Emotional Intelligence, Body Image Perception and Body Mass Index in School Age Children

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Abstract

Emotional regulation plays an important role in a healthy lifestyle for children. Overweight show low levels of emotional intelligence instead of normal weight, this **study aimed** to assess Emotional intelligence, body image perception and body mass index in school age children. **Sample**: A total of 358 children (9-12) years old participated in the study. **Setting**: This study was conducted at four primary schools in Shebin Elkom city, Menoufia Governorate, Egypt. **Tools**: four tools were used for data collection. Tool one, was sociodemographic data questionnaire. Tool two, was Emotional intelligence Scale. Tool three, children's body image perception. Tool four: body mass index chart. **Results**: according to the study scales cut-off point. A higher proportion of the underestimation body image and overestimation body image children (69.2%;69.6%) respectively have lower emotional intelligence. also, there was statistical significance difference were found between children body mass index and emotional intelligence subscale including intrapersonal skills, interpersonal skills, adaptability, stress management, and general mood with overweight and obese children. **Conclusion**. Based on the current study's findings that higher emotional intelligence associated with normal weight instead of overweight and obesity, the children with high emotional intelligence encouraged adherence to healthy behaviors, which provided the foundation for weight control. **Recommendations.** Enhance public awareness of the detrimental impacts of obesity and provide emotional intelligence-based weight loss counseling for children, particularly those who are obese.

Keywords: Emotional intelligence, body image perception, body mass index and school age children

Introduction

Emotions play an essential role in personal de velopment **(Denervaud et al., 2020).** The Bar-On model of emotional intelligence (EI) defining it as the ability to comprehend your own emotions as well as other person emotions. Emotional intelligence is important to effectively manage behavior, to make personal decisions and to navigate social situations**, (Bar-On, 2006).** emotional intelligence model is described as an configuration of interrelated emotional and social skills and behaviors that set how well we understand and express ourselves, and understand others, emotional intelligence divided into five dimensions , the intrapersonal dimension measure the ability to understand our emotions and how communicate them to others, the interpersonal dimension focuses on the ability to understand and estimate the emotions of other, stress management dimensions relay on the ability to control and manage our emotions, adaptability dimensions relay on flexibility to resolve conflicts, and mood dimensions carry the ability to maintain a positive attitude **(Jung et al.,2023; Sarrionandia, 2020).**

Emotional eating has indicated that the inability in emotional regulation may be a risk factor for establishing maladaptive overeating behavior, and may represents an unsatisfactory response to negative emotions and allows increasing body weight **(Favieri et al., 2021).** As well Movahedi (2019) found that elevated emotional intelligence correlates with body image, overweight children show a decreased emotional intelligence level compared to normal children. in preadolescents and adolescents, the period shows body dissatisfaction and eating disorder symptoms accompanied by lower emotional intelligence **(Cuesta-Zamora et al., 2018).** Eating behavior has an influence on body image, which result in body dissatisfaction, which supposed to be the body-related negative self-assessment of the individual **(Rahme et al., 2021).**

The mental image perceived by themselves is one of the factors that can affect the development of emotional intelligence is, the relationship

between body weight and internal perception is realized as the ability to identify and differentiate the individual's perceptions of their internal state (Willem et al., 2019). Body image perception, is a multidimensional conception that includes a person's ideas, feelings, and perceptions of their own body. The feelings that result from the difference between one's ideal and actual bodies, as well as body size, are referred to as body image dissatisfaction. Perception is the term used to describe a (wrong) assessment of one's own body size. **(Cash & Smolak, 2011; Guest et al., 2022).** Body image involve several dimension, perceptions, cognitions, behaviors and emotions related to individual's body, that are also correlating to the level of one's own body image perceptual and satisfactions accuracy (Gardner& Brown, 2010; Vandenbosch et al., 2022). In this way, children perceive, behave, and feel in relation to their own body may be associated with high body satisfaction or body dissatisfaction. this may cause negative out come, as well as the development of eating behavior problems If not properly handled **(Mendo-Lázaro, 2017).**

