

**THE IMPACT OF OBESITY ON  
ADOLESCENTS: A literature review**

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Description  <p>The number of people who have obesity or have the trend to be obese is more and more these years, especially teenagers. From the world's point of view, adolescents who have obesity are getting increasingly common. And it is also an underlying reason of developing other diseases. Overweight adolescents are more likely to lose confidence and have other issues due to their appearance and body shape.</p> <p>The aim was to focus on the experiences of adolescents and finding out the effects of being overweight on teenagers and how they may think about it. The purpose was to collect adolescents thoughts about obesity and themselves, also provide information for nurses who would like to give supports and help them both mentally and physically.</p> <p>The study was implemented as a literature review. The information was collected using two databases: PubMed and Cinahl. The processes included restricting key words, searching in both databases, picking up proper essays on the topic, reading through reports, analyzing data and drawing discussion and conclusion. Eleven(11) reports were selected according to the key words and exclusion criteria.</p> <p>There categories emerged from the results as follows: physical, social and mental impact of obesity on adolescents. The applicability of these results might be different depending on the individual and the nursing standard. In the future, this would be helpful for considering what are the connections between them and how deeply and essentially affect adolescents and the relationship among them.</p>		
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Miscellaneous		

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## **1.Introduction:**

The number of people who are obese is growing, thus it will be a trend in the future. It is an independent disease and also it can directly lead to cardiovascular diseases, diabetes, musculature disorders, some cancers. Obese teenagers experience breathing difficulties, increased risk of fractures, hypertension, early markers of cardiovascular disease, insulin resistance and psychological effects. (WHO.int. 2016)

In the United States, in the years 1980 and 2002, the number of obese people above 20 years of age doubled . In Thailand, in the period 1991–2004, the incidence of overweight in adult men increased from 13% to 22.4%, whereas in women the value rose from 23.2% to 34.3%. Unfortunately, the problem of progressive overweight and obesity affects children as well. In some of the European countries, the percentage of children diagnosed as overweight and obese is high. In Malta and southern Italy overweight or obesity are diagnosed in 35% of children, whereas the same conditions are observed in 15% of cases in Scandinavia and in 12% in the Netherlands. ( Aneta et.al 2012)

In a review from developed countries, prevalence of overweight youth (10-16 years) was > 15% in North America (Canada, USA), Great Britain and some South Western European Countries (Greece, Italy, Malta, Portugal, Spain), and between 10-15 % in Nordic (Denmark, Finland, Norway, Sweden) and other European countries. (Qazi et.al 2010)

It is easier for adolescents to feel emotionally deeper contrast between themselves and others. Also self-awareness and self-evaluation ability develops during teenage. Overweight adolescents are at a higher risk of low self-esteem and poor emotional well-being, poorer social skills and social difficulties depression, anxiety and disordered eating behaviors. They also have a greater risk of being bullied and teased about their weight by school friends and even family members than average weight adolescents. Weight-related teasing may lead to various deleterious consequences in

the long run and psychological co-morbidity like depressive symptoms and suicidal inclination. (Gurvinder et al. 2012)

The aim of our research is to find out the impact of obesity on well-being of adolescent. The purpose is to find out what would affect adolescents and classify them into different specific groups which would be easier to make the conclusion. Also offering information about what should be taken into consideration on taking care of a obese teenager.

## **2. Adolescent and obesity**

### **2.1 Obesity and how it is measured**

Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health. People are generally considered obese when their body mass index (BMI), a measurement obtained by dividing a person's weight by the square of the person's height, is over 30 kg/m<sup>2</sup>, with the range 25–30 kg/m<sup>2</sup> defined as overweight. Some East Asian countries use lower values. Obesity increases the likelihood of various diseases, particularly heart disease, type 2 diabetes, obstructive sleep apnea, certain types of cancer, and osteoarthritis. Body mass index is a measure of weight adjusted for height. It is calculated as weight in kilograms divided by the square of height in meters. Although BMI is an imperfect tool – it does not distinguish overweight due to excess fat mass from overweight due to excess lean mass – it is the most commonly used measure for assessing obesity in adults. Other methods of determining adiposity are more accurate, (Sopher&Shen 2005) but have limited applicability to screening or studying large populations. The BMI is well correlated with these more direct fatness measures (Willett 1998), and weight and height are simple, inexpensive, non-invasive measurements that are recorded routinely in clinical and research settings.

