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The Psychological Burdens of Obesity: A Mixed-Methods Exploration of Early Maladaptive Schemas and Well-Being

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Abstract

This study explores the relationships between early maladaptive schemas, schema avoidance behaviors, and psychological well-being in obese adults while also examining their life experiences and coping strategies. Using an explanatory mixed-methods design, the study first conducted a quantitative phase with 785 obese adults (BMI ≥ 30), analyzing data from the Psychological Well-being Scale, Young Schema Questionnaire, and Young-Rygh Avoidance Inventory through structural equation modeling (SEM). Findings indicated that schemas such as social isolation, insecurity, enmeshment, dependency, punitiveness, and self-sacrifice predicted schema avoidance and negatively impacted psychological well-being. In the qualitative phase, eight obese women who scored low on the Psychological Well-Being Scale but high on schema questionnaires participated in focus groups. Thematic analysis revealed that defectiveness, emotional deprivation, poor self-control, and high standards schemas were frequently triggered in obesity. The integration of quantitative and qualitative findings emphasized the significant role of schemas in obesity-related psychological distress.

Key Words

Obesity, Schemas, Well-being

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Introduction

Obesity, which is rapidly spreading in a changing world and has a detrimental impact on human life, is defined as an excessive increase in body fat tissue to a level that endangers health, resulting from an abnormal or excessive accumulation of fat. However, the diagnosis of obesity is made by calculating the Body Mass Index (BMI). BMI is an estimated body fat ratio indicator obtained by dividing a person's weight (kg) by their height squared (kg/m²). Accordingly, a BMI value of 30 and above is considered obesity (Yücel, Akdemir, Küey, Maner & Vardar, 2013).

In the formation of obesity, along with the imbalance between the energy expended and consumed by an individual throughout the day, behavioral factors such as eating habits and insufficient physical activity, as well as psychological, genetic, cultural, and familial factors, are suggested to contribute to obesity (Castelnuovo et al., 2015). Eating and nutritional behavior is learned through the relationship established with the mother in the first year of life, but in later years, it is shaped by modeling within the family. During development, eating and nutrition serve two functions. The first is to meet both biological and psychological needs to protect and enhance health; the second is to provide emotional relief through emotional eating behavior (Sevinçer & Konuk, 2013).

The concept of emotional eating refers to individuals eating due to emotional needs (van Strien et al., 2013). Emotional eating is both a personal coping mechanism for dealing with negative emotions and is also considered a learned maladaptive coping strategy (Sheffield, Waller, Emanuelli, Murray, & Meyer, 2009). The identification of obesity and a tendency toward emotional eating in children whose parents use food as a coping mechanism for negative emotions supports this perspective, indicating that learning and modeling contribute to obesity. In this context, family eating patterns and habits are recognized as risk factors for obesity through modeling. Furthermore, research on emotional eating has found that individuals experiencing negative emotions such as anger, anxiety, and sadness tend to consume more fatty, high-calorie, and carbohydrate-rich foods, whereas individuals who are happy, content, and calm make healthier food choices and maintain a more balanced diet (Ata, Vural, & Keskin, 2014; İnalkaç & Arslantaş, 2018; van Strien et al., 2013).

The quality of family relationships and parenting methods are seen as highly influential in shaping eating attitudes and behaviors learned during childhood. It is known that healthy parentingincludes allowing children to develop greater self-efficacy and self-discipline, leading to lower rates of emotional eating (Brown, Selth, Stretton, & Simpson, 2016). On the other hand, punitive parenting styles and a lack of sufficient emotional connection are said to hinder a child's ability to develop emotional regulation and control, which in turn increases emotional eating as a coping mechanism (Kiraly, Hurt, & Van Way, 2011).

Obesity, which results from unhealthy eating habits, not only alters individuals' physical apperance but also significantly damages their social life and relationships. It has been reported that obese individuals face discrimination and prejudice in their work, school, and social environments (Ata et al., 2014). Negative social attitudes are also said to trigger negative emotions and depression (Canetti, Bachar, & Berry, 2002). A study on obese women revealed that they experienced stigmatizing attitudes from healthcare professionals, leading them to delay seeking weight-loss treatment due to the judgmental attitudes and looks they encountered in healthcare facilities, ultimately resulting in continued weight gain (Chua, Touyz, & Hill, 2004; Coşkun & Özdilek, 2015).