Eating behavior problems is one of the major health problem affecting childhood period, it may cause overweight which in turn increases the susceptibility of obesity condition in adolescence, it reach to 75% and may relates to other related health problem, it can affect the physical development and mental and socialization of children . **(Ayana et.al., 2021)** Obesity is a condition, associated with severe social and psychological features that affect all ages and different socioeconomic groups and threatens both developing and developed countries. The prevalence of obesity among children and adolescents from 6 to 19 years old has reached 19% for males and 18% for females, overweight or obesity among infants and young children reach to 41 million **(World Health Organization [WHO], 2020).**

Many obese children are unsatisfied with their body shape and feel they are not good-looking , recent studies shown that obese children are bullied and teased more than their normal-weight children and suffer from lower self-esteem, social isolation and depression**(Griffiths et al., 2010; Gong et al.,2020).**Emotional eating has a direct relationship overweight, these can be assign to the verity that emotional eaters are more to vulnerable to high-fat and sugary diet, as response to stressors, compared to non-emotional eaters**(Braden et al., 2018; Jiménez-Limas et al., 2022)** `

The psychological dimension of childhood obesity is very complicated, which includes factors such as body image and emotional regulation. It is playing marked roles in eating behaviors and the physical activity level of children **(Sanders et al., 2015)** Recently Overweight and obesity are found associated with unfavorable cognitive issues; adiposity has a particular effect on cognitive function. There is a relevance and important risk factor between a low level of emotional intelligence and emotional dysregulation and the presence of binge eating behaviors **(Crockett et al., 2015).** Numerous studies indicate an adverse association between body mass index (BMI) and intelligence quotient (IQ), childhood obesity or high BMI being substantially negatively correlated with IQ**. (Carton et.al., 2021; Kanazawa, 2014; Mendo-Lázaro et al., 2017)**

Significance of the study:

Recent research has emphasized the importance of assessing social and emotional development in the early stages of childhood, the emotional eating has tended to inappropriate emotional regulation, which represents a risk factor for initiating maladaptive overeating behavior that represents negative emotions and allows increasing body weight. Several studies found that children who were satisfied with their body image showed higher emotional intelligence and better mood, respect to gender, and greater adaptability. Also, emotional intelligence has a significant negative correlation with eating disorders and is overweight among children **(Amado Alonso et al., 2020; Cuesta-Zamora et al.,2018; Opstoel et.al., 2020).**

The aim of the study:

This study aimed to assess emotional intelligence, body image perception and body mass index in school age children.

Research questions:

1. What is the level of emotional intelligence among studied children?
2. Is there is a relationship between children overweight /obesity and Emotional intelligence?
3. Are children's body image perceptions of their weight corresponding to emotional intelligence?

4. Are children's perceptions of their weight corresponding to their actual weight?

Methods:

Research design:

A descriptive cross-sectional design was used.it is aims to describe variables or explore the association between variables and give an overview of the outcome and related cohort characteristics at a particular point in time.

Setting:

This study was conducted at four schools. (El-Ahmadia Primary School, Sadd Alhoraa Primary School, El-Salm Primary School, and Almontazh Primary School) in Shebin Elkom City, Menoufia Governorate, Egypt.

Sample:

A multistage stratified random sample of 358 children aged between 9 and 12 years.The study setting was selected through a multistage stratified random sample that was conducted through three stages: In the first stage, we randomly selected Shebin El-Kom city from nine cities to represent the Menoufia governorate in Egypt. At the second stage, the number of primary schools in the Shebin El- Kom district was 20. The schools stratified, and then a simple random selection of four schools (El-Ahmadia Primary School (90 children), Sadd Alhoraa School (90 children), El-Salm Primary School (90 children), and Almontazh Primary School (88 children) included both male and female children. The third stage involved selecting one class from each grade, fourth to sixth. Legal permission was taken from each school management system and the Ministry of Education to assess emotional intelligence, body image perception, and body mass index in school-age children

Sample size Based on review of a previous relevant study **(Alonso et al., 2020)** who reported that 76.3% of the participants were not satisfied with their body image and low level of emotional intelligence**.** Based on this finding the sample size was calculated according to this formula:

$$\mathbf{N= Z^2_{1-\alpha/2} \times P(1-P) / d^2}$$

Where: n = minimal sample size.

