Githaus Scale was adopted. It consists of 12 items covering the following dimensions: verbal, social, and physical bullying (Ibrahim Saad, 2024, pp. 183–185).

It was developed within the Githaus Project in Australia in the late 1990s to measure the prevalence of bullying among students and its recurrence over the previous three months. It has been used in several international studies to measure bullying (Bond et al., 2007).

**Table 1:** *Dimensions of the bullying scale*

Items	Dimension
1–3	Verbal bullying
4–9	Social bullying
10–12	Physical bullying

**9.1.2. Scoring Procedure**

Five response alternatives were adopted to express the degree to which the characteristic represented in each item was present. Taken together, these findings reflected the extent to which the pupil believed he or she had been exposed to bullying and was aware of it. The scale included a set of positively and negatively worded items, and the scoring direction was as follows:

**Table 2:** *Response Alternatives for the Githaus Scale*

Statements	Less than once a week	Once a week	Most days	Yes	No
In the direction of the trait	3	2	1	1	0

**9.1.3. Validity of the Scale**

The internal consistency validity was examined by calculating the correlation coefficients between each item and the dimension to which it belongs (see Table 3).

**Table 3:** *Internal Consistency Validity of the Bullying Scale*

No.	Scale items	<i>r</i>
	First dimension: Verbal bullying	
1	Has anyone upset you or called you names recently?	.50**
2	How often did that happen?	.45**
3	How upsetting was it when you were teased?	.48**
	Second dimension: Social bullying	
4	Has anyone spread rumours about you recently?	.49**
5	How often did that happen?	.65**
6	How upsetting were the rumours?	.56**
7	Have you been deliberately excluded recently?	.36**

8	How often did that happen?	.52**
9	How upsetting was the exclusion?	.45**
	Third dimension: Physical bullying	
10	Have you recently been physically threatened by another pupil?	.39**
11	How often did that happen?	.52**
12	How upsetting was the physical threat?	.33**

Note. SPSS Version 22 output. All correlation coefficients were statistically significant at the .01 level, indicating satisfactory internal consistency and supporting the instrument's applicability.  $p < .01$ .

#### 9.1.4. Reliability

The reliability of the questionnaire was calculated using Cronbach's alpha coefficient, as shown in the following table:

**Table 4:** Reliability Coefficient Values

Variables	Number of items	Cronbach's alpha coefficient
Bullying scale	12	.69

Note. SPSS Version 22 output.

As shown in Table 4, the Cronbach's alpha for the bullying scale was .69, indicating high reliability.

#### 9.2.1. Coopersmith Self-Esteem Inventory

The Coopersmith Self-Esteem Inventory, developed by the American researcher Stanley Coopersmith, was adopted. The first version was developed in 1967, and the second, in 1984, was revised by the Centre of Applied Psychology in France. The inventory consists of 58 items covering the following dimensions: general self-esteem, family self-esteem, school self-esteem, social self-esteem, and the lie scale (Coopersmith, 1984). The researcher translated it from French to Arabic, and two language professors reviewed the translation.

**Table 5:** Dimensions of the Coopersmith Self-Esteem Inventory (Coopersmith, 1984)

Items	Dimension
1, 3, 4, 7, 10, 12, 13, 15, 18, 24, 25, 27, 30, 31, 34, 35, 38, 39, 43, 47, 48, 51, 55, 56, 57	General self-esteem
26, 32, 36, 41, 45, 50, 53, 58	Lie scale
6, 9, 11, 16, 20, 22, 29, 44, 49, 52	Family self-esteem
5, 8, 14, 21, 28, 40, 49, 52	Social self-esteem
2, 17, 23, 33, 37, 42, 46, 54	School self-esteem

#### 9.2.2. Scoring procedure

Two response alternatives were adopted to indicate the degree to which the characteristic expressed in each item was present. Taken together, these findings reflected the extent to which the pupil sensed and felt his or her self-esteem. The inventory included a set of positively and negatively worded items.

**Table 6:** *Response Alternatives for the Self-Esteem Inventory*

Statements	Like me	Unlike me
In the direction of the trait	1	0
Opposite to the direction of the trait	0	1

**9.2.3. Validity of the questionnaire**

Since the inventory has recently been standardised for the Arab environment, only internal consistency validity was calculated. Correlation coefficients were computed for each item and the inventory total score, as shown in Table 7.