Obesity-related eating behavior negatively affects not only social life but also emotional well-being. Studies have found a link between obesity and difficulties in emotional regulation. In this context, it has been observed that individuals increase their overeating behavior to cope with the negative emotions resulting from being labeled for their weight and experiencing negative social attitudes (Gearhardt et al., 2012; Imperatori et al., 2017). All these findings suggest that negative body image and low self-esteem lead individuals to compensate through eating behaviors. From a developmental perspective, eating disorders and obesity are considered the results of maladaptive schemas developed due to unmet needs during childhood (Aloi et al., 2020). Accordingly, examining maladaptive schemas will be crucial in explaining the issue.

Schemas are cognitive, emotional, and behavioral structures that we use to meet our needs in adulthood but have roots in early life experiences (Young & Klosko, 2014). Therefore, schemas are considered the building blocks of personality, influencing a person's decisions about themselves, their surroundings, and the world (Luz et al., 2017).

The development of schemas is greatly shaped by attachment figures as well as relationships with family members and other significant individuals. Through these interactions during the developmental process, a child forms positive or negative mental models, memories, emotions, and bodily sensations related to themselves and others (Webb & Musello, 2019). It is pointed out that every child can develop both adaptive and maladaptive schemas influenced by their caregivers during childhood (YounG et al., 2009).

For schemas to be functional and adaptive, five fundamental needs should be met from infancy through the developmental stages. The first is the need for secure attachment, which includes safety, consistency, care, compassion, and acceptance. The second is the need for independence, success, autonomy, competence, and a sense of uniqueness. Along with the freedom to express needs and feelings, spontaneity, play, and enjoying life are also essential, as well as realistic limits and self-control, which are foundational to schema development (Luz et al., 2017). If these needs are not sufficiently and healthily met, schemas manifest in life as maladaptive schemas. These schemas function across five schema domains: "disconnection/rejection, impaired autonomy, impaired limits, overvigilance/inhibition and other-directedness" encompassing 18 maladaptive schemas.

Early experiences and interactions where attachment needs are not met lead to the development of maladaptive schemas such as emotional deprivation, defectiveness, social isolation, mistrust, and abandonment (Calvert, Smith, Brockman, & Simpson, 2018). When autonomy is not achieved, the impaired autonomy domain is activated, leading to schemas of enmeshment, vulnerability, dependence, and failure. If the need for freedom to express emotions and needs is unmet, the impaired limits domain results in entitlement and insufficient self-control schemas. Similarly, when spontaneity and play needs are not met, overvigilance/inhibition schema domain develops maladaptive schemas like emotional inhibition, punitiveness, pessimism, and unrelenting standards. Lastly, if realistic limits and self-control do not develop, other-directedness schema domain leads to self-sacrifice, subjugation, and approval-seeking schemas (Young, Bernstein, & Young, 2009).

Schemas that guide an individual's life turn into behavior through schema actions. These schema actions occur when schemas are triggered, compelling the individual to act based on emotions and cognitions at that moment. Schema actions, like schemas themselves, are learned in childhood, and in adulthood, individuals tend to rely on

childhood-learned schema actions when coping with schema activation. These actions fall into three patterns: schema maintenance, schema avoidance, and schema compensation (Rafaeli, Bernstein, & Young, 2013; Young et al., 2009).

Schemas and schema actions, shaped by early negative emotional, bodily, and cognitive experiences, continue to reinforce negative experiences throughout life, impacting individuals into adulthood (Webb & Musello, 2019). Research has shown a connection between maladaptive attachment patterns, developed due to caregivers' failure to meet a child's needs, and eating disorders and dysfunctional eating behaviors (Sheffield et al., 2009). People with childhood attachment issues and traumatic experiences are more likely to have their schemas triggered and resort to maladaptive schema behaviors (Taylor, Bee, & Haddock, 2017). Experiences of humiliation, punishment, and being made to feel defective during childhood may lead adults to be punitive toward themselves (overeating, criticizing overweight individuals), exhibit instability, and struggle to recognize harmful patterns (Webb & Musello, 2019). Additionally, early childhood trauma is believed to impair a child's ability to learn hunger and satiety cues, making them more prone to overeating and obesity later in life (Basile, Tenore, & Mancini, 2019). In addition to these, childhood obesity has been linked to social isolation, increased feelings of inadequacy and defectiveness, and an increased likelihood of persisting into adulthood (Yıldırım & Keser, 2015).