$Z_{1-\alpha/2}$ = Standardized value for the corresponding level of confidence. (At 95% CI, it is 1.96)

d = Margin of error, absolute error, or rate of precision.

So, the required sample was 328 participants and by adding 10% to avoid drop so total required sample is 358 participants**.**

Inclusion Criteria: The children aged 9 to 12 years old of both sexes were included in the study.

Exclusion criteria: Children enrolled in behavior modification programs, children with disabilities, children who have reported psychological issues, and children who have been exposed to abuse or domestic violence.

Tools: Four tools were used for data collection.

Tool 1: Sociodemographic data questionnaire of children and parents. It includes questions about the children's age, sex, academic performance, grades, education and marital status of the mother and father.

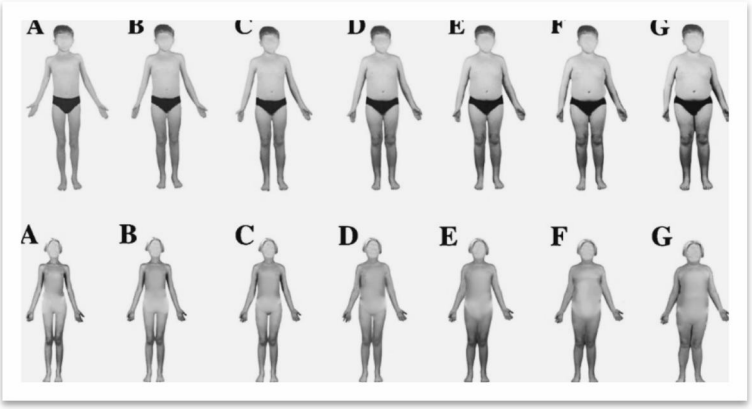
Tool two: "Emotional intelligence short Inventory Scale Young Version (EQ-i: YV)".It used to measure children's emotional intelligence in the primary School age, designed by **Bar-On and Parker (2011)** and modified by **Bint Turki Al Said et.al (2013)**.This tool consists of 30 items that make up the factor of emotional intelligence (self-report), it divided, into five dimensions: Intrapersonal dimension consist of 6 items about(emotional self-awareness, assertiveness, personal respect). Interpersonal dimension consists of 6 items about (interpersonal relationships and social responsibility). Stress management dimension consists of 6 items about (stress tolerance and impulse control), Adaptability dimension consists of 6 items about (problem solving, reality appraisal and flexibility), and general mood dimension consists of 6 items about (joy, optimism). the scale was rated on a four-point Likert scale ranging from (1 never true for me, 2seldom true for me, 3sometimes true for me, 4often true for me)total IQ scores between 24 and 120. Children were considered have high emotional intelligent if the resultant score was ≥ 90 Meanwhile, low level of Emotional intelligent score was< 90.

Tool Three: Body mass index (BMI) was measured by formula: BMI = Weight/ height $(m)^2$, it is used for evaluating the weight and presence of overweight and obesity). Then, it was plotted in growth chart according to age and sex. Children were considered underweight if their

plotted weight was below the fifth percentile. Plotted weight from the 5th to less than 85th percentiles was regarded as being normal for the age group. In contrast, children considered to be overweight if their weight ranged between the 85th and less than 95th percentiles. The 95 percentile is represented for obese children **(WHO, 2013).**

Tool Four: Children body image scale (CBIS): It was adopted from Truby and Paxton , (2002), it used to assess body image perception , it is a Representative sketch for body images of boys and girls at the developmental stage of preadolescent (6-12years). It contained seven sketches for boys and other seven sketches representing body images of girls. Scoring System, Lighter sketch. (A, B, C) Intermediate Sketch (D). Heavier Sketch (E, F, G). "Perceived body size was determined by asking the child to select the figure most like their size. after that, body mass index was used to determine if the figure nearby to their size ("actual size"). "The accuracy of perceived size was calculated by subtracting the "actual" figure number from the perceived. If the result score is positive scores (overestimation body image).negative (underestimation body image), while zero (accurate body image)

Figure 1: Body image figure perception



Note: Truby and Paxton, (2002) Development of the Children's Body Image Scale. Br J Clin Psychol; 41:185–203

Validity: Tools were tested for content validity by jury (5) of nursing and medical experts (professor of pediatric nursing, professor of pediatrics, professor of psychiatric nursing, professor of psychiatric medicine and professor of community nursing).

