Bullying Behavior among School-Age Children and Its Relationship with Body Weight and Self-Esteem

Fatma, A. AbdElrazek[I]. Hanaa,M.Mahmoud[II]

[I] *Lecturer of Pediatric Nursing, Faculty of Nursing, MenoufiaUniversity,Egypt*
[II] *Lecturer of psychiatric Nursing, Faculty of Nursing, MenoufiaUniversity,Egypt*

Abstract:
Background: Bullying is a type of prevalent aggression; it widely spread among children, which cause a negative impact on children's psychological status. Multiple factors are contributing to bullying exposure, overweight and obesity found to be associated with being bullying victim and adjustment problems such as body image disturbance and low self-esteem.The purpose of thisstudy was to assess bullying behavior among - school age children and its relationship with body weight and self-esteem.Research design: A comparative descriptive design was used. Sample: A multistage stratified random sample of 404 children including176 boys and 228 girls aged between 9-14 years. Instrumentsof Data Collection: three instruments were used: instrument one:ModifiedOlweus Bully/Victim Questionnaire. Instrument two: Rosenberg self-esteem scale (RSES).Instrument three: Body Mass Index chart.The results of this study showed thatthe prevalence of victims bullying among studied children was (28.2%). The majority of obese children (65%) and overweight children (70%) exposed to bullying behavior. Also, 78.6 of overweight and 84.3 of obese children have lower self - esteem. Also, bullying victim children reported the lowest score of self -esteem. Conclusion:The study concluded thatthere was strong relationship between weight status and bullying victimization, the greater body mass index considers as one of the obvious reasons for exposure to bullying. Also, thereis amarked decline in self –esteem scores among victims of bullying.Recommendations:Identifying bullying behaviors and raising awareness of bullying behaviors in school.Develop appropriate policies to prevent and manage bullying behaviors in schools.
Keyword: Children bullying, Body weight, Self- esteem.

I.   Introduction

Bullying behavior is widespread throughout the world, which involves children and adolescents,it's a type of prevalent aggression associated with negative consequences on children's adjustment and social internalization. The Rates of bullying victimization and perpetration grow faster and usually higher in school age children with emphasize on boysthan girls[1].

Now bullying is consideredasphenomena that affect the health and academic achievement of children[2].Bullying is described as a type of aggression involving repetitive intentional abuses against peers, operating within an imbalance of power between bulliesand victims[3].bullying is classifiedinto direct or indirect and can occur through a variety of actions, which include verbal abuse such as teasingand calling,spreading rumors and social exclusion, physical contact like pushing and hitting[4, 5]. Besides, bullying behavior participant roles divided intoa bully, victim,bystanders, and a combination of all three[6].

One of the most frequent reasonsfor children becomes victim bullying is aphysical appearance[7].Children who wereinappropriate body weight are at greater risk for the poor quality of life,and they reported more negative body image[8].A child with a higher body mass index (BMI)furthers greater risk to be bullied than a child with a normal weight[9].The overweightand obese children usually suffer from a greater level of depression and anxiety, also they displayed more somatic complaints and social withdrawal than children who were normal weight[10].

Childhood inappropriate weight is associated with various health problems. It accompanied by negative social and psychological outcomes in addition to physical health problems. Overweight and obesity complications include hypertension, type 2 diabetes, cardiovascular disease, and metabolic syndrome. Whereas,the psychological problem including body dissatisfaction, lower self-esteem, depression, also, children may suffer from stigma, discrimination and bullying victimization from peers[11, 12, 13].

Overweight is one of the most common causes that children and adolescents are bullied at school[14].Bodyweight is reported by students as one of the major causes of school bullyingand more frequent than ethnicity and sexual orientation[15].Obese boys were 1.66 times more likely to be bullies compared to normal

weight boys[16]In the same line,overweight boys were more likely to physically bully others in normal weight. In other word,other studies found that overweight and obese children are more likely to be perpetrators for bullying [17].

Poor body image perceptionisgreaterassociated with bullying, particularly with victimization[18]. Bodyimage dissatisfaction has been increasing during childhood,duringthis stage, most children are dependent on peer acceptance and approval[19].Supportive relationships with peers can protect children against feelings of body dissatisfaction. While a low acceptance may lead to greater dissatisfaction with body image.Children who dissatisfied with their body image and low self- esteem becoming more psychologically vulnerable and more likely to be victims of school bullying[20].