Many studies have established a relationship between obesity and maladaptive schemas. Significant links have been found between eating disorders and the disconnection-rejection schema domain, as well as the impaired autonomy and performance schema domains (Imperatori et al., 2017). Similarly, obesity has been associated with maladaptive schemas such as emotional deprivation, defectiveness, abandonment, mistrust, self-sacrifice, and unrelenting standards (Luz et al., 2017). Obese individuals score higher in abandonment and social isolation schemas compared to non-obese individuals (Meule & Gearhardt, 2014). These schemas not only influence a person's self-perception and perception of others but also jeopardize their well-being. In this case obesity negatively affects both self-concept and relationships, making it a significant psychological issue.

Psychological well-being is related to maturity, functionality, and self-actualization. Ryff (1989) explains psychological well-being through six components: self-acceptance (positive self and life evaluation), life purpose, positive relationships, environmental mastery, personal growth, and autonomy (Ryff & Singer, 2008). These components indicate that well-being is not just a simple combination of emotional states or life satisfaction but involves multiple emotional, social, and functional dimensions (Ryan & Deci, 2001).

Obesity is assumed to negatively impact both physical and psychological well-being (Poursharifi, Bidadian, Bahramizadeh, & Salehinezhad, 2011). The negative effects of obesity, especially when decline in productivity due to weight-related issues are linked to reduced self-esteem and difficulties in emotion regulation (Gearhardt et al., 2012). The decline in life quality and well-being due to obesity has been found to increase the risk of depression, anxiety, eating disorders, and personality disorders (Basile et al., 2019; Pietrabissa, 2018).

The relationship between well-being and schemas has been widely discussed in the literature. The quality of childhood attachment relationships is now recognized as a key factor influencing an individual's psychological well-being, relationships, and life satisfaction (Nordahl et al., 2019). More recently, research on obesity has explored its

connections with psychological well-being, maladaptive schemas, schema-driven behaviors, and schema modes (Imperatori et al., 2017; Poursharifi et al., 2011; Webb & Musello, 2019).

Obesity negatively affects well-being through schemas. Early maladaptive schemas threaten life quality and well-being. Poor childhood attachment relationships contribute to the development of maladaptive schemas, which in turn increase the likelihood of depression, anxiety, and other psychological symptoms in adulthood. This distress often leads to a dissociative protective mode, where individuals turn to calorie-dense and energy-rich foods as a means of emotional eating, resulting in weight gain (İnalkaç & Arslantaş, 2018; Nordahl et al., 2019).

The negative body image caused by obesity—along with feelings of defectiveness, inadequacy, unattractiveness, and unworthiness—activates schemas of rejection, fear of social disapproval, and fear of exclusion. These issues further impair well-being and drive individuals toward emotional eating. Studies have found significant links between emotional deprivation, insufficient self-control, failure, and distrust/abuse schemas and reduced life quality among obese individuals (Luz et al., 2017). These findings highlight how multiple schemas interact with schema avoidance behaviors and affect psychological well-being in the context of obesity. On the other hand, interestingly, happiness and psychological well-being have been shown to enhance the enjoyment of food, encourage healthy eating behaviors, and promote the selection of nutritious foods. In contrast, negative emotions such as anger, sadness, and anxiety contribute to uncontrolled emotional eating and binge eating behaviors in obese individuals (İnalkaç & Arslantaş, 2018).