Reliability: Cronbach's co-efficiency alpha for the tools was used to assess the degree of internal consistency. The result was , tool two (a = 0.92), tool three (a=0.86), tool four (a = 0.93)indicating that the instrument was reliable to meet the study's aim.

Pilot study: - A pilot study was carried out on (10%) of children to assess the clarity, of the study tool and the time needed to fill the tool. As indicated by the pilot study, the required changes were made. To ensure the stability of the results, the pilot sample was not included in the overall sample.

Ethical Consideration:

- An approval of the faculty of nursing institution ethical research committee was obtained 20/9/2023, the registration number N: (924). Furthermore, after outlining the study's purpose and data collection procedures
- The researchers were having official approval by the authorities to conduct the current study.
- To ensure protection of children rights, the researchers acquired written informed consent from the parents of the children as well as assent from the children, with a focus on the voluntary and that confidentiality of responses would be respected, parents and children had the full right to refuse to participate in the study at any time.

Data collection procedure:

- This data was collected using the following steps:
- The study was conducted over a period of seven months from the start of October 2023 to the end of April 2024.
- Study tools were prepared based on literature that involve all aspects of a problem via, books ,and internet sources intended for emotional intelligence, body image perception and BMI.
- Formal approval was obtained from directors of each school at studied setting after submitting official letters from the Faculty of Nursing about the purpose of the study and method of data collection.
- The researchers started collecting data after clarifying the aim of this study: children who fulfilled the inclusion criteria, complete socio-demographic information, emotional intelligence short inventory scale young version, and children body image scale.
- Children were interviewed individually by the researchers at the specific waiting area at the school health nurse room and to obtain the necessary data
- The researchers supervised the completion of the study tools. This was done by explaining to the children what should done and giving them instructions on how to complete the question of the scales.
- The average time required to complete the study tools was 25-30 minutes.
- Children who participated in the study were weighed using a regular calibrated digital standing scale. Children had to be barefoot and wearing light clothes while being weighed. Their heights were recorded using a graduated measuring tape while being barefoot, bareheaded, and standing straight, allowing the back of the head, buttocks, shoulder, and heel to touch the wall.

Data analysis:

Results were statistically analyzed by SPSS version 22(SPSS Inc., Chicago, IL, USA). The qualitative data were presented in the form numbers and percentages, and Quantitative data were presented in the form of mean, standard deviation (SD). The Shapiro-Wilk normality test was used to determine non normal distribution data. Kruskal Wallis (K) is used for comparison between three or more means, Chi-Squared ($\chi 2$) was used for qualitative variables. Spearman Correlation analysis was used to show strength of association between variables. P value at level of <0.05 was set be significant.

Result

Table 1: Represent sociodemographic data of studied children and their parents, as indicated in the table that 358 children were included in this study. 39.1% of the children were 11-12 years old. More than half of children were female (59.2%). The academic performance was good and excellent at 24.1% and 56.4%, respectively. A total of 92.7% of children reported that their parents were married. In addition, most of the participants' mothers and fathers (70.4%; 76.0%) are university graduates.

Table 2: Clarifies that, according to the cut-off level on the studied children, emotional intelligence, body mass index and body image perception scales, of the 358 children, 230 (64.2%) were low emotional intelligence and 41 (11.5) were overweight and obese, while only 155 (43.3%) of children have accurate body image perception.

Table 3: As illustrated in the table, according to the level of emotional intelligence of the 358 children, 128 children had high emotional intelligence; 77 (60.2%) of them were girls, and 51 (39.8%) were boys. Also, more than two-thirds of children with high emotional levels (68.0%) had excellent academic performance. While, there was statistical significance difference in academic performance and grads levels ($p<.05$).

Figure 2: Shows that the children who had excellent academic performance had the highest degrees in interpersonal, intrapersonal, stress management, adaptability, and general mood.

