

# The Motivation for Losing Weight in Adolescents—Extrinsic and Intrinsic Factors

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**Abstract.** Background: Health-related study about overweight and obesity in the world has been a rapidly growing research field in the past decades. Practically, there indeed exists an increasing number of adolescents who tend to lose weight currently. Nevertheless, little has been known about their specific motivation for weight loss. Method: Based on the four major motivations of teenagers' weight loss concluded by David Franciole Oliveira Silva, Karine Cavalcanti Maurício Sena-Evangelista, et al. in 2018, the author conducted a related literature review intended to further identify their main causes and mechanisms. Results: According to the review, besides health motivation, others are triggered by different kinds of social pressure radically. In addition, the effects and maintenance of losing weight can be shown to be stronger in adolescents who hold the desire for health as their motivation. Conclusion: The findings of this study indicate a strong relationship between social pressure and the frequency of weight loss. Thus, further study can focus on the measures of the intervention in this kind of situation, including the fields of psychology, biology, sociology, and so forth so that teenagers' health and growth both physically and mentally can be guaranteed.

**Keywords:** Mental Health, Motivation, Social Pressure, Adolescents, Obesity.

## 1. Introduction

Overweight and obesity are a topic that trigger a spectrum of responses among society and they are common phenomena among adolescents. The effects of overweight and obesity are more noticeable on the younger generation, since over 25% of them struggle with their weight [1]. Additionally, it is quite prevalent in the vast majority of global regions [2].

Nevertheless, being overweight and obese imposes a great number of health risks for adolescents, such as diabetes and cardiovascular diseases [3]. Furthermore, teens who are overweight or obese are more likely than normal-weight teens to become fat adults; this trend is called "tracking." [4].

In fact, there is indeed exist increasing number of adolescents who want to take part in weight loss or control weight, and the reason triggering them to do so is diverse. According to the research conducted by prior researchers affirming 17 types of motivations that stimulate teenagers to lose weight, including celebrating birthdays, increasing mobility, appeal to the other gender, and so forth [5]. Thus, based on their data of statistics, we can infer the 4 kinds of major motivations for adolescents to lose weight, which comprise the desire for a healthier body, appearance anxiety, avoidance of bullying, and also improved self-esteem. We can divide these factors into intrinsic factors and extrinsic factors accordingly.

In this context, this study attempts to delve further into the fundamental relationship between these four reasons and teenage weight-loss behavior.

## 2. Object of study

### 2.1. Overweight

Overweight refers to people whose BMI is greater than 25 kg/m<sup>2</sup>, caused by the reasons of much accumulation of fat and so forth [6].

## **2.2. Obesity**

Obesity is a condition that arises from the buildup of excessive body fat and is characterized by a specific degree of severe overweight with a thick fat layer, especially triglycerides. It also refers to people whose BMI is greater than 30kg/m<sup>2</sup> [6].

## **2.3. Losing Weight**

Losing weight falls under the category of behaviors that are aimed at reducing excessive body fat and weight.

## **2.4. Adolescents**

Adolescents refer to the group of human beings living in transition from childhood to adulthood. The World Health Organization defines teenagers as those who are between the ages of 10 and 19 [7].

## **2.5. Extrinsic Factors**

### **2.5.1 Bullying**

Bullying is a type of aggressive behavior with or without intent simply habitual. Usually used to describe unfair bullying and persecution of individuals, it has been spread throughout society, particularly in schools. In addition to resistance, ostracism, and physical or verbal hostility, it can also resemble sexual harassment when it comes to discussing or taunting about sex, making jokes about or disparaging physical features, or using sarcasm and verbal abuse.

### **2.5.2 Appearance Anxiety**

Appearance anxiety is an excessive preoccupation with body image, a negative form of body image preoccupation, or in more serious cases, body image disorder, in which the patient is overly preoccupied with his or her own body image and exaggerates or imagines small or non-existent physical defects that are not really a problem, but are only a subjective "feeling of ugliness". Then, appearance anxiety plays a pivotal role among young people [8].

## **2.6. Intrinsic Factors**

### **2.6.1 Physical Health**

Physical health means that a person is in a good state in terms of his or her body. It includes two aspects: on the one hand, normal body shape and growth, no significant organ ailment, and healthy physiological functioning of the body systems; on the other hand, robust disease resistance, flexible enough to adjust to environmental shifts, a range of physiological cues, and the impact of disease-causing agents on the body.