For all these reasons, this study aimed to obtain more detailed information about obesity by examining the factors that are effective in the emergence of this outcome and as a result of eating behavior with a mixed research method within the framework of both positive psychology and schema therapy. Although the existing literature primarily consists of quantitative studies, there is a lack of qualitative and mixed method research on obesity in the context of Türkiye. This study aims to fill this gap by contributing to the existing literature and providing a deeper understanding of obesity. Based on this, the purpose of this research was determined is to define the relationship between schemas, schema-focused behaviors, and well-being in the context of obesity. In addition, it aims to explore the experiences of obese individuals regarding how schemas and schema-focused behaviors affect their lives.

Method

Research Design

This study was conducted using an explanatory design, one of the mixed-method research approaches combining both quantitative and qualitative methods. The quantitative phase examined the relationships between maladaptive schemas, schema behaviors, and psychological well-being in obesity using a structural equation model (SEM). The qualitative phase aimed to explore the lives, difficulties and experiences of obese individuals with obesity through focus group interviews.

Research Sample

The quantitative sample of the study consists of participants selected using a purposive sampling method. The sample includes 785 obese individuals who meet the criterion of having a Body Mass Index (BMI) of 30 or higher. This group is composed of 507 women (64.6%) and 278 men (35.4%), aged 18 to 45 years.

The qualitative phase sample was selected from individuals who scored low on the Well-Being Scale but high on the Schema Scales in the quantitative phase. A preliminary interview was conducted with 20 individuals to assess their suitability for group dynamics. Based on this, eight participants aged 29-45 were selected. All participants who were interviewed were women. Four of them were married, and the other four were single. All participants had previously attempted five or more diets and had experiences with weight loss efforts.

Data Collection Tools

Demographic Information Form

The personal information form includes participants' age, gender, height, weight, education level (undergraduate/graduate), socioeconomic status, and diet history.

Psychological Well-Being Scale (Pws)

Developed by Diener et al. (2010), the scale consists of 8 items in a 7-point Likert type scale. The Cronbach's alpha internal consistency coefficient is .87, with item factor loadings ranging between .61 and .77. The Turkish adaptation was conducted by Telef (2013), with item factor loadings ranging from .54 to .76 and a Cronbach's alpha coefficient of .80. In this study, the Cronbach's alpha internal consistency coefficient was calculated as .73.

Young Schema Questionnaire (YSQ)

Developed by Jeffrey Young (1990, 2003), the short form consists of 90 items in a 6-point Likert format. The scale covers 5 schema domains and includes 18 early maladaptive schemas. However, scoring is based on 14 subdimensions, including emotional deprivation, defectiveness, abandonment, social isolation/mistrust, enmeshment/dependence, vulnerability, failure, entitlement/insufficient self-control, emotional inhibition, pessimism, punitiveness, unrelenting standards, self-sacrifice, and approval-seeking. The Turkish adaptation was conducted by Soygüt, Karaosmanoğlu, & Çakır (2009), and the Symptom Checklist-90 was used for validity analysis. The test-retest reliability for schema domains was calculated as r = 0.66–0.83, while the internal consistency coefficient (α) ranged between .63–.80 for schema domains and .53–.81 for schema subdimensions.

In this study, the Cronbach's alpha coefficient for the total score was calculated as .74. The values of the sub-dimensions were found as follows: Social isolation/distrust .70, dependency .70, punishment .75, self-sacrifice .74, emotional deprivation .70, defectiveness .73, abandonment .76, vulnerability .68, failure .71, entitlement/insufficient self-control .70, emotional inhibition .70, pessimism .70, unrelenting standards .72 and .71 for the approval-seeking dimension.

Young-Rygh Avoidance Questionnaire (YR-AQ)

Developed by Young & Rygh (1994), the scale consists of 40 items in a 6-point Likert type. The original version includes 14 subdimensions, but the Turkish adaptation by Soygüt (2007) reduced it to 6 subdimensions (psychosomatization, social withdrawal, distraction through activity, emotional control, ignoring distress, numbness/emotional suppression). Cronbach's alpha of the full scale was found to be .77 in the original study.

In this study, the Cronbach's alpha coefficient for the total scale was calculated as .75. Based on the subscales, this value was calculated as .74 for the psychosomatism subscale, .75 for ignoring distress, .72 for emotional control, .72 for social withdrawal, .75 for distracting the mind with activity, and .71 for numbness/suppression of emotions.