**9.2.4. Internal consistency validity of the general dimension**

**Table 7:** *Correlation coefficients between each item and the total score of the inventory*

No.	Inventory items	Correlation coefficient
	First dimension: General self-esteem	
1	I generally do not care about things.	.33**
3	There are many things about myself that I would like to change if I could.	.31*
4	I can make decisions without difficulty.	.01
10	Others can easily stop me.	.40**
7	It takes me a long time to get used to something new.	.29*
12	It is very hard to be myself.	.35**
13	Everything in my life is vague and unclear.	.38**
15	I have a poor impression of myself.	.48**
18	I feel my physical fitness is lower than most people's.	.29*
19	In general, when there is something on my mind, I say it.	.12
24	I often think that I would prefer to be someone else.	.45**
25	Others often do not trust me.	.39**
27	I am very self-confident.	-.13
30	I spend a great deal of time daydreaming.	.33**
31	I prefer to be younger.	.26*
34	I always wait for someone to tell me what I should do.	.27*
35	I often regret what I have done.	.25*
38	In general, I can manage my affairs.	-.10
39	I am very happy with my life.	-.13
43	I understand myself.	.03
47	I can make decisions and adhere to them.	-.03
48	I truly do not like being a boy/girl.	.39**
51	I am often ashamed of myself.	.44**
55	I make light of what may happen to me.	.44**
56	I rarely succeed in what I do.	.41**
57	I easily lose what I have when others become close to me.	.42**

*Note.* SPSS Version 22 output.

Table 7 shows that most correlation coefficients were statistically significant at the .01 and .05 levels, except for Items 4, 19, 27, 38, 39, 43, and 47. These items were deleted because they were not correlated with the inventory's total score. These results confirm that the inventory is valid and that the degree of consistency is sufficient to reassure the researcher regarding the instrument's application.

**9.2.6. Internal consistency validity of the social dimension**

**Table 8:** *Correlation coefficients between each item and the score of the social dimension*

No.	Inventory items	Correlation coefficient
	Second dimension: Social self-esteem	
5	Others enjoy my company.	.30*
8	I feel that my male and female peers value me.	.53**
14	In general, I influence others.	.55**
21	Most people are more liked than I am.	.29*
28	I entertain others easily.	.47**
40	I prefer my friends to be younger than I am.	.43**
49	I am uncomfortable in my relationships with others.	.42**
52	Others often dislike me.	.54**

*Note.* SPSS Version 22 output.

The data in Table 8 show that most of the correlation coefficient values were statistically significant at the .01 and .05 levels. These results confirm that the inventory is valid and that the degree of consistency is sufficient to reassure the researcher regarding the instrument's application.

**9.2.7. Internal consistency validity of the school dimension**

**Table 9:** *Correlation coefficients between each item and the score of the school dimension*

No.	Inventory items	Correlation coefficient
	Third dimension: School self-esteem	
2	It seems very difficult for me to take the initiative to speak in class.	.42**
17	I often feel uncomfortable in class.	.51**
23	In class, I am often timid.	.37**
33	I am proud of my results.	.23
37	I always complete my work perfectly.	.23
42	I like asking questions in class.	.52**
46	In class, I cannot succeed as much as I would like.	.35**
54	My teachers make me feel that my results are insufficient or unsatisfactory.	.50**

*Note.* SPSS Version 22 output.

Table 9 shows that most correlation coefficients were statistically significant at the .01 and .05 levels, except for those for Items 33 and 37. These items were deleted because they were

not correlated with the inventory's total score. These results confirm that the inventory is valid and that there is sufficient consistency to reassure us about the instrument's application.

**9.2.8. Internal consistency validity of the lie dimension**

**Table 10:** *Correlation coefficients between each item and the score of the lie dimension*

No.	Inventory items	Correlation coefficient
	Fourth dimension: Lie scale	
26	I do not worry very much.	.52**
32	I always do what ought to be done.	.51**
36	I have never been happy.	.02
41	I like all the people I know.	.50**
45	No one becomes close to me.	.09
50	I am never frightened or afraid.	.33**
53	I always tell the truth.	.38**
58	I always know what I should say to people.	.52**

*Note.* SPSS Version 22 output.

Table 10 shows that most correlation coefficients were statistically significant at the .01 and .05 levels, except for Items 36 and 45. These items were deleted because they were not correlated with the inventory's total score. These results confirm that the inventory is valid and that there is sufficient consistency to reassure us about the instrument's application.