### **2.6.2 Self-Esteem**

Self-esteem includes a variety of individual thoughts and feelings – about value, self-confidence, respect, effectiveness, and authenticity [9]. An individual's subjective perception of their own image, which may be exaggerated or illogical, might represent their sense of self-esteem. Security, a sense of individuality, a sense of belonging, a sense of mission, and a sense of achievement are the components that makeup one's sense of self-esteem, and they are all connected to the external world in which one lives.

### 3. Extrinsic Factors

#### 3.1. Bullying

##### 3.1.1 Hypothesis

Overweight and obesity are the prescription of bullying association for both boys and young ladies. Adolescent hefty boys and young ladies are more likely to be casualties of bullying since they veer off from appearance standards.

##### 3.1.2 Related Study

According to an experiment done by Lindsey J. Reece MSc, Paul Bissell Ph.D., et al. in 2015, they used a positive sampling strategy through participation in local weight management programs in South Yorkshire, UK, and 12 participants aged between 11 and 16-year-old (4 males and 8 females) were recruited [10].

The weight management club was the venue and time for all focus groups and interviews, which lasted anywhere from 15 to 35 minutes. A thorough interview schedule with twelve open-ended questions was created by the researchers, along with recommendations for additional research if needed. The program was created after important players in the treatment of obesity were consulted and the most recent literature was reviewed. The adaptable questionnaire asked on participants' lived experiences with obesity, its effects on their bodies and minds, and their experiences receiving treatment for their condition in the community. By adhering to this advice, the researcher was able to maintain interview coherence while maintaining flexibility and accommodating the young people's evolving narratives [10].

In their result, most adolescents ( $n = 7$ ) reported bullying by peers, resulting in persistent verbal abuse and social distress [10]. Bullying has been shown to have a detrimental effect on mood and emotions, and many people have been candid about experiencing sadness, anxiety, and rage when they are the target of bullying. These intensified emotions of low self-esteem [10].

Nonetheless, none of the teenagers indicated getting help for their bullying or telling others about their bullying experience [10]. The majority of participants seemed to think that they would feel better about themselves and not be bullied if they lost weight and looked like their classmates [10].

The method of the study completed by Lofrano-Prado, M. C., O. Hill, J., et al. mentioned in their research in 2013, 128 obese teenagers between the ages of 12 and 18 were recruited for the study; 76 girls ( $BMI = 35.46 \pm 3.92$ ) and 52 boys ( $BMI = 33.70 \pm 2.88$ ) were the participants. Individual motivations for starting a weight loss program and challenges with the program were determined through a semi-structured individual interview (8 questions) [11].

They found that 28.95 % of girls and 25% of boys answered that their purpose is the avoidance of bullying [11].

The research done by Sharonda Alston Taylor, MD Beth H., et al demonstrates that one of the biggest motivations for teens to reduce their weight is to avoid being bullied [12].

Furthermore, one prior study concluded that prejudice, bullying, and stigma against overweight teenagers are widespread and have a negative impact on the individuals who are impacted. Millions of people are at danger since weight stigma is frequently observed in significant spheres of life, particularly in educational institutions [13].

##### 3.1.3 Summary

Therefore, in summary of the above research, we can conclude that the avoidance of bullying is one of the main components of weight loss since it effectively lowers the likelihood that teenagers will be bullied.

### 3.2. Appearance Anxiety

#### 3.2.1 Hypothesis

The hypothesis of this part is that one of the extrinsic motivations for the desire for weight loss is the pursuit of their appearance.

#### 3.2.2 Related Studies

According to the survey conducted by Supinya In-iw MD\*, Boonying Manaboriboon MD\*, et al., they screened students with BMI > 25 in two boys' schools and one girls' school for questionnaires. Then, they used the formula [% WFH = (actual weight/ideal weight for actual height) \*100]. to divide those students into different groups, including M-O (% WFH > 120 < 140) and M-S-O (% WFH > 140) groups. This questionnaire consists of 3 parts and 20 questions, including students' satisfaction with their weight, the impact of obesity on their confidence, their desire to lose weight, and so forth [14].

**Table 1.** The part of questions and statistics results of different groups of the questionnaire [14]

	Question	Answer	The mildly obese (MO) group	Moderate to MSO group	p-value*
Body image perception	Not satisfied with his/her own body weight	Yes	61 (81.59%)	88(91.7%)	0.236
	Obesity had adverse results on self-confidence	Yes	36 (50.7%)	69 (71.9%)	0.005*
	Had the desire to lose weight	Yes	62 (87.3%)	91 (94.8%)	0.085
	Would lose weight for cosmetic purposes	Yes	48 (67.6%)	71 (74%)	0.37