The evidence found there is a link and between obesity and adjustment problems such as lowered self-esteem and between obesity and being bullied, alsochildren who suffer from body dissatisfaction and low self-esteem either their appearances are a greater risk of being bullied [21].Also, it was noted that greater associations between overweight/obesity and depressive symptoms and low self -esteemamong studied students[15, 22] So the purpose was to assess the relationship between bullying behavior among school - age children and body Weight and self-esteem.

Significant of the study:

It was noted that more (20.8%) studentsreport being bullied at school yearly,besides 33% of students indicated that they were bullied more than one time every month during the school years [23]The higher prevalence of bullying occurred in primary school, A child with higher body mass index (BMI) is two third highly risk to be bullied than a child with a normal weight[24,25] Children who expose to bullying behavior are a greater risk for multiple problems than children who don'texpose.Itseffectonthe well-being and academic achievement of children.

1.1Purpos of the Study was to:
To assessbullying behavior among school age children and its relationship with body weight and self-esteem.
1.2 Research Question:
- What is the prevalence of bullying behavior among studied children?
-Is there a relationship between children's body weight and exposure to bullying?
- Does body weight influence children self -esteem.
- Is there a relationship between low self - esteem andexposure to bullying?

II.   Subject And Method
2.1 Research design:
A comparative descriptive design was used.
2.2Settings:
This study was conducted at Tala city, MenoufiaGovernorate,which represented two schools represented by'ZwaittBebem' primary school,and 'Alshahed Mohamed Ramdan'preparatory school.

2.3Sample:
A multistage stratified random sample of 404 children including176 boys and 228 girls. aged between 9-14 years. A multi-stage stratified random sampling technique was used to select the sample. At the first stage, a random selection of Tala city from ten cities inMenoufiaGovernorate, Egypt. At the second stage, the schools stratified then a simple random selection of two schools,Zwaitt Bebem primary school,and Alshahed Mohamed Ramdanpreparatory school. The third stage involved selection one class from each grade.

Sample size: The actual prevalence of bullying was unknown; the probability of its occurrence was estimated to be equal to that of its nonoccurrence (p=q = 0.5) and a value of 0.05 was chosen as the acceptable limit of precision (D).Using the following equation: $n = (z^2 \times p \times q)/ D^2$, the sample size was estimated to be 377children. To avoidthe non-response rate, the sample size had been increased to 443 children. A total of 443of interviewer based questionnaires were distributed. Amongthe chosen children, 39 of them refused to share in the study, returning a total of 404 questionnaires with a response rate of 91.2% for final analysis.

2.4 Inclusion Criteria:
● Children age from9 to 14 years old.
2.5 Exclusion criteria:
• Children with intellectual disability.
• Children reported exposed to physical abuse or domestic violence.
• Children under abehavior modification program.

2.6 Instruments of Data Collection:

Three instrumentswere used:

Instrument one: ModifiedOlweus Bully/Victim Questionnairewasdeveloped by Zhang et al [26.]itwas used to detect victim bullying and bully child . It consists of three parts: ***Part one***: Socio-Demographic characteristics of studied children: It included questions about the children age, sex,grads,and father and mother education.

Parttwo: Modified Olweus Bully/Victim Questionnairecontains16 questions,toassessed physicalbullying (e.g., hitting, pushing), verbal bullying (e.g., name-calling, teasing), other relational victimization (e.g., being excluded, spreading rumors). Children rated items using a3-point scale (0 = Never, 1 = Sometimes, 2 = Almost Always).According to this cut-off point, children were categorized into three Groups as none-participant, victims bullying and bully, with determination of types of bullying as physical and verbal. The reliability was done using Alpha Cronbach's test is (r= 0.81).

Part three:A structured interview questionnaire contained 5 questions to determine manner of bullying behavior. It was developed by the researcher guided by National Center for Educational Statistics[23].It includes a question about children's response to bullying, frequency of bullying, place of bullying, effect bullying and the reason for being a bully. The reliability was done using Alpha Cronbach's test (r= 0.73).

Instrumenttwo: Rosenberg self-esteem scale (RSE) it was developed by Rosenberg[27].Itwasused to evaluate the children level of self-esteem. It contains 10 -point items,five of the items have positively statements and five have negatively statement, the scale ranges from 0-30.Children rated items using a 4-point scale (strongly disagree=0,disagree=1,agree=2,and strongly agree=3) Scores between 15 and 25 are within normal range; scores below 15 suggest low self-esteem. A review was reported that the RSES has a reliable and valid measure of global self-esteem through all ages 28. The reliability was done using AlphaCronbach's test (r= 0.85).