On the analysis of the degree of obesity with body mass index (BMI), the international general use the body mass index WHO (WHO) establishing the limits, namely, the body

mass index in 25.0~29.9 is overweight, or greater than or equal to 30. The International Life Sciences Institute China office organized a multidisciplinary experts "Chinese obesity working group, the population in 21 provinces and regions in China (BMI), body mass index, waist circumference, blood pressure related data such as blood glucose and blood lipid of 240 thousand people were collected and analyzed, and the Chinese BMI standard is put forward. The BMI value of" 24 "as the boundary Chinese adult overweight, BMI" 28 "for the obese boundaries; male waistline is greater than or equal to 85 cm, 80 cm for female waist or abdominal fat accumulation limits.

## **2.2 Obesity in adolescence**

Obesity among young people is a serious medical and social issue. In developing countries, it is a ubiquitous phenomenon in socioeconomic class due to the the adoption of a lifestyle closed to western society. Except genetic, prenatal and sociocultural habit factors, taking in high calorie food, lack of physical activities and increasing screen time are also major risk reasons. (Seth & Sharma 2012)

There are some health problems related to obesity like heart disease, diabetes, hypertension, stroke and certain kinds of cancers. Being obese can weaken physical health and well-being which might lead to a shortened life eventually. It can also result in unusual social condition and the feeling of upset, which might create more stress and heighten the risk of mental issues. Reliable researches illustrate the truth that overweight teenagers may be the target of teasing, name-calling and physical bullying more than the peers who have normal weight. (Lui 2016)

In England, there was a research among 1400 teenagers to find the answer for the thoughts of them about themselves in 2014. The result shows that almost all of the target group with different body size always focus on how over-weight makes influence to their daily life and how would others think about their figure. Some of them indicate excess weight brings negative attitude like laziness, greed, and lack of ability of control. Meanwhile, the opinions of over-weight adolescents perfectly mimicked those of thier peers and they blame themselves for their body shape. As described, their quotidian

experience include feeling excluded, marked, ashamed. Unluckily, the feeling of being harmed gets in the way of the ability and impossibility to make them accept the fact and try to change themselves so that it leads to a vicious cycle. (Scutti 2014)

### **2.3 Adolescent obesity and mental illnesses**

Adolescence is a necessary stage of the growth of life, but also the golden period of life. Teenagers are at the school stage, vulnerable to many factors. Especially for children with obesity, the psychological state is more unstable. In addition, adolescents have changes that are more obvious in physiology, often leading to emotional and behavioral deviation. This can result to the abuse of substances, smoking and alcohol abuse, and other acts of serious depression and suicidal behavior. So the relation between the adolescent obesity and mental illness makes it crucial for us to evaluate how adolescent obesity influences mental health. (Artemis 2016)

Overweight of children and adolescents continues to be an important and alarming global public health problem. As the adolescent's time spent online has increased, problematic internet use (PIU) potentially leads to negative health consequences. In total, 13 708 students participated into a study, representing 85% of those on the class registers participated. Participating adolescents answered a self-completed questionnaire in the classroom during school hours under the supervision of trained research assistants. Results show that suicidal behaviors (suicidal indentation and suicide attempts), depression, anxiety, conduct problems and hyperactivity/inattention were significant and independent predictors of PIU (problematic Internet use). The correlation between PIU, conduct problems and hyperactivity/inattention was stronger among females, while the link between PIU and symptoms of depression, anxiety and peer relationship problems was stronger among males. The association between PIU, psychopathology and self-destructive behaviors was stronger in countries with a higher prevalence of PIU and suicide rates. These findings ascertain that psychopathology and suicidal behaviors are strongly related to PIU. This association is significantly influenced by gender and country, suggesting social-cultural influences. At the clinical and public health levels, targeting PIU among adolescents in the early stages could potentially lead to

improvements of psychological well-being and a reduction of suicidal behaviors.  
(Smith & Zung 2014.)