**9.2.9. Internal consistency validity of the family self-esteem dimension**

**Table 11:** *Correlation coefficients between each item and the score of the family self-esteem dimension*

No.	Inventory items	Correlation coefficient
	Fourth dimension: Family self-esteem	
6	At home, it is very easy to oppose me.	.47**
9	In general, my parents are very attentive to my feelings.	.58**
11	My parents expect a great deal from me.	.58**
16	I often think about leaving home.	.57**
20	My parents understand me.	.48**
22	I often feel my parents annoy me.	.46**
29	My parents and I spent a pleasant time together.	.46**
44	No one at home cares much about me.	.58**

*Note.* SPSS Version 22 output.

Table 11 shows that most correlation coefficients were statistically significant at the .01 level. These results confirm that the inventory is valid and that the degree of consistency is sufficient to reassure the researcher regarding the instrument's application.

**9.2.5. Reliability**

The reliability of the inventory was calculated using Cronbach’s alpha coefficient, as shown in the following table:

**Table 12:** Cronbach's alpha coefficients for reliability

Variable	Number of items	Cronbach's alpha
General self-esteem	19	.73
Social self-esteem	8	.42
School self-esteem	6	.44
Lie scale	6	.46
Family self-esteem	8	.62
Total scale	47	.73

Note. SPSS Version 22 output.

As shown in Table 12, the Cronbach's alpha was .73, indicating high reliability for the inventory.

### 10. Main study

The main study was conducted on 8 May 2025.

**Table 13:** Distribution of the participants in the main study sample by sex

Gender	Frequency	Percentage
Males	75	45.5%
Females	90	54.5%
Total	165	100%

Table 13 shows that females accounted for 54.5% of the sample, whereas males accounted for 45.5%. It may therefore be said that the sample size is acceptable for generalising the results to the total sample.

**Table 14:** Distribution of the participants in the main study sample by age

Age	Frequency	Percentage
11	10	6.1%
12	40	24.2%
13	47	28.5%
14	36	21.8%
15	14	8.5%
16	18	10.9%
Total	165	100%

Table 14 shows that pupils aged 11 and 16 years constituted the minority. This is logical, since these groups include pupils admitted under an age-exemption arrangement, who constitute a minority, as well as pupils repeating a year in middle education, who also constitute a minority.

**Table 15:** Distribution of the participants in the main study sample by school year

School year	Frequency	Percentage
First year of middle school	36	21.8%
Second year of middle school	53	32.1%
Third year of middle school	40	24.2%

Fourth year of middle school	36	21.8%
Total	165	100%

Table 15 shows that 21.8% of the pupils were in the first year of middle school, 32.1% were in the second year, 24.2% were in the third year, and 21.8% were in the fourth year. It may therefore be said that the sample size for each school year was relatively close and acceptable for generalising the results to the total sample.

## 10. Presentation and discussion of the study results

Under this heading, the researchers present the study's results by testing the hypotheses using the appropriate statistical methods.

### 10.1. Results for the general hypothesis

The general hypothesis is that there is a statistically significant correlation between the level of peer bullying directed at an individual and the level of self-esteem among middle school pupils. To verify the relationship between the two variables, Pearson's correlation coefficient was used.

**Table 16:** *Relationship between the level of peer bullying and the level of self-esteem among middle school pupils*

Independent and dependent variables	Statistical methods	Pearson's correlation coefficient	Significance level
Bullying and the level of self-esteem	$N = 165$	-.16*	.03

Note. SPSS Version 22 output.

The data in Table 16 show that the significance level is .03, which is lower than the .05 threshold. Therefore, the alternative hypothesis is accepted. It is concluded that there is a statistically significant negative correlation at the .05 level between the level of peer bullying and the level of self-esteem among middle school pupils. For this reason, the hypothesis was confirmed, indicating that increased exposure to bullying corresponds to lower self-esteem.

This finding is consistent with the previously mentioned study by Ali Abdelsamie et al. (2021), which investigated school bullying behaviour and its relationship to self-esteem among pupils in the first cycle of basic education in Egypt and reported a negative correlation between bullying behaviour and self-esteem.

This finding is also consistent with that of the study by Boughrane and Talbi (2023) in Tlemcen, which investigated cyberbullying and its relationship to self-esteem among first-year secondary school pupils; the findings likewise revealed a negative inverse correlational relationship between bullying and self-esteem, such that as cyberbullying increases, self-esteem decreases.

This is also in line with the view of proponents of psychoanalytic theory, who maintain that the causes of the problem of bullying are attributable to a disturbance in the individual's personality. They emphasise the importance of the experiences and life events the individual passes through in shaping personality and self-evaluation (Abib, 2022).