Instrument three: Body Mass Index was calculated as BMI=weight (Kg)/height (m) × height (m). Then, it was plotted in the growth chart according to age and sex. If plotted weight was less than the 5th percentile. Plotted weight which ranged between 5th to <85th percentile was considered normal for age. Whereas, if weight ranged between 85th to less than 95th percentile, the child was considered to be overweight. Obese children had plotted ≥ 95th percentile 29, 30.

2.7 Validity: Instruments were reviewed and tested for content validity by jury (5) of pediatric nursing professors and medical experts.

2.8 Pilot study: - A pilot study was carried out on 40 children to assess the clarity, feasibility of the study toolsand the time needed to fill instruments. The necessary modifications were done as revealed from the pilot study. The sample of the pilot study was excluded from the total sample to assure the stability of the results.

2.9 Ethical Consideration: For the protection of children rights the researchers obtained written informed consent from parents of children with emphasized on the study was voluntary,anonymous and confidentiality of responses would be respected. Parents and children had the full right to refuse to participate in the study at any time**.**

2.10 Data Collection Procedure

- Study period: Data collection was started inFebruary 2019 and finished in April 2019.
- Official permission was obtained fromthe head of directorate of education andthe directors of school at studied setting after submitting official letters from theFaculty of Nursing about the purpose of the study and method of data collection.
- This study was conducted 2 days per week.
- The time taken for every questionnaire to be completed was about 25-30minutes childrenwere provided with information about the purpose of the study before data collection.
- The children were interviewedindividually toaccomplish the questionnaire.
- Children were weighed using a regular calibrated digital standing scale. Children had to be barefooted and wearing light clothes while being weighted.
- Children heights were recorded using a graduated measuring tape while being bare footed, bareheaded and standing straight, allowing the back of head, buttocks, shoulder and heel to touch the wall**.**

2.11Data analysis:

2.11.1 Statistical analysis: Results were statistically analyzed by SPSS version 20(SPSS Inc., Chicago, IL, USA). Student's t-test was used to indicate the presence of any significant difference between two normally distributed means. Chi-Squared ($\chi2$) was used for qualitative variables. Spearman Correlation analysis was used to show strength and direction of association between one quantitative variable and ordinal qualitative variable. P value at level of <0.05 was set to be significant.

III.   Results
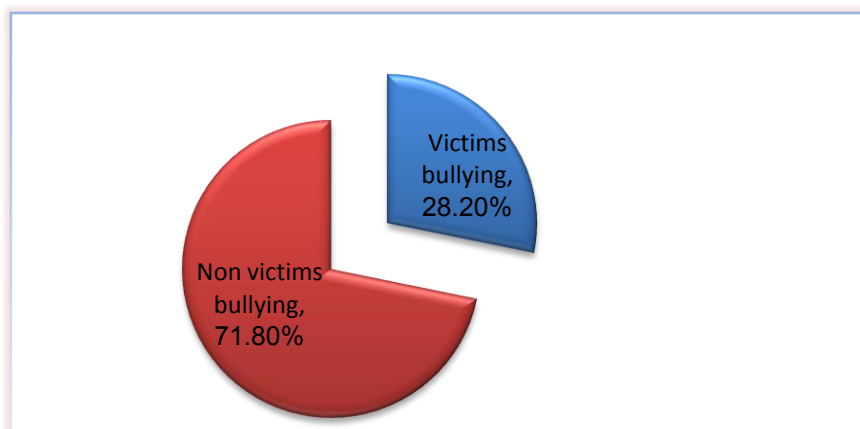
Fig 1: The Prevalence of bullying victimization among studied children.

Figure 1 shows,the prevalenceof bullying victimizationamong studied children**.** It clarifiesthat (28.2%) ofstudied childrenwas victim bullying.

Table1: Characteristics ofthe Studied Children According To Bullying Victimization.

|	Non bullying victim (No.=290)		Bullying victim (No.=114)			
	No	**%**	**no**	**%**		
Age(Y) Mean ±SD	11.92±2.23		12.60±1.68		t=4.90	0.004*
Sex Male Female	111 179	38.2 61.8	65 49	57.1 42.9	χ^2=11.69	0.001*
Education grade Primary school Preparatory school	87 203	30.0 70.0	48 66	42.1 57.9	χ^2**=5.39**	0.020*
Father's education Read and write Secondary university	11 100 179	3.7 34.4 64.8	10 50 54	8.7 43.8 47.4	χ^2**=8.71**	0.01*
Mother's education Read and write secondary university	25 105 160	8.6 36.2 55.2	7 80 27	6.1 70.1 23.7	χ^2**=38.63**	<0.001*

* Significant

Table 1 shows, characteristics of studiedchildren according to bullying victimization. As indicated in this table, the mean age of children in none -bullying group was (11.92±2.23)compared to(12.60±1.68)in bullying group.Also, this table shows that (57.1 %of children in the bullying groupwere male instead of 42.9 %were female.Also, this table showed a highly statistically significant difference (1%) in terms of age, sex, parent's education and family income between none bullying and bullying victim.