Table 4: This table represents that, there was statistical significance difference were found between children body mass index and emotional intelligence subscale. Also, there was highly statistical significance difference

were found in stress management and adaptability dimension (p<.001)

Table 5: Display a comparison of emotional intelligence total scale and body mass index of studied children according to the study scales cut-off point. As indicated in the table, a significantly higher proportion of the overweight and obese children (87.8%) had low emotional intelligence. While only 12.2% of them had a high level of emotional intelligence (p = 0.01).

Table 6: This table represents that there were statistically significant differences found between children's body image perception and emotional intelligence subscale in the interpersonal and general mood dimensions (p < .05).

Table7: As illustrated in the table, a higher proportion of the underestimation of body image and overestimation of children (69.9% and 69.2%, respectively) have lower emotional intelligence (p < .05) according to the study scales cut-off point.

Table 8: The result reflected that (46.1%) of underweight children had an overestimation of their body image. In addition, 44.2% and 44.7% of normal weight and underweight children had accurate body image estimation. So, it is obvious that the table revealed that a statistically significant difference was found between children's body mass index and body image perception.

Table 9: Explains the relationship between emotional intelligence, children BMI and body image perception, the table represent presents Spearman's correlations for the study. As indicated in the table body image perception had a negative correlation with body mass index ($r = -357$, $p \leq .01$).

Table (1): Sociodemographic data of Studied Children and Parents(n=358).

Sociodemographic characteristics	No. 358	%
Age		
9 <10	132	39.7%
10 < 11	86	21.2%
11-12	140	39.1%
Sex		
Male	146	40.8
Female	212	59.2%
Number of children in family		
Less than 3	230	64.3%
More than 3	128	35.7%
Academic performance		
1. Below average	4	1.1%
2. Average	66	18.4%
3. Good (green)	86	24.1%
4. Excellent (blue)	202	56.4%
Grads		
Grad 4	158	44.1%
Grad 5	94	26.3%
Grad 6	106	29.6%
Mother education		
1.Primary	24	6.7%
2.Secondary	82	22.9%
3.University	252	70.4%
Father education		
1. Primary	18	5.0%
2. Secondary	68	19.0%
3. University	272	76.0%
Parental marital status		
1. Married	332	92.7%
2. Divorced	15	2.2%
3. widowed	11	5.0%
Total	385	100

Table (2): Level of Emotional Intelligence, Body Mass Index, Body Image Perception among Studied Children (n=358).

Variable	N=358	%
Emotional intelligence		
High emotional intelligence	128	35.8
Low emotional intelligence	230	64.2
Body mass index		
underweight	152	42.5%
Normal weight	165	46%
Overweight/ obese	41	11.5%
Body image perception		
Underestimation body image	83	23.2%
Accurate body image	155	43.3%
Overestimation body image	120	33.5%

Table (3): Comparison of Children Sociodemographic Characteristic according to Emotional Intelligence Levels (n=358).

Children sociodemographic characteristic	High EI N =128 %		Low EI N =230 %		χ^2
Sex					
Boys	51	39.8%	95	41.3%	.073
Girls	77	60.2%	135	58.7%	.43^{ns}
Academic performance					
Below average	0	0.0%	4	1.7%	
Average	13	10.2%	53	23.0%	14.722
Good	28	21.8%	58	25.3%	.002**
Excellent	87	68.0%	115	50.0%	
Grads					
Level 4	45	35.2%	113	49.1%	6.866
Level 5	37	29.8%	57	24.8%	.03*
Level 6	46	35%	60	26.1%	

Note. NS: Not significant ($p>0.05$). Significant*($p<0.001$). HS: High significance** ($p<0.001$).

Figure 2: Emotional Intelligence (EI) Subscale and Children Reported Academics Performance (n=358).