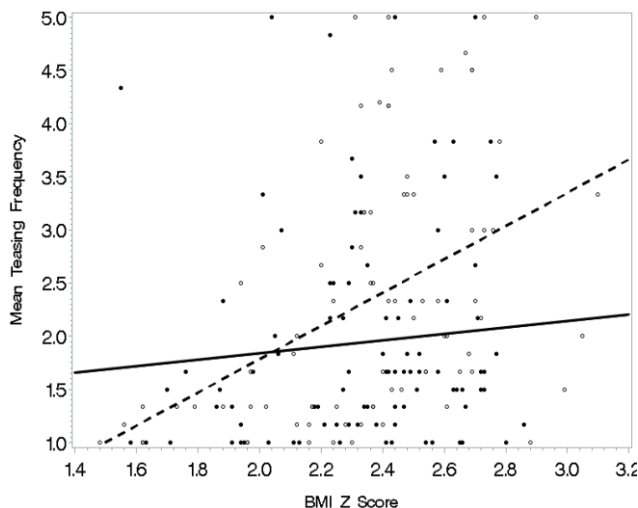
\* p-value of < 0.05 is statistically significant

The percentage of the M-O and M-S-O groups that were unhappy with their body weight was 85.9% and 91.7% respectively and feeling like they needed to reduce their weight. Clearly from this study, obese young people have a poorer self-image, and there exist 67.6% of students of the MO group and 74% of students of the MSO group argue that they lose weight for "cosmetic purposes". (see Table 1) [14].

As per the findings of a 2019 study by Carolyn E. Ievers-Landis, Carolyn E. Ievers-Landis, et al., teenagers who took part in an outpatient weight management program run by a children's hospital were the survey participants. This survey includes the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ) among its questionnaires. The 14 questions that make up the SATAQ scale utilized in this study were empirically constructed and include two subscales: internalizing and conscientiousness [15]. Conscientiousness includes 6 elements that serve as an indicator for the appreciation of social aspect norms [15]. Eight things, like "I usually compare my body to people on television and in magazines," are part of the second subscale, Internalization. Greater awareness and internalization are reflected in higher mean scores [15].

This figure shows that there was minimal association (solid line) between the frequency of taunting among teenagers who are less conscious of societal norms toward appearance and BMI z-scores. However, there was a significant association (dashed line) among teenagers who were acutely aware of societal attitudes regarding beauty and BMI z-scores and bullying. (see in Figure1) [15].

This survey shows that teenagers who have more awareness of social attitudes toward appearance and have high BMI are more likely to be teased. Thus, those kinds of teenagers tend to lose weight so that they can change this dilemma.



**Figure 1.** Relation between the frequency of teasing and BMI z-scores

As Lenny R. Vartanian, Christopher M. Wharton, et al. mentioned in their study, they discovered a positive correlation between body image problems and the motivations for exercising and losing weight. They recruited 205 students from two major universities in the United States: one large public university in the Southwest and one large private university in the Northeast [16].

### 3.2.3 Summary

Thus, in conclusion, the pursuit of self-image is another one of the main contributors that stimulate teenagers to lose weight.

## 4. Intrinsic Factors

### 4.1. Health

#### 4.1.1 Hypothesis

Health is the most essential and prevalent factor among teenagers.

#### 4.1.2 Related Studies

According to one previous bibliographic search, the adolescents with a body weight appropriate for their height but excess body fat were designated as NWO (normal weight obesity). The bulk of research found a connection between the existence of cardiometabolic risk factors and NWO in teenagers [17].

In addition, NWO individuals had reduced muscle mass (measured in kg). The researchers also discovered that those with NWO had greater amounts of total cholesterol when they examined biomarkers, LDL (low-density lipoprotein cholesterol), HDL (high-density lipoprotein cholesterol), and IL-6 (Interleukin 6) [17]. In the meantime, laboratory measures (maximal oxygen consumption measured via open-circuit spirometry using a technique for treadmill exercise testing) showed poorer aerobic ability among NWO persons of both sexes [17].

Therefore, they concluded that NWO in adolescents was relevant to the early development of some diseases, such as cardiometabolic risk [17].

Semi-structured interviews were utilized by Chad D. Jensen, Kara M. Duraccio, et al. to gather data from 40 individuals who had maintained their present weight for a year or more after losing at least 10 pounds. Their findings suggested that intrinsic motivations, such as the desire for improved health, may be the key motivators for teenage weight loss [18].

According to the study carried out by Lofrano-Prado, M. C., et al., the main reason why females participated in weight loss programs was to become more fit. They discovered this through semi-structured interviews with 128 obese respondents, ages 12 to 18 [11]. Meanwhile, the main motivation for boys to try to lose weight is also health [11].