Table2: Prevalenceof Participant Role and Manner of Bullying Among the Study Group:

Items	The studied group (No.=404)	
	no	**%**
Participant Role in Bullying behavior Victim bullying Bully Non participant	114 14 276	28.2 3.4 68.3
Type of bullying Verbal Physical	**No.=114** 97 17	% 85.1 14.9
Frequency of bullying Daily Weakly Monthly Yearly	17 8 31 58	14.9 7.0 27.2 50.9

Place of bullying		
School	90	78.9
Home	9	7.9
Street	15	13.2
Response to bullying		
Stay away	25	21.9
Inform teacher and/ or parents	79	69.3
Counter attack	10	8.8
Reason for being bully	**No.=14**	
To feel older		28.6
To feel happiness	4	21.4
To control	3	14.3
Not to be bullied	2	35.7
	5	

Table 2 shows, theprevalenceof participant roleand manner of bullying among the study group**:** As indicated in this table, the prevalence of participant role among the study group was (28.2%) as victims bullying while(3.4 %) of children reported bully behavior while non victim was(68.3%) . Also, the majority (85.1%) of victim bullying exposed to verbal bullying instead of (14.9%) exposed to physical bullying. As regards tothe place of bullying (78.9%) of the victim reported their occurrence in school, besides,50% of bullying victim reported expose to bullying yearly and 27.2% reported monthly. for the response of bullying (69.3%) of children inform teacher or parent instead of 21.9 stay away.
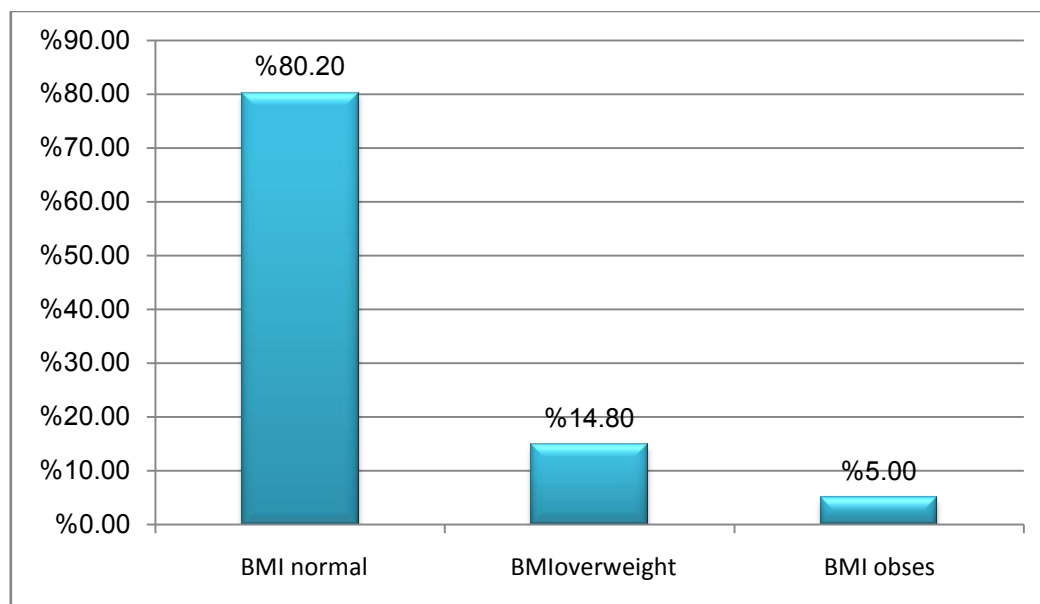
Fig 2: Distribution of Children's Body Mass Index.

Figure 2 shows, distributionof children's body mass index**.** It clarifiesthat 5% ofstudied children were obese while 14.8% of them were overweight.

Table 3: Distribution of Children's Participation Role in Bullying Behavior According To Their Body Mass Index.

| Role in Bullying behavior	BMI						χ^2	P value
	Normal 324		Overweight 60		Obese 20			
	no	**%**	**no**	**%**	**no**	**%**		
• Victim bullying	59	18.2	42	70.0	13	65.0		
• Bully	14	4.3	0	0.0	0	0.0	81.783	0.001*
• Non participant	251	77.4	18	30.0	7	35.0		

*: significant

Table 3shows,distributions of children's participation role in bullying behavior according to their body mass index.As indicated in the table the majority of obese children (65%) and overweightchildren (70.0%)were

victim bullying. Therefore,there was a highly statisticallysignificantdifferencewas found between children participation role in bullying behavior and body mass index**.**

Table 4: Distribution of Children ReportedTypes of Bullying According to Their Body Mass Index.