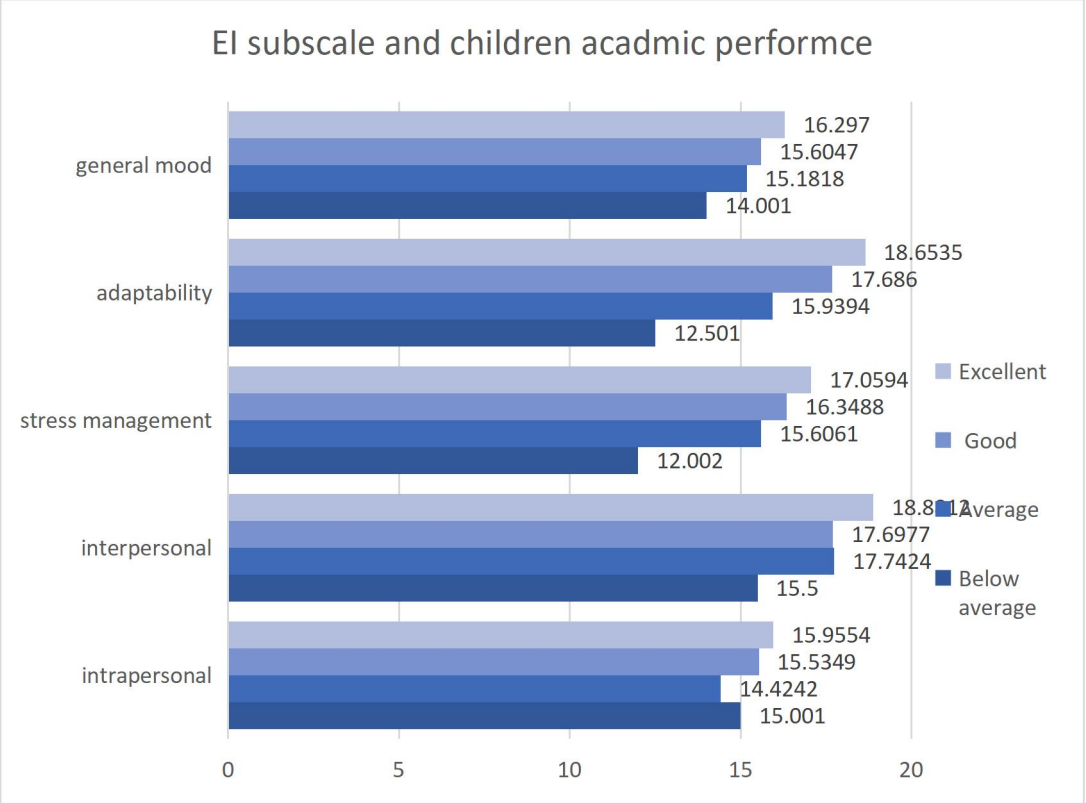


Table (4): Comparison of Total Mean Score of Emotional Intelligence Subscale and Body Mass Index of Studied Children (n=358).

Emotional intelligence subscale	Under weight	Normal weight	Overweight/ obese	Kruskal-Wallis	
				χ^2	P
Intrapersonal	16.13±3.37	15.33±2.9	14.36±3.23	9.241	.010*
Interpersonal	18.33±3.50	18.70±3.02	16.97±3.16	8.040	.018*
Stress management	17.00±3.11	16.57±3.04	14.87±3.13	14.563	.001**
Adaptability	18.29±3.01	17.95±3.23	15.78±3.73	16.443	.000**
General mood dimension	16.19±3.22	15.16±3.33	14.60±2.37	8.733	.013*

Note. N=358. NS: Not significant (p>0.05). Significant*(p<0.001). High significance** (p<0.001).

Table (5): Comparison of Emotional Intelligence Total Scale and Body Mass Index of Studied Children n=358).

Emotional intelligence	Under weight N =152 %		Normal weight N= 165 %		Overweight/ obese N = 41 %		χ^2
High EI	56	36.8%	67	40.6%	5	12.2%	11.676
Low EI	96	63.2%	98	59.4%	36	87.8%	.003**

Note. N=358. NS: Not significant (p>0.05). Significant*(p<0.001). High significance** (p<0.001).

Table (6): Comparison of Total Mean Score of Emotional Intelligence Subscale and Body Image Perception of Studied Children (n=358).