**10.2. Subhypotheses**

**1. First subhypothesis:** There is a difference in the level of peer bullying directed at the individual attributable to the variable of gender among middle school pupils.

Table 17 presents the arithmetic mean for the study sample by gender for the bullying variable. To verify the difference between the two variables, a *t* test for two independent samples was used.

**Table 18:** *Differences in the level of peer bullying among middle school pupils are attributable to the variable of gender*

Variable	Gender	Number	Mean	<i>t</i> value	Significance level
Level of peer bullying directed at the individual	Male	75	15.33	1.83	.06
	Female	90	14.22		

As shown in Table 18, the calculated significance value was .06, which is greater than .05, indicating that there was no statistically significant difference between males and females in terms of the level of bullying. Therefore, there were no statistically significant differences at the .05 level, which reflects the same level of school bullying among males and females.

In reference to the previously mentioned study by Ali Abdelsamie et al. (2021), the findings concerning differences between males and females in bullying indicated that there was no difference in the presence of bullying across groups. However, its type differed by sex. This finding is consistent with the findings of the present study, which revealed no difference in bullying levels between males and females.

**2. Second subhypothesis:** There is a difference in the level of peer bullying directed at the individual attributable to age among middle school pupils.

To determine differences in peer bullying levels across age groups in the main study sample, the researcher used Fisher's exact test or one-way analysis of variance (ANOVA). Table 19 shows the differences in the arithmetic means of the peer bullying among the six age groups (11, 12, 13, 14, 15, and 16 years).

**Table 19:** *F value for the significance of differences between the means in the level of peer bullying among middle school pupils attributable to the age variable*

Dependent variable	Source of variance	Sum of squares	Degrees of freedom	Mean square	<i>F</i> value	Significance level
Level of peer bullying	Between groups	204.279	5	40.856	2.841	.017
	Within groups	2286.48	159	14.830		

Table 19 shows that the *F* value was 2.841 at the .017 significance level. Thus, the research hypothesis that there were statistically significant differences in the level of peer bullying among participants in the main study sample attributable to age (11, 12, 13, 14, 15, and 16 years) was accepted. To determine the direction of the differences, the least significant difference (LSD) equation for post hoc comparisons was used, yielding the results shown in Table 20.

**Table 20:** Direction of differences using the LSD equation for post hoc comparisons of the level of peer bullying

Age	Comparison age	Mean difference	Significance level
11 years	12 years	-1.85000	.170
	13 years	-3.67234*	.006
	14 years	-3.02222*	.027
	15 years	-0.65714	.676
	16 years	-2.91111	.053
12 years	11 years	1.85000	.170
	13 years	-1.82234*	.027
	14 years	-1.17222	.180
	15 years	1.19286	.313
	16 years	-1.06111	.326
13 years	11 years	3.67234*	.006
	12 years	1.82234*	.027
	14 years	0.65012	.440
	15 years	3.01520*	.010
	16 years	0.76123	.470
14 years	11 years	3.02222*	.027
	12 years	1.17222	.180
	13 years	-0.65012	.440
	15 years	2.36508*	.049
	16 years	0.11111	.919
15 years	11 years	0.65714	.676
	12 years	-1.19286	.313
	13 years	-3.01520*	.010
	14 years	-2.36508*	.049
	16 years	-2.25397	.097
16 years	11 years	2.91111	.053
	12 years	1.06111	.326
	13 years	-0.76123	.470
	14 years	-0.11111	.919
	15 years	2.25397	.097

Note.  $p < .05$ .

Table 20 shows that the level of bullying differed significantly between the 11-year age group and the 13- and 14-year age groups. This difference favoured the 13- and 14-year age groups, with mean differences of -3.67 and -3.02, respectively, at significance levels of .006 and .027. A statistically significant difference was also found between the 12-year and 13-year age groups, with the 13-year group favoured, with a mean difference of -1.82234 at a significance level of 0.027.

A statistically significant difference was likewise found between the 13-year age group and the 11-, 12-, and 15-year age groups, and this difference was in favour of the 13-year age group, with mean differences of 3.67234, 1.82234, and 3.01520, respectively, at significance levels of .006, .027, and .010, respectively.

For the 14-year age group, the difference compared with the 11- and 15-year age groups favoured the 14-year age group, with mean differences of 3.02222 and 2.36508, respectively, at significance levels of 0.027 and 0.049, respectively.

For the 15-year age group, the difference was statistically significant compared with the 13- and 14-year age groups at significance levels of .010 and .049, respectively.