### **3. Aims, Purpose and Research Questions**

The study aims to find out the impact of obesity on well-being of adolescents. The purpose of this study is to provide information for nurses to support and improve the well-being of obese adolescents.

Research question: How does obesity impact obese adolescents wellbeing?

## **4. Methodology**

### **4.1 Literature review**

Literature review, also known as research summary, refers to a comprehensive grasp, making analysis of an academic issue (or research field) on the basis of relevant literature. The academic issues (or research field) in a certain period of time has been research results, analysis, induction, collation and review of the formation of the paper. The literature review generally provides an objective description and commentary on the current state of the research in order to predict trends in development or research or to seek new research breakthroughs. (Wang 2010,11)The reviewer determines the criteria by which a paper is either included or excluded, the search terms to be included, and a list of sources to search for scientific evidence. (Rew 2010) Its purpose is not to list the articles that may be found, but to synthesize and evaluate the information based on the identification of relevant information, and a successful literature review that can be systematically analyzed and evaluated of the trend forecast for the establishment of new topics to provide strong support and demonstration. (Zhang 2010) We would use this method in our study.



There are four processes of literature review. The topic of the review is determined at the first stage. Next step is the collection of literature, which means after determined the topic already, proceed with the collection of topics related to the literature. Collection of literature can be manual retrieval, that is to read their own professional journals on the relevant documents made of reading notes card, you can use computer search methods, through a variety of search tools, such as literature index, the paper retrieval, can also review articles, works and other references found in the bibliography. Then the third procedure is propose outline. After the relevant literature has been collected, a general review is made to determine whether to include them in the literature review. Then, the collected literature for further screening, carefully read, make notes, write down the literature to review the purpose, methods, results and conclusions. . The main part includes the main content of the literature review, according to the time sequence of the literature review, but also on the different issues are reviewed, the different points of view are reviewed. In the review, the literature is integrated, analyzed, compared and contrasted to clarify the research history, current situation and development direction of the relevant problems, and to find out the problems and remaining problems, focusing on the current impact and development trends. (Rew 2010)

## **4.2 Literature Search process**

Well-defined literature search strategies are critical for enhancing the rigor of any type of review because incomplete and biased searches result in an inadequate database and the potential for inaccurate results. (Cooper 1998; Conn et al. 2003a) We used Google Scholar, Cinahl (Ebsco) and PubMed to find information for this literature review. Manual search in the school library would also be implemented in order to find out all the relevant conclusion. Different keywords would be combined, the key words that was going to be used are: obesity, overweight, obese, adolescent, teenagers, the youth, mental health, psychological problems, effects, impacts, influence.

The search results may be more extensive for finding all the relevant information and data. The data are summarized and selected in the study's summary. After reading all the relevant information, the most beneficial and most persuasive information and data

for the study will eventually be applied. We searched the articles with full text which are published from 2006 till currently in English and Chinese, and based on the question of our research. We first followed the planned approach to search for articles conforming to our topic, and then look through the article's main title to determine whether this article is valuable. Next, we marked out these helpful articles and then review the part of abstract for more detailed article selection and classification. Finally, we sorted out the final articles and individual paragraphs. (Robin & Kathleen 2005)

Inclusion criteria	Exclusion criteria
2006-2016	Before 2006
English or Chinese	Other languages
full text availability	Only abstract or title
answering the research question	Against the question

Table 1. Inclusion and Exclusion criteria

Table 2. Data search (duplicates excluded)