### 4.1.3 Summary

Thus, the author can conclude that obesity is a huge health risk for adolescents, which is the major motivator to encourage teenagers to lose weight.

## 4.2. Self-esteem

### 4.2.1 Hypothesis

Being overweight or obese causes adolescents to experience lower levels of self-esteem due to some types of stigmas, thereby they want to improve this situation by losing weight.

### 4.2.2 Related Studies

According to the summary conducted by van Leeuwen, F., Hunt, D. F et al., they made explanations about the relationship between obesity and stigmas based on three social areas where social exclusion may occur, concluded by Kurzban, Robert Leary, and Mark R. (see Table 2) [19, 20].

They have explanations of the three different types of stigmas and how the obesity stigma may be affected by these stigmas. Firstly, Tribal out-group is sorted in a group, with the motivation of being excluded is acquiring advantages and steering clear of coalitional exploitation expenses and the possible reason of being obese is obese people are seen by non-obese people as a rival alliance. Therefore, nonobese people may choose to socialize with nonobese people rather than obese people in order to avoid the costs of coalitional exploitation. Secondly, there also exists a group named Character Flaw. The main motive of social exclusion is the avoidance of expensive dyadic collaboration and the contributor of people that are obese are not considered good collaborators as well as people may therefore prefer to socialize with non-obese people rather than fat people to avoid potentially expensive dyadic interactions would explain this situation. Another type of stigma is physically abnormality, which is stimulated by the avoidance of pathogenic infection. A potential explanation of it is it is believed that obese people can harbor infections. Persons may therefore choose to mingle with non-obese persons rather than fat ones to avoid infection [19].

No matter what kind of stigma, they would make teenagers feel excluded and isolated, thereby lowering their self-esteem [19].

Indeed, as Richard S. Strauss noted in his research, he employed a longitudinal survey to look into 1520 kids between the ages of 9 and 10 and gauged their degree of self-esteem using the Self-Perception Profile. In his follow-up study, he then sent questionnaires to those kids when they were 13 or 14 years old, assessing their degree of self-esteem.

Interestingly, he discovered in his studies that, when compared to their counterparts who were not obese, between the ages of 13 and 14, obese boys and girls showed significantly poorer self-esteem. Compared to teens who are not obese, obese youngsters have much greater rates of anxiety, loneliness, and depression due to their lower self-esteem [20].

According to the research conducted by Natascha-Alexandra Weinberger, Anette Kersting, et al., they used cross-sectional and multi-level sampling to investigate the participants of 451 females and 549 males with obesity. They used the Multidimensional Body-Self Relations Questionnaire – Appearance Scales (MBSRQ – AS) and The Health Questionnaire – Depression Module (PHQ-9) to ensure their level of satisfaction with their appearance and the degree of their depression and so forth [21].

**Table 2.** Relationships between age, depressive symptoms, attractiveness assessment, and BMI in men with obesity

Variables	1	2	3
1. BMI		-0.240***	0.115**
2. appearance evaluation	-		-0.305***
3. depressive symptoms		-	
* Higher ratings signify greater satisfaction with one's physical appearance. **p<0.01 ***p<0.001			

**Table 3.** Relationships between age, depressive symptoms, attractiveness assessment, and BMI in women with obesity

Variables	1	2	3
1. BMI		-0.244***	0.048
2. Appearance evaluation	-		-0.274***
3. depressive symptoms		-	-
* Higher ratings signify greater satisfaction with one's physical appearance. **p<0.01 ***p<0.001			

In both genders, a relatively high BMI is significantly related to a comparatively low appearance satisfaction. Additionally, there was a strong correlation between depressed symptoms and a less positive body image. (see in table 3, table 4) [21].

According to the research conducted by Stephen R. Earl, he employed the Rosenberg Self-Esteem Scale, which has five items with positive scores and five with negative scores, to gauge the degree of self-worth of 209 participants. He also used the "physical appearance" subscale to gauge appearance-contingent self-esteem.

In the results, total self-esteem scores were found to be normally distributed throughout the sample ( $W = 0.99$ ,  $p = 0.11$ ) [22]. A negatively skewed non-normal distribution was produced by the results for appearance-related self-esteem ( $W = 0.98$ ,  $p = 0.01$ ), appearance satisfaction ( $W = 0.97$ ,  $p < 0.001$ ), reasons for engaging in health exercises ( $W = 0.95$ ,  $p < 0.001$ ), internal motivation ( $W = 0.86$ ,  $p < 0.001$ ), and identified motivation ( $W = 0.93$ ,  $p < 0.001$ ) [22].