Interview Question List

Qualitative data were collected through focus group interviews in order to reveal the participants' experiences regarding the phenomenon of obesity, the meaning they attribute to obesity and its effects on their lives. The focus group meetings lasted for 12 weeks, and qualitative data was obtained using an Interview Question List, which was created with open-ended questions. The question list explored schema activations, sources of schemas, how participants experienced schema triggers, coping mechanisms for maladaptive schema behaviors.

Procedure

In the first phase, quantitative data was collected from universities, hospitals, and counseling centers on a voluntary basis from individuals classified as obese (BMI $\geq$ 30). The scales were administered face-to-face. The qualitative sample was formed following the analysis of quantitative data. For this, individuals who scored low in psychological well-being but high in maladaptive schema and schema behaviors were identified. Among these participants, 20 individuals who agreed to participate voluntarily in the focus group discussions were pre-interviewed. Following this, 8 participants were selected for the focus group. To guide the focus group sessions, a "Interview Question List" was created. This list was prepared based on the opinions and suggestions of four experts. It was tested in three separate pilot studies through three different focus group meetings. After necessary adjustments were made, the final version was approved by the same experts. The final focus group discussions were conducted in a private hospital's psychology department, involving 8 participants, with each session lasting 90 minutes over 12 weeks, following a schema therapy-focused approach.

Data Analysis

In the quantitative phase of this mixed-method study, data was analyzed using SPSS 21 and MPLUS 6.12 software within the framework of Structural Equation Modeling (SEM). Before conducting SEM analysis, preliminary analyses were performed to assess sample size, missing values, outliers, normal distribution, multicollinearity. The normality of the distribution was examined with the skewness and kurtosis coefficients, and the homogeneity of the variances was examined with the Levene Test. Subsequently, relationships between variables were analyzed, and the proposed model was tested using Structural Equation Modeling (SEM). In the qualitative phase, thematic analysis was employed. During data coding, selective coding was used to assign key themes to codes

(Creswell & Clark, 2015; Creswell, 2017). After coding, expert opinions were sought to enhance the reliability of the study, and common code labels were established. The QDA Miner software was utilized for coding and analysis.

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Results

Results Related to Quantitative Data

In the quantitative phase of this mixed-method study, the relationship between schemas, schema-driven actions, and well-being in obesity was examined using Structural Equation Before SEM, as preliminary analyses, the relationships between skewness, kurtosis values and research variables were tested. As a result of the analyses, variables with skewness and kurtosis values between -2 and +2 and without multicollinearity problems were included in the study with the research variables (Büyüköztürk, 2019). Based on these analyses, the maladaptive schemas of social isolation/mistrust, enmeshment/dependence, punitiveness, and self-sacrifice, as well as schema avoidance as a schema behavior, were included in the study. Following this, the relationship between these variables and well-being was analyzed using Pearson Product-Moment Correlation Coefficients (Table 1).

Table 1

The relationship between study variables

	Schemas				
Schema Avoidance	**Social Isolation/ Mistrust**	**Enmeshment/Dependence**	**Punitiveness**	**Self-Sacrifice**	**Psyc. Well-Being**
Psychosomatism	.67**	.63**	.54**	.63**	-.29**
Ignoring Distress	.19**	.21*	.34**	.21*	- .16*
Emotional Control	.32**	.19*	.26**	.18**	-.27**
Social Withdrawal	.36**	.32**	.34**	.37**	-.21**
Distracting Mind	.54**	.57**	.42**	.57**	-.23*
Numbness	.48**	.47**	.41**	.52**	-.19*
Psy. Well-Being	-.21**	-.23**	-.24**	-.20**	1.00

*p<.05, **p<.01, ***p<.001

As seeing in the Table 1, all sub-dimensions of maladaptive schemas and schema avoidance actions are negatively significantly correlated with well-being (p<.05). In addition, a positive significant correlation was obtained between maladaptive schemas and schema avoidance actions (p<.05). After calculating the correlations, the proposed structural model for the relationship between early maladaptive schemas, schema avoidance actions and psychological well-being of obese individuals was tested (Figure 1.)