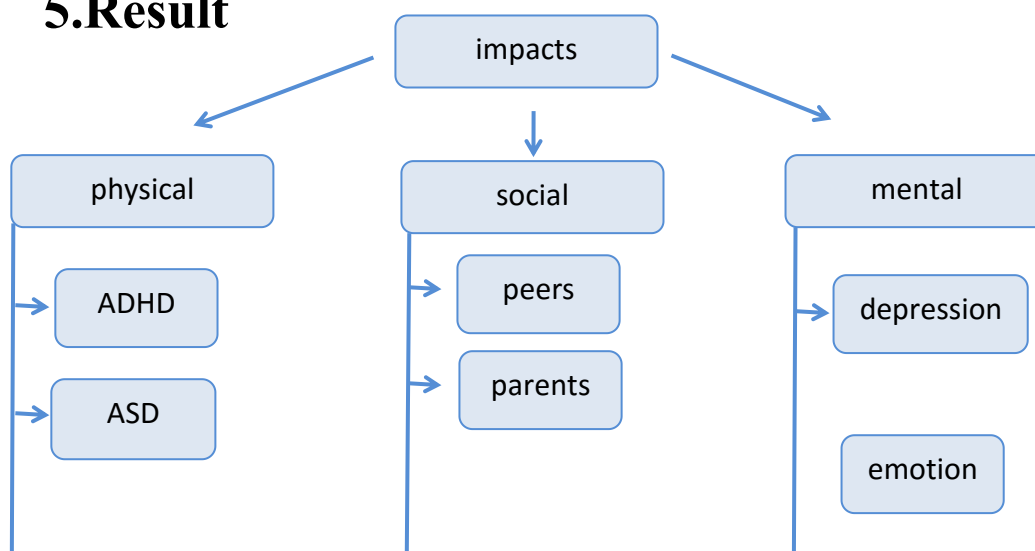
Database	Key words	Total	Total after inclusion criteria (2006-2016, language, full text)	Topic	Abstract	Full text
PubMed	obesity or overweight or fat or obese or unhealthy weight AND adolescents or teenagers or	19831	502	32	12	7
Cinahl(Ebsco)	juveniles or young people or youth AND impact or effect or influence or consequences	1784	290	25	11	4

### 4.3 Analysis and synthesis

The chosen and evaluated data was analyzed by using content analysis. Content analysis is a conventional method of analysis. With content analysis it is possible to analysis different kinds of data and at the same time describe them. (Kankkunen & Vehviläinen-Julkunen 2009, 133.) Content analysis offers a means of synthesizing study reports by allowing a systematic way of categorizing and counting themes (Dixon-Woods, Agarwal, Jones, Young, Sutton & Noyes 2008, 94).

This process includes open coding, creating categories and abstraction. Open coding means that notes and headings are written in the text while reading it. The written material is read through again, and as many headings as necessary are written down in the margins to describe all aspects of the content (Burnard 1991,1996 ).After this open coding, the lists of categories are grouped under broader headings (McCain 1988, Burnard 1991). The aim of grouping data was to reduce the number of categories by collapsing those that are similar or dissimilar into broader categories (Burnard 1991, Downe Wamboldt 1992, Dey 1993). Abstraction means formulating a general description of the research topic through generating categories (Robson 1993, Burnard 1996, Polit & Beck 2004). First, we collected the data and useful information depending on the topic, then put them into several specific classification. By marking the key words in result and discussion parts in the articles, it would be easier for us to concordance similar information in one field. Next, listing the related points and making them into method and complete sentences.