In contrast, no statistically significant differences were found between the 16-year age group and the other age groups.

In reference to the previously cited statistics in the UNICEF report (2018), bullying affects age groups ranging from 12 to 15 years. This finding is broadly consistent with the age groups in the present study, in which bullying was found to be prevalent among 11- to 15-year-olds.

According to developmental theory, Hawley indicates that as children progress through their developmental stages, they begin to employ more socially acceptable means of controlling others. Thus, verbal and indirect forms of bullying become more common than physical forms, and over time, the behaviour commonly referred to as bullying becomes relatively rare (Abib, 2022). This finding is consistent with the hypothesis that bullying decreases with age.

**3. Third subhypothesis:** There is a difference in the level of peer bullying directed at the individual attributable to the variable of school year among middle school pupils.

To determine differences in bullying levels across school years among participants in the main study sample, Fisher's exact test or one-way analysis of variance (ANOVA) was used. Table 21 shows the differences in the arithmetic means of the four middle school groups (in the first, second, third, and fourth years) for bullying.

**Table 21:** *F value for the significance of differences between the means at the level of bullying*

Dependent variable	Source of variance	Sum of squares	Degrees of freedom	Mean square	F value	Significance level
Level of peer bullying directed at the individual	Between groups	401.356	3	133.785	10.309	.001
	Within groups	209.372	161	12.977		

Table 21 shows that the *F* value was 10.309 at the .001 significance level. As a result, the research hypothesis that there were statistically significant differences in the level of bullying among participants in the main study sample attributable to the school year variable was accepted. To determine the direction of the differences, the least significant difference (LSD) equation for post hoc comparisons was used, yielding the results shown in Table 22.

**Table 22:** *Direction of differences using the LSD equation for post hoc comparisons of the peer bullying variable*

School year	Comparison year	Mean difference	Significance level
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First year of middle school	Second year of middle school	-1.50314	.055
	Third year of middle school	-3.28333*	.000
	Fourth year of middle school	1.00000	.241
Second year of middle school	First year of middle school	1.50314	.055
	Third year of middle school	-1.78019*	.020
	Fourth year of middle school	2.50314*	.002
Third year of middle school	First year of middle school	3.28333*	.000
	Second year of middle school	1.78019*	.020
	Fourth year of middle school	4.28333*	.000
Fourth year of middle school	First year of middle school	-1.00000	.241
	Second year of middle school	-2.50314*	.002
	Third year of middle school	-4.28333*	.000

Note.  $p < .05$ .

The data in Table 22 show that the difference in peer bullying levels was statistically significant across middle school grades, with the third year having the highest level. The mean differences between this group and the other school years, namely, the first year, second year, and fourth year, were 3.28333, 1.78019, and 4.28333, respectively, at a significance level of 0.0001.

These findings are consistent with those of the study by Chiaoui and Sahri (2022), which reported differences in school bullying attributable to the school year variable at the middle education stage.

Shavelson and others' hierarchical conception of self-esteem, which begins with general self-esteem and yields two dimensions, achievement and the social, emotional, and physical dimensions, explains these findings. These, in turn, branch into subdimensions. Since achievement implies progression, pupils' educational levels are associated with self-esteem, with higher levels associated with higher self-esteem (Abib, 2022). This explains the results of this hypothesis.

**4. Fourth subhypothesis:** There is a difference in the level of self-esteem attributable to the variable of gender among middle school pupils.

To verify the difference between the two variables, a *t* test for two independent samples was used.

**Table 23:** Differences in the level of self-esteem among pupils according to gender

Variable	Gender	Number	Mean	<i>t</i> value	Significance level
Level of self-esteem	Male	75	25.4933	-0.985	.32
	Female	90	26.0778		

As shown in Table 23, the calculated significance value was .32, which is greater than .05, indicating that there was no statistically significant difference in self-esteem between males and females. Similarly, compared with males, females appeared to have higher self-esteem; however, there were no statistically significant differences at the .05 level, which reflects the same level of self-esteem for both males and females.

A comparison of the findings of the present study with those of the previously mentioned study by Abd al-Sami Husayn Khalid et al. (2021) revealed that their results regarding self-esteem

favoured females. This finding is strongly consistent with that of the present study, although it is not statistically consistent.

Zuckerman (1980) demonstrated that males and females are similar in their sense of self-acceptance, as measured by self-esteem. This sense is unrelated to gender roles (Kahar, 2010).

**5. Fifth subhypothesis:** There is a difference in the level of self-esteem attributable to age among middle school pupils.