Types of bullying among victims	BMI						χ^2	P value
	Normal 59		Overweight 42		Obese 13			
	no	%	no	%	no	%		
• Verbal • Physical	51 8	86.4 13.6	35 7	83.3 16.7	9 4	69.3 30.7	2.720	0.3*

Table 4 shows, distribution of children reported types of bullying according to their body mass index**.**as indicated in the table the majority (83.3%) of overweight children victim and (69.3.%)of obese victimsexposed to verbal bullying Also, this table showed a statistically significant difference at (1%) betweenreported types of bullying and children body mass index.
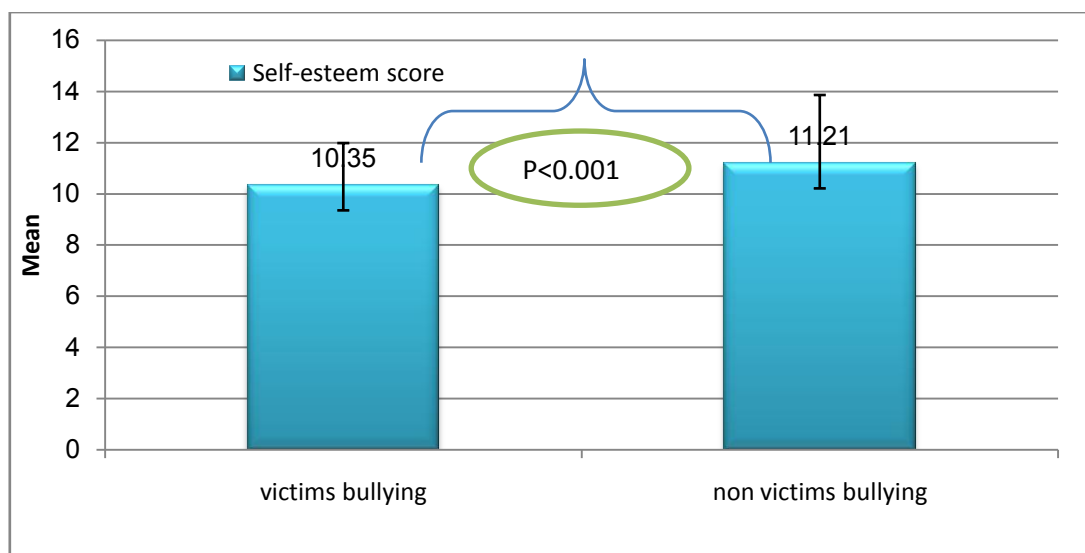
Fig 3: Distribution of Children Bullying Victimization Groups Regarding Their Self-Esteem Score.

Fig 3 shows, distribution of children bullying victimization groups regarding theirself-esteem score. It clarified that bullying victim children reported the lowest scores of self -esteem.
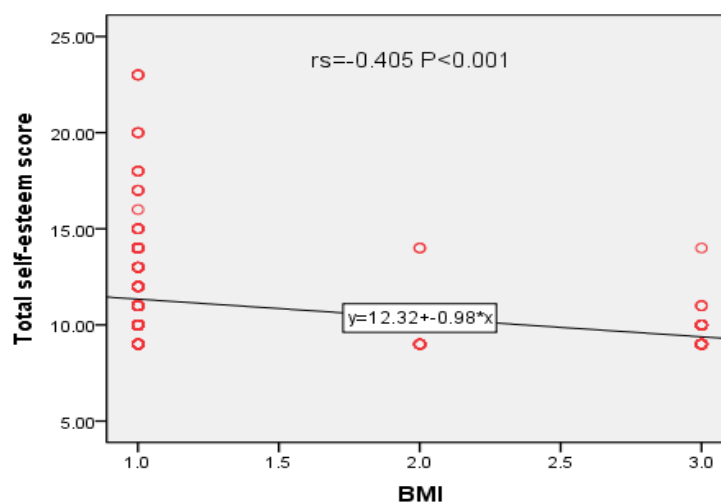
Fig 4: Correlation between Children Body Mass Index and Their Self-Esteem Score.

Fig 4 shows,correlation between children body mass index and their self-esteem score. As indicated in this figure there was significant negative correlation between children body mass index and their self -esteem score.