## 5.Result



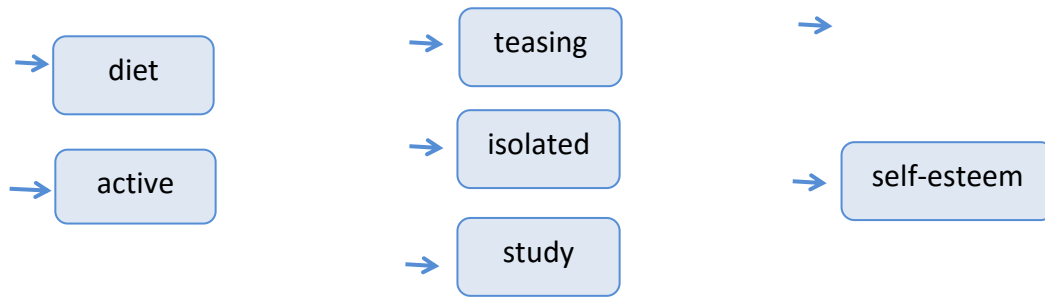


Figure 1. Categories and subcategories

## 5.1 The impacts on physical health of obese to adolescents

Overweight may cause the joint reaction and other adverse consequences. There is a growing evidence that obesity is a major concern not just in children who are typically developing but also developmental disabilities such as ASDs, attention deficit hyperactivity disorder (ADHD), and Down syndrome. (Srinivasan et.al.2014) Overweight not only causes the diseases in our body, but also can cause the psychological problems: The emotional consequences of being over-weight could be greater in young children, girls, and children or adolescents who reported having a loss of control in their eating. (Cornette et.al.2008.) When our diet is out of control, the weight will continue to increase. Also, depressed youth are less physically active than non-depressed youth. (Goldfield et.al.2010. Overweight children were more likely to have peer problems and mental health problems than normal-weight children (Hestetun et.al.2014).

## 5.2 The impacts on social part of obese to adolescents

Excessive obesity also brings some common problems in daily life, such as obese and overweight adolescents more often reported difficulties making new friends than normal-weight children, and they also more often believed that others made negative comments about them. (Hestetun et.al.2014) The survey shows overweight adolescent will often have own concerns about weight and shape, and experience weight-based teasing and stigmatization by others (Hestetun et.al.2014). Also overweight children have been found more likely to be socially isolated, described as more socially

withdrawn and found less attractive than others by their peers. Hestetun et.al.2014).Overweight children in school should be protected by teachers and focus on observation is needed, because obese youth are often targets of weight-based teasing and bullying and this has been associated with greater depression and suicide (Goldfield et.al.2010).To prevent this, the teacher should teach the students to be friendly to the obese children. At the same time, learning has become a difficult problem for overweight children: overweight adolescents were more likely to perceive their school performance below average compared with their normal-weight classmates. (H. Fonseca et.al 2010) Also, adolescent obesity has relationship with the gene from parents. Parents of over- weight adolescents have more often reported that their youngster was withdrawn or did not get along with others than did other parents ( Hestetun et.al.2014.

### **5.3The impacts on mental health of obese to adolescents**

The report number of obesity adolescents who have depression is more than the peers who have the normal level of weight. In addition, there is evidence that depression can increase the risk to teenagers to gain weight and be overweight. (Goldfield et.al 2009) There are some reasons composing the component as depression. As they think they have a bad body image and a different shape as other same age peers, there is a wide discrepancy between the reality and the truth, they might have negative emotions such as upset and sad, which lead to be depression eventually. (Xie 2006 & Unger et.al 2010.) In addition, when other people around them know they look down upon themselves so others might treat them worse, like tease and bully because of the shape and weight. Therefore, the obese adolescents cannot deal with such kind of delicate thought between others and themselves which results to having no real friends and feeling lonely and may develop into depression finally. (Goldfield et.al 2009)

Generally, obesity is often perceived to be a potential risk factor for the psychological and emotional well-being of children and adolescents. (Hestetun, Veel Svendsen & Margaret Oellingrath 2014) Comparing with contemporary fellows, obese teenagers have more difficulties to press their problems about physical and emotional health. It is much more easier to describe themselves as ‘unhappy’, also irritability or bad temper are reported more frequently. (Fonseca et.al 2010)

Some evidence also indicates that the degree of being overweight in girls is inversely correlated to their level of self-esteem. Being obese for an adolescent can lead to negative thoughts on self-esteem, self-image, lack of confidence and self-concept. (Cornette 2008)

## **6. Discussion of main results**

There is a relationship between adolescent obesity and mental problem such as depression, anxiety and even suicidal attempts. Similarly, the current research shows teenagers are subjected to depression comparing with the normal weight adolescents. At the same time, the evidence illustrates a strong relationship between the depression and the obesity. (Oldfield et.al 2009) Consistently, when the adolescents study in the school. It is vulnerable to be influenced by different factors. Typically, when these obese juvenile was suffering from a irritated situation, there are more obvious changes happening on these individuals. Those also trigger the behaviors disorders. Further, these can be influenced by substance abuse such as alcohol , drug and tobacco abuse. Besides, other suicidal and depression behaviors also play a significant role in obese issues. So, there is a strong link between the obesity and depression. (Artemis 2016) It is therefore important for health care professionals to provide psychological support to overweight children and their families.

