

Experiences of Obese Adolescent Girls in Depression Prevention

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ABSTRACT

Depression in obese adolescent girls is a serious disorder that can affect their behavior, emotions, and thoughts. The purpose of this study was to explore the experiences of obese adolescent girls in preventing depression. This study used a qualitative approach, a phenomenological study. The participants were 11 obese adolescent girls in Pekanbaru City, selected using a purposive sampling technique. The data collection method used was in-depth interviews. Data were analyzed using the Colaizzi method. The results showed that there were four themes and 13 sub-themes. The first theme was the unpleasant experiences of obese adolescents, consisting of three sub-themes: body shaming, bullying, and discrimination. The second was the psychological impact, consisting of two sub-themes: intrapersonal and interpersonal impacts. The third was the internal factors determining depression prevention, consisting of four sub-themes: knowledge of depression, self-esteem, self-image, and coping mechanisms. The fourth was the external factors determining depression prevention, consisting of four sub-themes: peers, teachers, family, and health care workers. In conclusion, obese adolescent girls had unpleasant experiences, experienced psychological impacts, and were aware of the internal and external determinants of depression prevention. It is hoped that healthcare institutions will provide intensive nursing care for adolescents with obesity to prevent depression.

Keywords: adolescent girls; obesity; depression; experience; prevention

INTRODUCTION

Depression is one of the most common emotional disorders experienced by adolescents [1]. Symptoms of depression tend to increase during early and middle adolescence. In the United States, approximately 2.2 million adolescents aged 12–17 years have experienced at least one episode of major depressive disorder [2]. According to the Indonesian National Adolescent Mental Health Survey (I-NAMHS), one in three adolescents—or around 15.5 million individuals aged 10–17 years—experience emotional problems, with 3.7% reporting anxiety and 1% reporting depression [3]. A study involving 230 adolescents aged 16–18 years found that 17 respondents experienced depression, while 65 were at high risk of developing depression [4]. Another survey of 247 adolescents aged 15–18 years using the Beck Depression Inventory (BDI) reported that most depressive symptoms fell within the mild category, with an average score of 13.97 [5].

Multiple studies have shown that depression is more prevalent among female adolescents than males. Female adolescents have a 24% risk of depression compared to 4% among males, with depressive episodes occurring in 7% of females and 1% of males [4]. Psychological changes in female adolescents tend to be more sensitive and burdensome. The higher prevalence of depression among female adolescents is associated with hormonal fluctuations, particularly estrogen and progesterone, which influence the nervous system and mood regulation [6].

Depression among female adolescents is multifactorial, with obesity being one contributing factor. Globally, more than 340 million children and adolescents aged 5–19 years are classified as overweight or obese [7]. The prevalence of obesity in children and adolescents is projected to increase by 60% by 2030 [8]. Currently, obesity affects 20.6% of adolescents aged 12–19 years, a higher proportion compared to children aged 6–11 years (18.4%) and those aged 2–5 years (13.9%) [9].

In Indonesia, the prevalence of obesity among individuals aged ≥ 18 years increased from 15.4% in 2013 to 21.8% in 2018 [10]. Similarly, obesity among individuals aged ≥ 15 years rose from 26.6% (2013) to 31.0% (2018). Adolescents aged >12 years exhibit a higher prevalence of obesity compared to infants and younger children.

A study involving 69,893 obese adolescents in China reported that the prevalence of depression among obese adolescents ranged from 10.1% to 26.7% [11]. Depression among overweight and obese female adolescents was significantly higher than among their male counterparts (21.73%, OR = 1.46, 95% CI: 1.14–1.87, $p = 0.003$) [12]. In Indonesia, the Indonesian Pediatric Society (IDAI) Yogyakarta reported in 2017 that 6% of adolescents experienced severe depressive symptoms. A study of 144,000 Indonesian female adolescents found that those with obesity had a 40% higher risk of depression compared to those with normal body weight. This finding is supported by another study showing that 40% of female adolescents exhibited depressive symptoms, compared to 24% of male adolescents [13, 14].