IV.   Discussion

Bullying is a type of prevalent aggression in the school setting that includes three main characteristics: repetition, intentionality, and imbalance of power and it is associated with a variety of internalizing problems and externalizing problems, academic problems and psychosomatic problems[31.]So the purpose of this study is to assess the relationship between bullying behavior among school-age children and body Weight and self-esteem.

Regarding the prevalence of bullying among the studied group, the current study found that the prevalence of bullying victims is more than one quarter(28.2%). This may reflect the growing up of bullying behavioral problems in school. These results were close to the results of Juvonen& Graham,who reported that 20–25%of children are directly involved in bullying as perpetrators and victims[32]. Also,Marsh, found that 20-29% of studied students are involved in bullying either as a victim orbully and d usually occur once a year[33.]

Regarding the characteristic of studied children, the current study found that more than half of victim bullying were male. This may indicate that boys are more vulnerable to aggressive behavior. This finding comes in agreement with Gendron etal, who reported that males consistently show higher levels of bullying and victimization compared to females[34].also, Iossi, found that Bullying victimization levels are higher for boys than girls[35.]

Concerning the type of bullying, the current study represents that more than three- quarters of victim bullying exposed to verbal while the minority suffer from physical bullying. This may indicate that words have tremendous power on children'spsychological status and self- esteemwhich may instantly crash all ideas and wishes. This comes in agreement with U.S. Department of Education;Salmivalli et al, whose founded that verbal and relational bullying such as name calling,social exclusion, spreading rumors and insulting occurs most often followed by physical bullying, then cyber bullying[36,37.]

For the frequency of bullying during the school year. The current study found more than one - quarter of victim bullying indicates that they are bullied at once monthly and half of them reported bullied once at years. This comes consistent withNational Center for Educational Statistics,which found that 33% of victims reported being bullied at schooland bullied at least once or twice a month during the school year[23].

In relation to the place of bullying. The current study represents that more than three - quarters of bullying occurs in school. This can be explained as children spent   6 hours in the school day, where they are learning, forming their primary relationships and playing. Also, children know much about each other's,so schools provide the place, characteristics and time for the bullying act to happen. This is in the same line with Bradshaw et al,who reported that 70.6% of children bullying occurs in the school setting[38].Also, U.S. Department of Justice, reportedthat high percentage of female students reported being bullied at school during the school year[39.]BesidesNational Center for Educational Statistics, found that bullied students reported that bullying occurred in the following places: more than one third occurred in the stairwell and the classroom in schools, while less than one quarter occur outside school[23.]

Regardingdistributions of children's participation role in bullying behavior according to theirbody mass index. The current study found that the prevalence of overweight and obese children was 14% and 5% respectively in the total study group, while near three quarters of obese and overweight children werevictims of bullying experience.This indicatesthe relationship between weight status and bullying victimization, the greater body mass index considers as one of the strong reasons for exposure to bullying. This comes in agreement with Bookhout , who found that obese children reported more weight-related victimization than normal weight children[40].Also,Kovalskys et al,reported that signification association between body mass index and bullying, it was noted a strong association between obesity and physical bullying among studied boys[41]. While, Kim et al. found that overweight students were more likely to physically bully in comparison with normal weight boys[17.] In the same line National Center for Educational Statistics , Reported that the reasons for student being bullied were physical appearance, disability, religion, sexual orientation, race, and gender[23].

Concerning thedistribution of children bullying victimization groups regarding their self-esteem score. The current study found that, the victim's bullyinghad lower self–esteemthan children who didn't expose to bullying. This may refer to the psychological consequence of bullying exposure on children. This comes in the same line with Cook et al, who reported that bullying victimization is associated with numerous internalizing problems such as low self-esteem, depression and anxiety[42.]Also,Tsaousis, reported that there was anegative association between peer victimization and self –esteemscore [5].

Regarding the correlation between children's body mass index and their self-esteem score. The current study revealed that there is a negative correlation between self –esteem and children's body mass index. This may indicate the negative consequence of obesity and overweight on the psychological adjustment of children, this comes in agreement with Becerra et al, who found that students who are overweight and obese have lower

self -esteem than those who have normal weight[43].In the same line Oliveira, et al ,found that their significant correlation between body dissatisfaction, lower self -esteem and greater body mass index[7].

V.   Conclusion

Based on the finding of the current study**.** There was astrong relationship between weight status and bullying victimization, the greater body mass index considers as one of the obvious reason for exposure to bullying. Also, there is a marked decline in self –esteem score among victims bullying children;finally,obese and overweight children have a lower score of reported self –esteem.