Emotional intelligence subscale	Underestimation body image	Accurate body image	Overestimation body image	Kruskal-Wallis	
				χ^2	P
Intrapersonal	14.9±3.11	15.48±2.91	16.10±3.50	4.489	.106NS
Interpersonal	18.63±3.078	18.56±3.44	17.86±3.19	6.073	.04*
Stress management	16.33±3.23	16.84±3.18	16.35±3.00	2.082	.335
Adaptability	16.33±3.23	16.84±3.18	16.35±3.00	.969	.606
General mood dimension	15.18±3.39	16.25±3.00	15.93±3.61	4.747	.058*

Note. N=358. NS: Not significant (p>0.05). Significant*(p<0.001). High significance** (p<0.001).

Table (7): Comparison of Emotional Intelligence Total Scale and Body image Perception Intelligence of Studied Children (n=358).

Emotional intelligence	Underestimation Body image N = 83 %		Accurate body image N =155 %		Overestimation body image N =120 %		X^2
High EI	25	30.1%	69	44.5%	37	30.8%	7.408 .02*
Low EI	58	69.9%	86	55.5%	83	69.2	

Note. N=358. NS: Not significant (p>0.05). Significant*(p<0.001). High significance** (p<0.001).

Table (8): Comparison of Body Image Perception and Body Mass Index of Studied Children n=358).

Body image perception	Under Weight N = 152 %		Normal Weight N = 165 %		Overweight/ Obese N = 41 %		X^2
Underestimation body image	14	9.2%	46	27.9%	23	56.1%	50.024 .001**
Accurate body image	68	44.7%	73	44.2%	14	34.1%	
Overestimation body image	70	46.1%	46	27.9%	4	9.8%	
Total	152	100	165	100	41	100	

Note. N=358. NS: Not significant (p>0.05). Significant*(p<0.001). High significance** (p<0.001).

Table (9): Spearman's Correlation Matrix of the Study Variables Emotional Intelligence, Children BMI and Body Image Perception

Variable	1	2	3
1. Emotional intelligence	1.000		
2. Children BMI	.066 .214	1.000	
3. Body image perception	.007 .893	-.346** .000	1.000

Note. N=358. NS: not significant (p>0.05). Significant*(p<0.001). High significance** (p<0.001).

Discussion

Emotional intelligence is a collection of non-cognitive skills and abilities that impact a person's ability to manipulate demands and pressures from outside sources. In actuality, obese child is seen as low in terms of EI since they are more likely to surrender to social and psychological circumstances. **Bar-On and Parker (2011).** The aim of this study was to assess emotional intelligence, body image perception and body mass index in school age children.

As regard in the study three hundred and fifty-eight children were included in this study. (39.1%) of the children above ten years old. Most of the children were female (59.2%).

Most of children have good and excellent academic performance. A total of 92.7% of children reported that their parents were married. In addition, most of the participants' mothers and father (70.4%; 76.0%) university graduates.

As regards the level of emotional intelligence among studied children, the current study revealed that two third of studied children have low emotional intelligence while one third have high emotional intelligence. Also, the children who have excellent in academic performance have highest degrees in the in interpersonal, intrapersonal, stress management, adaptability and general mood while there is no significant difference between children sex. This result aligns with **Herut et al. (2024)** who document a statistically significant positive relationship between the performance of learners and every aspect of their emotional intelligence (EI), including social skills, self-awareness, motivation, empathy. As well **Ali and Mohammed (2020)** mentioned that children emotional intelligence has a significant effect on their academic performance. The emotional intelligence of students is not significantly correlated with their educational stage, gender, age, or place of residence. Students' emotional intelligence is significantly correlated with their family sequence, number of brothers and sisters, mother's and father's educational attainment, and monthly income.