Obesity accompanied by depression in adolescents is a serious public health concern, contributing to disease burden as measured by Disability Adjusted Life Years (DALYs) and increasing healthcare costs in adulthood [15]. Healthcare expenditures related to obesity and depression include direct medical costs, social and personal opportunity costs, and indirect costs due to reduced productivity. In several developed countries, these expenditures account for 2–7% of total healthcare spending. Obese female adolescents with depression face increased risks of morbidity and mortality due to physical, psychological, and social health problems that impair mental well-being [16].

Obese female adolescents often experience difficulties performing daily activities at school and home, including academic tasks, walking, exercising, participating in extracurricular activities, and completing household responsibilities. These challenges may lead to passivity, negative experiences, and perceptions of poor self-control or motivation. Many obese female adolescents report experiencing body shaming, bullying, discrimination, and intimidation from peers (92%) and physical education teachers (8%) [17]. Psychological consequences of obesity include negative self-image, low self-esteem, depression, and even suicidal ideation.

Depression may drive obese female adolescents to adopt unhealthy weight-control behaviors, such as extreme dieting or the misuse of weight-loss medications, which may lead to gastrointestinal, cardiac, and renal complications [18]. Depression may also exacerbate the reproductive health consequences of obesity. Excess adiposity disrupts reproductive hormones such as estrogen, FSH, and LH, leading to menstrual irregularities, increased risk of Polycystic Ovary Syndrome (PCOS), and potential infertility [19]. When depression coexists with obesity, reproductive health outcomes worsen, posing risks not only to the adolescent but also to potential fetal development in future pregnancies.

Depression among obese female adolescents is a serious condition that affects behavior, emotions, and cognition, and its persistent nature requires comprehensive intervention across sectors [20]. Preventive strategies targeting depression among female adolescents are essential, particularly for those experiencing obesity.

In Riau Province, the prevalence of depression is 6.63%, higher than the national average [10]. Pekanbaru City is one of the regions with high rates of both depression and obesity. A study involving 132 students from seven public high schools in Pekanbaru found an obesity prevalence of 23.5%, with 56% occurring among female adolescents and 44% among males. Psychological assessment using the DASS-42 revealed that 17.4% of respondents experienced depression, with a significant association between depression and obesity ($p = 0.005$; OR = 0.219). Depression was more prevalent among female adolescents (21.2%) than males (13.4%). Among obese adolescents, 7.6% experienced depression [12]. These findings are supported by early detection using the Mini International Neuropsychiatric Interview, which reported that 4.55% of Pekanbaru residents experienced depression, with higher rates among females (8.58%) than males (4.78%), and 4.84% among school-aged children.

Furthermore, data from Tampan Mental Hospital in Riau Province showed that 523 children and adolescents aged 5–24 years were brought in by their families in 2020, increasing to 571 in 2021 [10]. This trend indicates a growing mental health burden among children and adolescents, with significant implications for their current well-being, future development, and the next generation.

To date, no studies have specifically explored the experiences of obese female adolescents in preventing depression. Existing research has focused primarily on adolescents with depression or those with obesity. Based on the phenomena described, it is important to investigate the experiences of obese female adolescents in preventing depression in Pekanbaru City, Riau Province, to support community nurses in improving adolescent mental health through more targeted and effective preventive strategies.

This study aims to explore the experiences of obese female adolescents in preventing depression in Pekanbaru City, Riau Province, Indonesia.

METHODS

This study employed a qualitative design with a phenomenological approach. The research aimed to explore the experiences of obese female adolescents in preventing depression. Participants were selected using purposive sampling. A total of 11 participants were recruited from 11 junior and senior high schools in Pekanbaru City, Riau Province. The inclusion criteria were: (1) female adolescents classified as obese based on age-adjusted Body Mass Index (BMI-for-age); (2) fully conscious and oriented (compos mentis); (3) able to speak, read, and write in Indonesian; (4) cooperative and willing to participate; and (5) residing in Pekanbaru, Riau.

Data collection was conducted through a one-time, in-depth interview with each participant using Indonesian as the medium of communication. Prior to the interview, an initial offline meeting was held to introduce the researcher, explain the study's purpose, and establish rapport and trust. The interview instrument had undergone content validity assessment. All interviews were audio-recorded using an electronic device and subsequently transcribed verbatim into written transcripts.