VI.   Recommendation

* Identifying bullying behaviors and raising awareness of bullying behavior in school
* Develop appropriate policies to prevent and manage bullying behaviors in schools.
* Reduction weight discriminations among children by creating   positive social public opinion for acceptance of different physical appearance.
* Establish a healthy program for obese and overweight children to sustain normal body weight and improve their self -esteem.
* Further studies on al larger sample should be done to allow generalizability of the results.

References

[1]. Smith PK, López-Castro L, Robinson S, Görzig A. Consistency of gender differences in bullying in cross-cultural surveys. Aggression and violent behavior. 2019 Mar 1;45:33-40.
[2]. Rezapour M, Khanjani N, Soori H. The types of bullying behaviors and its association with general life satisfaction and self-rated health among Iranian pupils. Journal of research in health sciences. 2019 Sep 1;19(1).
[3]. Olweus D, Catalano R, Slee P. The nature of school bullying: A cross-national perspective. London and New York. 1999.
[4]. Zych I, Ttofi MM, Farrington DP. Empathy and callous–unemotional traits in different bullying roles: A systematic review and meta-analysis. Trauma, Violence, & Abuse. 2019 Jan;20(1):3-21.
[5]. Tsaousis I. The relationship of self-esteem to bullying perpetration and peer victimization among schoolchildren and adolescents: A meta-analytic review. Aggression and violent behavior. 2016 Nov 1;31:186-99.
[6]. Rivers I, Noret N. Participant roles in bullying behavior and their association with thoughts of ending one's life. Crisis. 2010 Jun 23.
[7]. Oliveira WA, Silva MA, Mello FC, Porto DL, Yoshinaga AC, Malta DC. The causes of bullying: results from the National Survey of School Health (PeNSE). Revistalatino-americana de enfermagem. 2015 Apr;23(2):275-82.
[8]. Bonsergent E, Benie-Bi J, Baumann C, Agrinier N, Tessier S, Thilly N, Briançon S. Effect of gender on the association between weight status and health-related quality of life in adolescents. BMC Public Health. 2012 Dec;12(1):997.
[9]. Lumeng JC, Forrest P, Appugliese DP, Kaciroti N, Corwyn RF, Bradley RH. Weight status as a predictor of being bullied in third through sixth grades. Pediatrics. 2010 Jun 1;125(6):e1301-7.
[10]. Xie B, Ishibashi K, Lin C, Peterson DV, Susman EJ. Overweight trajectories and psychosocial adjustment among adolescents. Preventive medicine. 2013 Dec 1;57(6):837-43.
[11]. Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of obesity and trends in body mass index among US children and adolescents, 1999-2010. Jama. 2012 Feb 1;307(5):483-90.
[12]. Brendgen M, Poulin F. Continued bullying victimization from childhood to young adulthood: A longitudinal study of mediating and protective factors. Journal of abnormal child psychology. 2018 Jan 1;46(1):27-39.
[13]. Eastman M, Foshee V, Ennett S, Sotres-Alvarez D, Reyes HL, Faris R, North K. Profiles of internalizing and externalizing symptoms associated with bullying victimization. Journal of adolescence. 2018 Jun 1;65:101-10.
[14]. Puhl RM, Luedicke J. Weight-based victimization among adolescents in the school setting: Emotional reactions and coping behaviors. Journal of youth and adolescence. 2012 Jan 1;41(1):27-40.
[15]. Wilson M, Viswanathan B, Rousson V, Bovet P. Weight status, body image and bullying among adolescents in the Seychelles. International journal of environmental research and public health. 2013 May;10(5):1763-74.
[16]. Griffiths LJ, Wolke D, Page AS, Horwood JP. Obesity and bullying: different effects for boys and girls. Archives of disease in childhood. 2006 Feb 1;91(2):121-5.
[17]. Kim SG, Yun I, Kim JH. Associations between body weight and bullying among South Korean adolescents. The Journal of Early Adolescence. 2016 May;36(4):551-74.
[18]. Reulbach U, Ladewig EL, Nixon E, O'Moore M, Williams J, O'Dowd T. Weight, body image and bullying in 9- year- old children. Journal of paediatrics and child health. 2013 Apr;49(4):E288-93.
[19]. Gonçalves S, Silva M, Gomes AR, Machado PP. Disordered eating among preadolescent boys and girls: the relationship with child and maternal variables. Nutrients. 2012;4(4):273-85.
[20]. Chang FC, Lee CM, Chiu CH, Hsi WY, Huang TF, Pan YC. Relationships among cyberbullying, school bullying, and mental health in Taiwanese adolescents. Journal of school health. 2013 Jun;83(6):454-62.
[21]. Fox CL, Farrow CV. Global and physical self-esteem and body dissatisfaction as mediators of the relationship between weight status and being a victim of bullying. Journal of adolescence. 2009 Oct 1;32(5):1287-301.
[22]. Ting WH, Huang CY, Tu YK, Chien KL. Association between weight status and depressive symptoms in adolescents: role of weight perception, weight concern, and dietary restraint. European journal of pediatrics. 2012 Aug 1;171(8):1247-55.
[23]. National Center for Education Statistics. Indicators of School Crime and Safety: 2016. U.S. Department of Education
[24]. Zych I, Ortega-Ruiz R, Del Rey R. Systematic review of theoretical studies on bullying and cyberbullying: Facts, knowledge, prevention, and intervention. Aggression and Violent Behavior. 2015 Jul 1;23:1-21.
[25]. Center for Disease Control, National Center for Injury Prevention and Control Preventing bullying.2017. Retrieved from https://www.cdc.gov
[26]. Zhang WX, Wu JF, Jones K. Modification of the Chinese version Olweus bullying/victimization questionnaire. Psychological Development and Education. 1999;15:18-22