Then, He came to the conclusion that higher aesthetic satisfaction and health-related exercise motivations were linked to higher levels of global self-esteem [22]. In contrast, a higher motivation to exercise and a lower level of contentment with one's looks were linked to appearance-related self-esteem. People's motivations for exercising require a grasp of self-esteem [22].

In their review of the literature, Dr. Simone A. French, Mary Story, et al. noted that 13 out of 25 cross-sectional studies showed a substantial decrease in the self-worth of overweight kids and teenagers. Five out of the six cross-sectional studies that included self-esteem assessments showed lower levels of self-esteem in obese children and adolescents compared to those of normal weight [23].

The "Treatment Self-Regulation Questionnaire, Social Physique Anxiety Scale, Physical Self-Description Questionnaire, Kaiser Physical Activity Survey Questionnaire, and items assessing expectations of achievement and self-confidence" are used to measure the data of respondents, according to research by a group of researchers [24]. After their statistics, improving self-esteem is one of the important motivations for their control of their weight [24].

One prior research compared the difference in self-esteem between teenagers with obesity and after their back normal weight. They found that the level of self-esteem witnessed a significant increment after weight loss [25].

In 1996, a study was conducted on 128 patients who had participated in a 6-month program of extremely low-calorie weight loss with 23 months of follow-up by a group of researchers to verify the self-determination theory, which states that if a behavior change is driven by autonomy, it will occur and endure. The results of the analysis confirmed expectations that those with more independent motivations for weight loss would engage in the program more frequently, lose more weight while it was ongoing, and show signs of maintaining their increased weight loss [26].

#### 4.2.3 Summary

Therefore, based on these studies, it is common that negative social feedback such as obesity stigma is given to people with obesity. These would hinder their level of self-esteem, with leads to some unagreeable emotions, like a sense of isolation and so on, under this circumstance, they want to change this kind of situation by losing weight.

## 5. Discussion

Adolescents are strongly affected by social media and peer pressure. In this study, almost all motivations are highly related to these, except the desire for health. Although enhancing self-esteem is supposed to be an intrinsic factor, it is still influenced by weight stigma, which is an unhealthy social pressure.

However, different kinds of motivations would give rise to different effects and maintenance. The people who aim to pursue health always have better outcomes and maintenance as it is their motivation from the heart [26].

In fact, the loss-weight people who are stimulated by external pressure such as appearance rather than from awareness would tend to be on a diet, rather than exercise or fitness to lose weight [16]. This kind of behavior has a vast number of risks and it includes a myriad of bad living habits, such as skipping breakfast even though they know it is the most vital meal in a whole day or lunch [14]. That is to say, their physical condition would be impaired eventually.

On top of that, there exists a phenomenon nowadays, especially in Asia, which is that clothes tend to be smaller their size meaning it has harsher requirements of figure for wearers. Thus, it may be an enforcement for teenagers that they must have slim bodies, or they would be unable to wear those kinds of fashion or stylish clothing. This reason may be another aspect of appearance anxiety.

Moving to teenagers with overweight or obese who pursue healthier bodies, they may know some physical risks, for example, a significant risk for adult obesity, early atherosclerosis, type 2 diabetes, hypertension, and other conditions brought on by being overweight or obese [27].

According to these, in dealing with those issues we should take divergent measures. To alleviate the phenomenon of bullying, schools ought to strengthen their education of ideology, and also investigate and crack down on bullying harshly. In terms of self-esteem and appearance concern, which require social cooperation. The public and governments should prioritize reducing the stigma associated with obesity and limiting the amount of content on social media that promotes a single look. Teenagers should also embrace pertinent information learned in school, such as the fact that everyone has a different growth period and metabolism, which helps them see themselves as unique. This is a good method to help them accept their bodies and gain confidence in themselves, as well as the knowledge that losing weight is ultimately about their health.

This study digs into the four main motivations of weight loss according to the research conducted by a group of investigators, more deeply and explains the background and psychological systems of these. In further studies, they can target different age groups, such as extending the range of research to adults and comparing participants to the difference in motivations between adults and adolescents. Additionally, they can also target the topic that is mentioned several times in this study, which is social media. They can learn about the specific process of impact brought by it.

## 6. Conclusion

This study explores the 4 major motives of weight loss among adolescents through bibliographic retrieval. By reviewing the literature, this research has a basic theoretical implication, which refers to except the desire for health, others are motivated by social pressure radically. This research also provides some suggestions, such as strengthening health-related education campaigns in schools, with future directions of relevant research including the specific process or impact of social media and influencers cultures for adolescents and exploring more contributors of weight loss among teenagers combining some other factors, such as context background and so forth.

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