Data trustworthiness was ensured through triangulation. Three types of triangulation (source, technique, and time) may be used to enhance data validity. In this study, the researcher applied technique triangulation by employing multiple data collection methods, including interviews, observations, and documentation with the same participants. The interview questions focused on depressive symptoms experienced by obese female adolescents, their efforts to prevent depression, internal factors influencing depression prevention, and external factors related to depression prevention. Data analysis followed Colaizzi's method, which includes primary and secondary data collection, data reduction, data presentation, conclusion drawing, and verification [21].

RESULTS

Table 1 shows that the number of participants in the Focus Group Discussion (FGD) was 11 people, aged 14–18 years. Most of the participants (8) were at the high school level. The ethnicity of the participants varied, with the largest number being Minang (four) people. The majority of families had low economic status, meaning they were below the minimum wage (UMR) in Pekanbaru City (eight). All participants were in the obesity category 1

Table 1. Characteristics of obese female adolescent participants in Pekanbaru City, Riau Province (n = 11)

Participant code	Age (years)	Education	Ethnicity	Economic status	Obesity category
P1	15	Senior high school	Minang	Low	1
P2	16	Vocational high school	Jawa	Low	1
P3	17	Vocational high school	Melayu	Low	1
P4	16	Senior high school	Minang	Low	1
P5	14	Junior high school	Batak	High	1
P6	14	Junior high school	Batak	High	1
P7	17	Vocational high school	Batak	Low	1
P8	17	Senior high school	Minang	Low	1
P9	18	Senior high school	Minang	Low	1
P10	17	Senior high school	Melayu	Low	1
P11	14	Junior high school	Melayu	High	1

The findings of this study identified four themes and thirteen sub-themes describing the experiences of obese female adolescents in preventing depression.

Theme 1: Unpleasant experiences

This theme captures the unpleasant experiences encountered by obese female adolescents, originating from peers, family members, teachers, and healthcare providers such as those in community health centers. Three sub-themes were identified: body shaming, bullying, and discrimination.

Sub-theme 1: Body shaming

Weight: All participants reported that their body weight was frequently used as a target of ridicule by people around them. Their larger body size often triggered explicit and uncomfortable comments.

"My mom at home likes to joke that I'm getting fatter every day, it's hard to look at..." (P2)

"Friends often tease me, calling me fat in class, in the canteen, even during sports..." (P6)

Age: Most participants (8 adolescents) expressed that their facial appearance and body size often led others to perceive them as older than their actual age. Their physical size was frequently equated with that of older adults.

"We're the same age, but they say I look like an aunt who's married with kids..." (P1)

"You're so fat, your face looks like an older woman..." (P7)

Clothing: Participants also described negative comments related to clothing, particularly regarding the size of the clothes they wore. They like to mock me, saying my clothes are jumbo size and waste a lot of fabric..." (P3)

Sub-theme 2: Bullying

Verbal bullying: Seven of the eleven participants reported receiving negative and demeaning verbal comments about their body size, often comparing them to large animals or making other derogatory remarks.

"Friends often call me 'the elephant is passing by, move or you'll get hit'..." (P5)

"At school, a teacher once said my photo looked different from real life, asking if I edited it to look slimmer..." (P7)

Physical bullying: Nine participants stated that they had experienced direct physical mistreatment. Although some actions began as jokes, they could lead to injury or harm if not stopped.

"Some friends often hit my shoulder, arm, or back, saying I wouldn't feel it because I'm fat..." (P3)

"They blocked my way when I tried to leave the classroom, especially after school ended..." (P9)

Sexualized bullying: Six participants reported receiving degrading comments related to romantic relationships, often implying that their physical appearance made them undesirable.

"They say no one would want to date a fat girl like me..." (P6)

Sub-theme 3: Discrimination

Peer-related restrictions: Eight participants described experiencing discriminatory treatment from peers, which made them feel excluded or treated differently from others.

"Friends are stingy about giving me a ride on their motorbike, saying I'm too big and won't fit..." (P11)

"Here, people form gangs or bestie groups... I'm never included because no one invites me to be their bestie..." (P1)

Teacher-related restrictions: Seven participants reported discriminatory behavior from teachers, often expressed through indirect remarks or exclusion from activities.