The current study show that overweight may cause the joint reaction and other adverse consequences. There is a growing evidence that obesity is a major concern not just in children who are typically developing but also developmental disabilities such as ASDs, attention deficit hyperactivity disorder (ADHD), and Down syndrome. (Srinivasan et.al 2014). Similarly, Lui (2016) reported that there are some health problems related to obese like heart disease, diabetes, hypertension, stroke and some kind of cancer. Being obesity can weaken physical health and well-being which might lead to a shortened life eventually. (Lui 2016)

Both indicate the healthy issues caused by obesity among teenagers. So it is essential-for nurse to think about how to prevent such situation and how to improve and help them.

This review indicates that excessive obesity also brings some common problems in daily life, such as obese and overweight adolescents more often reported difficulties making new friends than normal-weight children, and they also more often believed that others made negative comments about them. Likewise, a survey by Hestetun et al. (2014) shows overweight adolescent will often have own concerns about weight and shape, and experience weight-based teasing and stigmatization by others. Also Overweight children have been found more likely to be socially isolated, and described as more socially withdrawn and found less attractive than others by their peers. (Hestetun et al. 2014)

This is supported by reliable research that illustrate the truth that overweight teenagers may be the target of teasing, name-calling and physical bullying more than the peers have normal weight. (Lui 2016)

It is therefore necessary for obese adolescents to get proper support from parents or professional care. As the closest people surrounding them, such as parents should have the ability to notice the change of impression mentally from their children also convey warm support and courage in time to prevent they would develop a worse situation.

Furthermore, the results of this study shows that the report number of obesity adolescents who have depression is more than the peers who have the normal level of weight. Also there is evidence that depression can increase the risk to teenagers to gain weight and be overweight. (Goldfield et al 2009) There are some reasons composing the component as depression. As they think they have a bad body image and a different shape as other same age peers, also there is a wide discrepancy between the reality and the truth, they might have negative emotions such as upset and sad, which lead to be depression eventually. (Xie 2006 & Unger et al 2010)

As reported in this study, previous research (Artemis 2016) confirm that adolescence is a necessary stage of the growth of life, but also the golden period of life. Teenagers are at the school stage, vulnerable to a lot of factors. Especially children with obesity, the psychological state is more unstable. In addition, adolescents have more obvious changes in physiology that often lead to emotional and behavioral deviation. This can result to the abuse of substances, smoking and alcohol abuse, and other acts of serious depression and suicidal behavior. Depression is worse than only upset emotion and it

means the adolescent is always living in a dark emotion environment. He or she should be given proper treatment or therapy currently.

From the impacts on mental health of obese to adolescents demonstrate that when other people around them know they look down upon themselves so others might treat them worse like tease and bully because of the shape and weight. Therefore the obese adolescents cannot deal with such kind of delicate thought between others and themselves which makes the result that they have no real friends and feel lonely and develop into depression finally. (Goldfield et.al 2009)

Obesity in adolescence the result shows that almost all of the target group with different body size always focus on how over-weight makes influence to their daily life and how would others think about their figure. Some of them indicate excess weight brings negative attitude like laziness, greed, and lack ability of control. Meanwhile, the opinions of over-weight adolescents perfectly mimicked those of thier peers and they blame themselves for their body shape.

This part is similar to the social issue. Communicating could be a essential method. If they are convinced so admit about their body shape and try to accept this truth, they are the same as others actually. They have the right to chase their dreams also study targets. There is a considerable part of teenagers who have a over weight, the better way to improve this situation is to help them in mental view.