[27]. Rosenberg, M. Society and the adolescent self-image. 2015Princeton university press.
[28]. Borowiec, J., Hökelmann, A., &Osiński, W. The Level of Self-Esteem of Deaf Children: Can Participating in Dance Lessons with Vibrational Headphones Improve It?2019. The Arts in Psychotherapy.'
[29]. World Health Organization. Childhood Body Mass Index.2015 Retrieved from http://www.who.int/entity/en/
[30]. National Nutrition Institute. Body mass index. Arab Republic of Egypt,2008 ,Retrieved from http://www.nni.org.eg/IndexEn.htm.
[31]. Reijntjes A, Kamphuis JH, Prinzie P, Boelen PA, Van der Schoot M, Telch MJ. Prospective linkages between peer victimization and externalizing problems in children: A meta- analysis. Aggressive behavior. 2011 May;37(3):215-22.
[32]. Juvonen J, Graham S. Bullying in schools: The power of bullies and the plight of victims. Annual review of psychology. 2014 Jan 3;65:159-85.
[33]. Marsh VL. Bullying in School: Prevalence, Contributing Factors, and Interventions. work. 2018 Oct.
[34]. Gendron BP, Williams KR, Guerra NG. An analysis of bullying among students within schools: Estimating the effects of individual normative beliefs, self-esteem, and school climate. Journal of school violence. 2011 Mar 23;10(2):150-64.
[35]. Iossi Silva M, Pereira B, Mendonça D, Nunes B, Oliveira W. The involvement of girls and boys with bullying: an analysis of gender differences. International journal of environmental research and public health. 2013 Dec;10(12):6820-31.
[36]. U.S. Department of Education Fast facts: Bullying. Institute of Education Sciences, National Center for Education Statistics.2018. Retrieved fromhttps://nces.ed.gov/fastfacts/display.asp?id=719
[37]. almivalli C, Sainio M, Hodges EV. Electronic victimization: Correlates, antecedents, and consequences among elementary and middle school students. Journal of Clinical Child & Adolescent Psychology. 2013 Jul 1;42(4):442-53.
[38]. Bradshaw CP, Sawyer AL, O'Brennan LM. Bullying and peer victimization at school: Perceptual differences between students and school staff. School psychology review. 2007 Sep 1;36(3):361.
[39]. .S. Department of Justice, Bureau of Justice Statistics, School Crime Supplement (SCS) to the National Crime Victimization Survey, 2017.
[40]. Bookhout MK. The role of peer victimization in the relations between obesity, negative body cognitions, and negative psychosocial outcomes (Doctoral dissertation, University of Delaware).
[41]. Kovalskys I, Rausch Herscovici C, IndartRougier P, Anez EV, Zonis LN, Orellana L. Childhood obesity and bullying in schools of Argentina: analysis of this behaviour in a context of high prevalence. Journal of childhood obesity. 2016 Jun 14;1(3):1-9.
[42]. Cook, C., Williams, K. R., Guerra, N. G., Kim, T., & Sadek, S. Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. 2010.School Psychology Quarterly, 25, 65–83.10.1037/
[43]. Becerra MO, Muros JJ, Cuadros JP, Sánchez JM, González MC. Influence of BMI on self-esteem of children aged 12–14 years. Anales de Pediatría (English Edition). 2015 Nov 1;83(5):311-7