"During class, the teacher once said I needed a bigger chair so I could fit..." (P2)

"In physical education, I'm often separated from others and not allowed to join games because they say I'll make the team lose..." (P5)

Theme 2: Psychological impacts of obesity

Two sub-themes were identified under the psychological impacts of obesity: **intrapersonal impacts** and **interpersonal impacts**, consisting of four categories: solitude responses, expressive responses, social withdrawal, and negative feelings.

Sub-theme 1: Intrapersonal impacts

Solitude response: Eight participants reported experiencing internal discomfort and sadness, including low self-esteem, lack of confidence, and emotional distress due to bullying.

"I feel insecure and just want to be alone, I'm too tired to meet people because many tease me for being fat..." (P3)

"The teasing makes me insecure and lose confidence in everything, especially at school..." (P5)

Expressive response: Seven participants described feeling anger or frustration as a reaction to the bullying they experienced.

"Sometimes I get really upset with friends who are so mean, teasing me for being fat... I feel like punching them..." (P4)

"I feel angry at friends who tease me..." (P8)

Sub-theme 2: Interpersonal impacts

Social withdrawal: Nine participants stated that bullying made them uncomfortable being around others, leading them to avoid social interactions. They felt more comfortable being alone.

"Now I feel lazy to meet people in public places..." (P4)

"Wherever I go, I feel more comfortable being alone and prefer it that way..." (P7)

Negative feelings: Eight participants expressed negative emotional responses due to bullying, including disgust, resentment, and frustration toward peers and family members.

"Those friends who tease me make me disgusted with them, and I hate the teacher who likes to make sarcastic comments..." (P9)

"I feel annoyed with my mom who likes to make comments but doesn't provide any diet support at home..." (P2)

Theme 3: Internal determinants of depression prevention

Internal determinants refer to personal factors that function as protective components against depression among obese female adolescents.

Sub-theme 1: Knowledge of depression

Signs of depression: Six of the eleven adolescents stated that depression is associated with stress and mental health disturbances.

"People with depression are like mentally ill people who experience stress." (P2)

Symptoms of depression: Eight participants described early symptoms of depression as changes in social behavior, particularly social withdrawal, sadness, and isolation.

People with depression tend to be alone, sad, and isolate themselves." (P7)

Consequences of depression: Nine participants reported that depression may lead to prolonged sadness, loss of confidence, mental health disturbances, self-harm, and in severe cases, suicidal behavior.

"Adolescents with depression feel prolonged sadness and want to commit suicide." (P6)

"People with depression seem insecure, lose confidence around others, isolate themselves, and may commit suicide." (P2)

Sub-theme 2: Self-esteem

Power (sense of worth): Eight participants expressed that bullying significantly reduced their sense of self-worth, leading to feelings of shame and low confidence.

"Being constantly called fat makes me feel ashamed and less confident." (P2)

"Sometimes I feel worthless because I'm always treated differently and teased for being fat." (P5)

Virtue (Self-Regulation and Judgment)

Six participants reported difficulty maintaining consistent decision-making, especially regarding their appearance. They felt their appearance was always judged negatively compared to thinner peers.

"I often lose focus on my appearance because I'm always compared to thinner friends." (P3)

"My appearance is always considered bad because whatever I wear never looks good to my friends." (P9)

Sub-theme 3: Body image

Mindset: Seven participants stated that bullying changed the way they perceived themselves. To achieve a socially accepted body image, they felt pressured to lose weight.

"To avoid depression from being fat, I must change myself to be thin like others. It feels lighter and clothes fit better." (P1)

"The first step to prevent depression from being fat is to lose weight in many ways, supported at home." (P3)

Actions: Six participants reported taking concrete steps to meet perceived ideal body standards, such as dieting and exercising.

"I really want to diet and eat less so I don't get fatter and depressed." (P8)

"I must exercise regularly so my weight can drop significantly." (P4)

Sub-theme 4: Coping responses

Psychological responses: Seven participants described various psychological coping strategies, such as ignoring hurtful comments or responding verbally to bullies.