From the impacts on mental health of obese to adolescents depicts that generally, obesity is often perceived to be a potential risk factor for the psychological and emotional well-being of children and adolescents. (Hestetun, Veel Svendsen & Margaret Oellingrath 2014) Comparing with contemporary fellows, obese teenagers have more difficulties to press their problems about physical and emotional health. It is much more easier to describe themselves as 'unhappy', also be reported irritability or bad temper more frequently. (Fonseca et.al 2010)



Adolescent obesity and mental illness shows the opinions of over-weight adolescents perfectly mimicked those of their peers and they blame themselves for their body shape. As described, their quotidian experience including feeling excluded, marked, ashamed. Unluckily, the feeling of being harmed gets in the way of the ability and impossibility to make them accept the fact and try to change themselves so that it leads to a vicious cycle. (Scutti 2014)

These results explain there would be more than only one problem with obese adolescent so that dredge from people surrounding about them especially parents and specialist is necessary.

## **7. Conclusion**

Obesity always impacts adolescents on three main aspects: physical, social and mental. This result might call the awareness of the parents, professional experts also the obese adolescent themselves.

The result can be used in further researches about the deep relationship between each fields such as how mental issues affects physical condition on adolescents in obesity. Valid information can be provided to nurses who are willing to help and make guidance to obese teenagers.

## Appendix

## Table of chosen articles and studies

Author, Country, Years	Purpose	Research Methods	Sample	Main results
I. Hestetun et.al, Norway, 11 July 2014	To investigate the associations between overweight, peer problems, and indications of mental health problems in a sample of 12–13-year-old Norwegian schoolchildren	Study design and sample, The present data were obtained from a study of primary school pupils in Telemark County, Norway	In total, written parental consent for inclusion in the study was received for 1,095 out of 1,503 invited children (73 %), representing about half of the county's seventh grade pupils. Data on mental health and peer problems were obtained for 871 pupils. Complete data, including weight and height measurements, were obtained for 744 children.	overweight children were more likely to have indications of "any psychiatric disorder" and peer problems than normal weight children. The associations were observed independently of available background variables, supporting the hypothesis that peer problems mediate an association between overweight and mental health problems
Barbara Gruss et.al, Germany, 27 July 2011	To estimate the prevalence of adult ADHD in a group of patients with grade 3 obesity	Assessed 116 patients for childhood and adult ADHD, co - occurring psychiatric disorders, severity of depression and daytime sleepiness.	124 consecutive patients considering bariatric surgery were evaluated at the Department of Psychosomatic Medicine and Psychotherapy at the University Hospital of Erlangen.	As ADHD appears to be a common condition in morbidly obese individuals, the impact of adult ADHD on post surgical weight loss needs to be examined. Besides, the causal link between obesity and ADHD in adults should be further investigated

<p>GARY S. GOLDFIELD et.al, Canada 11 August 2009</p>	<p>Examined the relationship of weight status on body image, eating behavior, and depressive symptoms in youth</p>	<p>A survey was conducted on 1490 youth. Participants completed questionnaires on body image, eating behavior, and mood and were measured for height and weight to calculate body mass index</p> <p>A survey was conducted on 1490 youth attending grades 7-12.</p>	<p>Obese youth in the community may be at increased risk of developing body dissatisfaction, dietary restraint, and depressive symptoms compared with overweight or normal weight youth.</p>
<p>Sudha M. Srinivasan et.al, the United States 13 February 2014</p>	<p>To develop sensitive assessment tools and holistic multisystem and multifactorial obesity interventions that accommodate the social communication, motor, and behavioral impairments of individuals with ASDs</p>	<p>literature on other pediatric developmental disabilities and children who are developing typically was reviewed to provide recommendations for clinicians to assess physical activity levels, to promote physical fitness, and to reduce obesity in children and adolescents with ASDs.</p> <p>Studies on Improving Physical Fitness and Reducing Obesity: Details on Study Design, Participant Characteristics, and Intervention Characteristics. Studies on Improving Fitness and Reducing Obesity: Details on Dependent Variables, Test Measures, and Results a. Measures for Assessing Physical Fitness and Physical Activity Levels in Children and Adolescents With Autism Spectrum Disorders a. Physical Activity Programs for Children and Adolescents With Autism Spectrum Disorders (ASDs) a</p>	<p>Children with ASDs who are low functioning may require individual-level programs, whereas group-based programs may be more appropriate for children with a high level of functioning.</p>