**Table 24:** *F value for the significance of differences between the means in the level of self-esteem attributable to the variable of age*

Dependent variable	Source of variance	Sum of squares	Degrees of freedom	Mean square	F value	Significance level
Self-esteem	Between groups	82.319	5	16.464	1.148	.338
	Within groups	2280.857	159	14.345		

Table 24 shows that the *F* value was 1.148 at the .338 significance level. Accordingly, the research hypothesis that there were no statistically significant differences in self-esteem among participants in the main study sample attributable to age was accepted.

Maslow also emphasises that genuine self-regard depends on competence and achievement rather than external reputation (Kahar, 2010, p. 137). In light of Maslow's view, it becomes clear that self-esteem is not associated with age. Rather, competence and accomplishment determine the extent of an individual's self-view: the more success a person achieves at an earlier age, the higher his or her self-esteem, whereas failure as he or she ages leads to lower self-esteem.

**6. Sixth subhypothesis:** There is a difference in the level of self-esteem attributable to the variable of school year among middle school pupils.

To determine differences in self-esteem across school years among participants in the main study sample, Fisher's test or one-way analysis of variance (ANOVA) was used. Table 25 shows the differences in self-esteem arithmetic means across the first, second, third, and fourth years of middle school.

**Table 25:** *F value for the significance of differences between the means in the level of self-esteem*

Dependent variable	Source of variance	Sum of squares	Degrees of freedom	Mean square	F value	Significance level
Self-esteem	Between groups	130.890	3	43.630	3.147	.027
	Within groups	2232.286	161	13.865		

Table 25 shows that the *F* value was 3.147 at the 0.027 significance level. Hence, the research hypothesis that there were statistically significant differences in the level of self-esteem among the participants in the main study sample attributable to the variable of school year (first year of middle school, second year of middle school, third year of middle school, and fourth year of middle school) was accepted. To determine the direction of the differences, the least significant difference (LSD) equation for post hoc comparisons was used, yielding the results shown in Table 26.

**Table 26:** Direction of differences using the LSD equation for post hoc comparisons in self-esteem

School year	Comparison year	Mean difference	Significance level
First year of middle school	Second year of middle school	2.12631*	.009
	Third year of middle school	1.15556	.179
	Fourth year of middle school	0.13889	.874
Second year of middle school	First year of middle school	-2.12631*	.009
	Third year of middle school	-0.97075	.215
	Fourth year of middle school	-1.98742*	.015
Third year of middle school	First year of middle school	-1.15556	.179
	Second year of middle school	0.97075	.215
	Fourth year of middle school	-1.01667	.236
Fourth year of middle school	First year of middle school	-0.13889	.874
	Second year of middle school	1.98742*	.015
	Third year of middle school	1.01667	.236

Note.  $p < .05$ .

The data in Table 26 show that the difference in self-esteem level was statistically significant between the second year of middle school and each of the following groups: the first year of middle school and the fourth year of middle school. This difference favoured the second year of middle school, with mean differences of 2.12631 ( $p = .009$ ) and 1.98742 ( $p = .015$ ), respectively.

### Conclusion

The present study revealed a statistically significant negative correlation between the level of peer bullying directed at the individual and self-esteem among middle school pupils. In contrast, no statistically significant differences were detected at the .05 level, reflecting the same level of school bullying among males and females. There were statistically significant differences in the level of peer bullying among the participants in the main study sample attributable to age, as the phenomenon of bullying was found to be prevalent among the age groups from 11 to 15 years. In addition, there were statistically significant differences in bullying levels among participants in the main study sample, attributable to the school year variable, with the third year of middle school having the highest level. There was no difference in the level of self-esteem attributable to sex among middle school pupils, nor was there any difference in the level of self-esteem attributable to age among middle school pupils. However, the difference in self-esteem levels was attributable to the school year variable among middle school pupils, with the second year having higher levels.

### Suggestions and recommendations

- Learners who are victims of bullying should be listed on the part of their parents and guidance counsellors, and appropriate measures should be taken.

- Intensifying supervision in hidden corners and secluded areas within educational institutions.
- Activate extracurricular activities and cultural and sports clubs to alleviate the psychologically charged atmosphere among learners.
- Taking appropriate deterrent measures in cases of violent bullying that cause serious harm and threaten the lives of victims.
- Involving learners and parents in the formulation of the internal regulations of the educational institution.
- Activating the use of active teaching methods promotes positive interactions among learners and fosters healthy interactive relationships.

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