Concerning relationship between emotional intelligence and body mass index the current study revealed one third of normal weight children have high emotional intelligence level , contrary significantly higher proportion of the overweight and obese children (87.7%) have low emotional intelligence, while only12.2% of them have high level of emotional intelligence, also, there was statistical significance difference were found between children body mass index and emotional intelligence subscale intrapersonal dimension ,interpersonal dimension, stress management dimension, adaptability dimension and general mood dimension. From the researcher's point of view this could be due to obesity is usually connected with eating behaviors of children, and it is associated with social and psychological consequence which effect on different dimension of development like emotional intelligence. This result agreed with **Kunwittaya et al., (2022)** who assure that school-age children with high emotional intelligence quotient have highly opportunity to decrease body mass index. Also, these findings came on the same line with **Nurmohamadian and Boland (2016).** They clarified that the emotional intelligence is corresponding to body mass index. Moreover, results of Movahedi (2019) stated that normal weight children show high level of emotional intelligence while overweight children show a lowering emotional.

In addition, **Shabani, and Moradi. (2021).** They found that higher emotional intelligence led to reducing over weight and obesity, and raise adherence to preventive behaviors of disease complications, and providing the essential base for controlling weight. In the same line this result was consistent with **Gabour et al., (2024)** found that the majority of the five emotional intelligence domains showed a statistically significant correlation with the physical activity among children from 10 to 13 years old. There was a positive correlation between the intrapersonal, interpersonal, adaptability, and stress management domains, with higher domain scores seen in the category with physical activity durations more than two hours.

Regarding to relationship between children body image perception and level of EI, the current study highlighted that, a statistical significance difference between children body image perception and emotional intelligence subscale in interpersonal and general mood dimension. These results could be due to overweight children were more liable to suffer from physical, social and emotional troubles. This finding seems to be consistent with the study' finding conducted by **Pollatos et al., (2020)** demonstrated that their negative correlation between higher levels of emotional intelligence and lower levels of body image of studied boys and girls, also there was positive associations between sub dimension of the scale intrapersonal and stress management abilities and lower body image perception. Similarly, results of **Swami et al., (2010)** who reported that significantly positive correlation between body image and children high emotional intelligence.

In the same direction **Sanchez et al., (2020)** indicate that the important role of trait

emotional intelligence as an indicator of body image dissatisfaction, the study referee to its protective role against the negative impact of body image dissatisfaction. As well **Krause et al., (2023)** found that, girls show more emotional difficulties, both body image disturbance and body weight were related to behavioral and emotional difficulties as well. Children with little behavioral emotional difficulties were more satisfied with their body image. While, children who showed overestimation of their body more prosocial behaviors problems

Regarding to the children body image perception and body mass index, the present study illustrated that more than one half of obese children perceived them self as underweight. While, underweight children have overestimation of their body image. Also, the 44.2% and 44.7% of normal weight and underweight children have accurate body image estimation. This may be related to obese and overweight children emotionally avoided labeling them self as overweight or obese. They have poor self-perceptions are also typically less inclined to engage healthy life style. This comes in agreement with **Hussin et al., (2011)** who found verbal scale results indicated that children of all body sizes tended to perceive of themselves as "normal weight. The visual scale demonstrated that most children, particularly those in the heavier groups, thought they were thinner than they actually were.

Furthermore, this result came in agreement with **Toselli et al., (2021)** who conducted a study on evaluate the longitudinal change in body composition and weight status in a sample of Italian students of both sexes of middle school and to analyses the influence of these parameters on the perception and satisfaction of one's own body image. They clarified that, relationships between BMI, sex, and body image perception were identified. As BMI increases, feelings of dissatisfaction and overestimation of one's own weight status, and this is more common in girls than in boys. On the contrary, this result was inconsistent with **Sánchez-Rojas et al., (2022)** conducted a study aimed to determine the correlation between self-image, self-esteem and depression in children. This showed that the findings indicate a discrepancy between self-perception and BMI, with 60% of the groups under study not considering themselves obese.

Conclusion

Based on the current study's findings that higher EI is associated with normal weight instead of overweight and obesity, the children with high EI encouraged adherence to healthy behaviors, which provided the foundation for weight control. Consequently, children with high EI are more able to perceive themselves as having an accurate body image.

Recommendation

- The study's recommendations will raise public awareness of the detrimental impacts of obesity and provide emotional intelligence-based weight loss counseling for children, particularly those who are obese.
- It is important to promote parent awareness about major health problems regarding obesity and its consequence among children, through promoting healthy diet and promoting physical activities
- Further studies on community screen should be done to allow generalizability of the result.

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