"Don't take hurtful teasing to heart or you'll get depressed and suicidal. I just ignore it to stay sane." (P5)

"I talk back when friends tease me so they know how it feels." (P9)

Physical responses: Six participants used physical coping strategies, such as walking in public spaces or consuming positive online content to improve their mood.

"I usually walk around the mall to calm myself and refresh my mind." (P4)

"I try to view positive social media content to learn how to calm myself and not take things to heart." (P9)

Theme 4: External determinants of depression prevention

External determinants refer to environmental and social factors that influence how obese female adolescents prevent depression.

Sub-theme 1: Peers

Negative imperatives toward peers: Six participants expressed a desire for peers to stop bullying and avoid making hurtful comments.

"Friends shouldn't tease us; it's better if they support us." (P11)

Positive imperatives toward peers: Seven participants hoped peers would provide moral support, motivation, companionship, and constructive advice.

"I want friends to motivate me, not bully me... it hurts." (P7)

"I'm happy when friends accompany me to exercise or suggest diet foods to help me lose weight." (P7)

Sub-theme 2: Teachers

Negative imperatives toward teachers: Seven participants hoped teachers would refrain from making sarcastic remarks, treating them differently, or humiliating them in front of others.

"Teachers are like parents at school; they should set a good example by not mocking fat students." (P4)

"Some teachers treat fat and thin students differently in sports, saying we can't win." (P8)

Positive imperatives toward teachers: Nine participants wanted teachers to model positive behavior, provide encouragement, and defend obese students who experience bullying.

"Sports teachers should motivate us to exercise more so we can lose weight." (P8)

"I want teachers to defend us when others bully us, not laugh along as if it's a joke." (P9)

Sub-theme 3: Family

Negative imperatives toward parents: Six participants hoped parents would avoid making hurtful jokes or showing unequal affection among siblings.

"Don't treat us differently from other children; treat everyone the same." (P3)

"It would be nice if moms didn't call us fat as a joke but showed they seriously want us to be healthy, like cooking diet meals without oil." (P10)

Children's expectations toward parents: Eight participants hoped parents would maintain emotional closeness and provide affection so adolescents would not feel alone when facing problems.

"I want parents to be caring and treat all their children equally." (P3)

"I hope my mom gives affection so we can talk about how to lose weight." (P9)

Positive parental actions: Six participants hoped parents would provide not only emotional support but also material support, such as healthy food options.

"My mom prepares a 2-liter water bottle so I drink more instead of snacking." (P2)

Sub-theme 4: Healthcare providers at community health centers (Puskesmas)

School-based health personnel: Nine participants hoped school health workers would conduct routine health checks and provide education on proper nutrition and weight management.

"If nurses or midwives come to school, it would be good if they gave education on weight loss or preventing depression and bullying." (P1)

"Doctors, nurses, or midwives should provide consultation time for students with physical or psychological problems." (P5)

Puskesmas services: Seven participants hoped *Puskesmas* staff would create a friendly service environment and allocate sufficient consultation time to address obesity-related concerns.

"Puskesmas should stay open until late afternoon so we students can consult after school." (P3)

"I want doctors, nurses, or midwives at the *Puskesmas* to be friendly, not rude, and kind to us." (P7)

DISCUSSION

Based on in-depth interviews with 11 obese female adolescents aged 14–18 years, the findings indicate that they frequently experience unpleasant events such as body shaming, bullying, and discrimination from peers, teachers, and parents. These experiences generate both intrapersonal and interpersonal impacts, reflected in four categories: solitude responses, expressive responses, social withdrawal, and negative self-perception.

Obesity is not merely a physical condition but also an implicit social issue that often leads to stigmatization. Psychological consequences include discrimination, intimidation, and social isolation, which may contribute to low self-confidence, reduced self-esteem, negative body image, anxiety, stress, depressive symptoms, and—in severe cases—risk of self-harm [23]. Among female adolescents, psychological changes tend to be more sensitive and burdensome. Negative stimuli create painful impressions that may evoke emotional avoidance [24]. These emotional responses are closely linked to social perception and influence interpersonal and group relationships [25].