H. Fonseca et.al,Portugal , 16 May 2010	To analyze the associations between body mass index (BMI) and health-related behaviors among Portuguese adolescents based on the three waves of the Health Behaviour in School-aged Children (HBSC) survey conducted in Portugal.	Separate analyses of the variables under study were individually conducted for each of the three waves of the survey,and for the total sample according to BMI (normal-weight and overweight/obese) using Chi square.At a second step,a multivariate logistic regression model was tested using all the variables	Data were derived from the three waves (1998,2002 and 2006) of the World Health Organization collaborative cross-national survey HBSC,including 17024 public school students (6th, 8th and 10th grades).	overweight adolescents were consistently far more likely to exhibit difficulties with their physical and emotional health when compared with their non-overweight peers
HEDWIG LEE et.al, the United States , 9 August 2012	Examines the role of disadvantage at the family-, peer-, school-, and neighborhood-level, to determine which contexts are related to obesity in adolescence and young adulthood.	We assessed the relationship between obesity in adolescence and young adulthood, and disadvantage (measured by low parent education in adolescence) at the family-, peer-, school-, and neighborhood-level using multilevel logistic regression.	We analyzed longitudinal data from Waves I (1994-1995), II (1996), and III (2001-2002) of the National Longitudinal Study of Adolescent Health, a nationally representative population-based sample of adolescents in grades 7-12 in 1995 who were followed into young adulthood	Disadvantage were modeled simultaneously, school-level disadvantage was significantly associated with obesity in adolescence for males and females and family-level disadvantage was significantly associated with obesity in young adulthood for females.
Bin Xie et.al, the United States,2010	The role of acculturation in modifying the overweight-depressive symptoms relationship	Weight and height were measured by trained staff, and depressive symptoms experience was assessed by structured questionnaires	The original cohort consisted of 3157 sixth-graders from 24 public or parochial middle schools who provided active consent and completed the baseline survey in 2000.	Hispanic adolescents reported slightly but significantly higher mean level of body image dissatisfaction than did Asians

Bin Xie, MD et.al, the United States, 2006	To investigate weight perception and related psychological factors in Chinese adolescents.	A questionnaire on weight perception, academic performance, stress, hostility, and depression was completed. Weight and height were measured.	6863 middle and high school students.	Overweight perception was related to school related stress and depression in both girls and boys
Robert Cornette, the United States, 28 November 2007	To assess the emotional effect of overweight and obesity on a child's self-esteem and self concept.	To investigate psychological impact of being overweight or obese on children and adolescents of both genders and all ethnic, cultural, and socioeconomic backgrounds. Assessment tool of psychological measurement and weight or body mass index (BMI), and were in English or translated to English were considered.	Studies of 50 or more participants	All participants reported some level of psycho social impact from being overweight or obese. Younger children, girls, and those with little control over eating suffered the greatest consequences.
Anne-Kathrin Wermter et.al, Germany, 19 November 2009	Provide an overview of the state of field with regard to G 9 E in mental disorders.	Two approaches, linkage and association analyses, have been applied to identify and study genetic effects across a number of mental disorders.	Included 442 male participants and demonstrated that the effect of childhood maltreatment was moderated by a functional polymorphism in the gene encoding the neurotransmitter-metabolizing enzyme monoamine oxidase A	Inter individual variability in an individuals response to environmental exposures can be explained by genetic moderation of such effects. This gene-environment interplay may explain the individuals' vulnerability and resilience to environmental hazards in the development and expression of mental disorders

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