The qualitative findings show that 8 of the 11 obese female adolescents recognized early signs of depression as persistent sadness, social withdrawal, and isolation. According to participants, depression may lead to prolonged emotional distress, diminished confidence in social interactions, mental health disturbances, self-harm behaviors, and—in extreme cases—suicidal ideation. Depressive symptoms typically persist for at least two weeks and significantly impair daily functioning. Hormonal, psychological, and social changes during adolescence create heightened stress. During this developmental period, neural circuits connecting the amygdala, hippocampus, and prefrontal cortex mature, influencing the activity of the hypothalamic–pituitary–adrenal (HPA) axis.

The HPA axis, one of the most important neuroendocrine systems, regulates stress responses. In adolescents, increased levels of sex hormones may heighten HPA axis reactivity. Elevated activity in this circuit has been observed among individuals experiencing depressive symptoms [26]. Depression among obese female adolescents may also exacerbate the long-term reproductive health consequences of obesity.

This study also highlights external determinants, particularly peer influence, as significant contributors to depression. Adolescents often struggle to regulate their emotions, and those who are overweight tend to experience negative emotions and poor body image, increasing their vulnerability to peer victimization [27]. Positive peer support—such as encouragement to eat healthily, engage in physical activity, and prevent excessive weight gain—can foster healthier attitudes and overall well-being [28]. Other studies emphasize the importance of recognizing peer victimization when designing mental health interventions for adolescents [29].

Seven of the eleven adolescents expressed a desire for teachers to refrain from making sarcastic remarks, treating them differently, or humiliating them in class. Supportive strategies from teachers include building rapport, fostering empathy, treating students equally, providing motivation, and offering guidance. School- and family-based health promotion programs focusing on healthy nutrition, reducing sedentary behavior, and establishing structured physical activity standards are also essential [30]. As parental substitutes at school, teachers play an important role in monitoring students' dietary habits and physical activity to reduce obesity risk [31].

Interviews with parents revealed that 5 of the 6 parents of obese female adolescents identified several barriers to weight reduction, including frequent consumption of snacks, fried foods, and sugary foods and beverages. Parents also recognized physical signs of obesity such as excessive weight [up to 80 kg], neck folds, and limited mobility. Regarding the psychological impact, parents reported that their daughters often felt inferior, withdrawn, preferred staying at home, and had difficulty socializing. Parents—especially mothers—are expected to modify family eating habits, monitor nutritional intake, and manage household routines to support healthier behaviors [32–36].

Another external determinant identified in this study is the role of health services at *Puskesmas*. Participants reported that adolescent-specific health services were not optimally implemented. Some noted that not all *Puskesmas* provide dedicated services for adolescents, particularly those experiencing psychological distress related to obesity. Collaborative health services involving multiple programs, sectors, organizations, and professions are essential to address obesity-related issues. Health education, anthropometric assessments, and consultations regarding psychological impacts are among the competencies available at *Puskesmas*. These findings align with the study's conclusion that *Puskesmas* services are the most significant external factor influencing depression prevention. Limited responsiveness from *Puskesmas* may increase the number of obese female adolescents experiencing psychological distress.

A limitation of this study is the unequal distribution of participants from junior and senior high schools due to administrative constraints at the school level. The researcher maximized available opportunities to obtain eligible participants.

CONCLUSION

Obese female adolescents experience various unpleasant events originating from peers, family members, teachers, and healthcare providers. Obesity affects them both physically and psychologically. Internal determinants of depression prevention include knowledge, attitudes, body image, and self-esteem, while external determinants involve positive support from peers, family, teachers, and healthcare personnel at *Puskesmas*. It is expected that *Puskesmas*, through its Health Promotion Unit, Mental Health Nursing Unit, and Community Health Nursing Unit, can provide appropriate nursing care for obese adolescents to prevent depression. This study is also expected to support promotive and preventive efforts in nursing practice, particularly family nursing care for adolescents with obesity who are at risk of depression.

Ethical consideration, competing interest and source of funding

- This study received approval from the Ethics Committee of Universitas Andalas, with reference number 163/UN.16.2/KEP-FK/2023.

- There is no conflict of interest related to this publication.

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