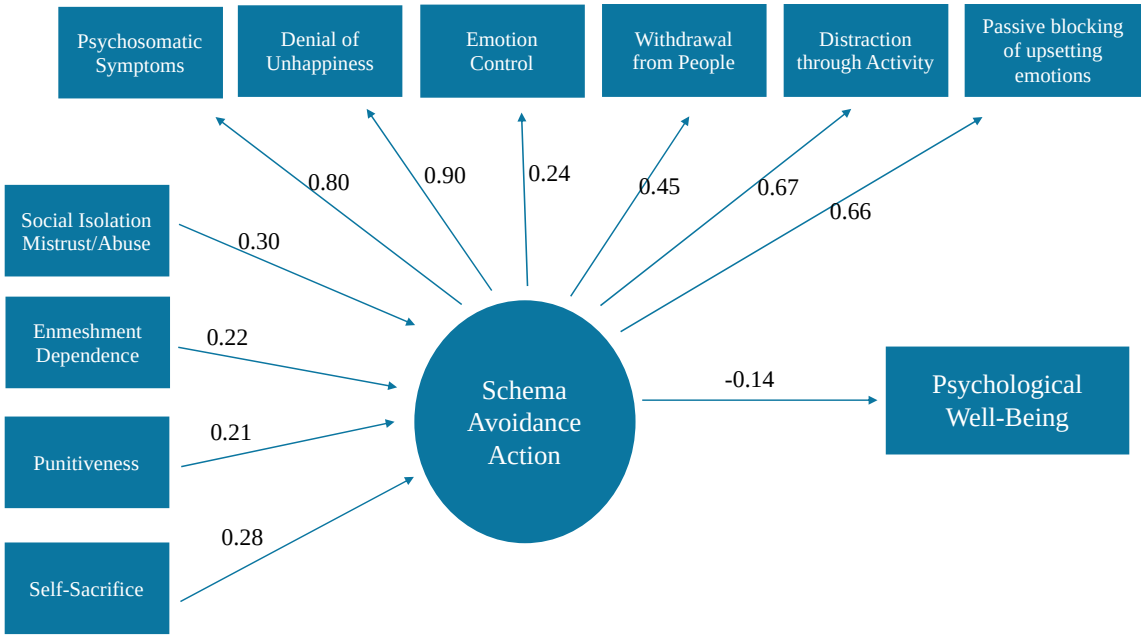

Figure 1. Path diagram of the relationship between research variables

The analyses indicate that the Chi-square value for the model (χ^2 = 142.513, SD = 38, p=.00) is statistically significant. Additionally, the fit indices suggest that the model meets the goodness-of-fit criteria (Meydan & Şeşen, 2015) with the following values: χ^2/df=3.75, RMSEA=.068, SRMR=.032, TLI=.93, CFI=.91).

When the direct and indirect effects between the variables are examined; it is seen that in obese individuals, early maladaptive schemas such as social isolation/mistrust (β=.30, p<.01), enmeshment/dependency (β=.22, p<.01), punitiveness (β=.21, p<.01) and self-sacrifice schema (β=.28, p<.01) directly predict schema avoidance action in a positive way. On the other hand, schema avoidance action predicted psychological well-being directly and negatively (β=-.14, p<.01) at a significant level. When indirect effects were examined, it was found that social isolation/mistrust (β=-.10, p<.01), enmeshment/dependency (β=-.03, p<.01), punitiveness (β=-.06, p<.01) and self-sacrifice (β-=.08, p<.01) schemas indirectly, significantly and negatively predicted psychological well-being.

Results Related to Qualitative Data

Qualitative research data was collected through the semi-structured "Interview Question List" used in the focus group discussions. Participants' responses were recorded via an audio recording system, with their consent obtained through a signed informed consent form. When presenting participants' statements, they were referred to as P1, P2… P8, along with their age, marital status, and weight information. Data obtained from the 12-session focus group discussions were analyzed using open coding and axial coding, and categorized into themes. The emerging categories, subthemes, and codes were then systematically presented. The findings are presented under the schema domains category, listing the schemas accordingly (Figure 2)

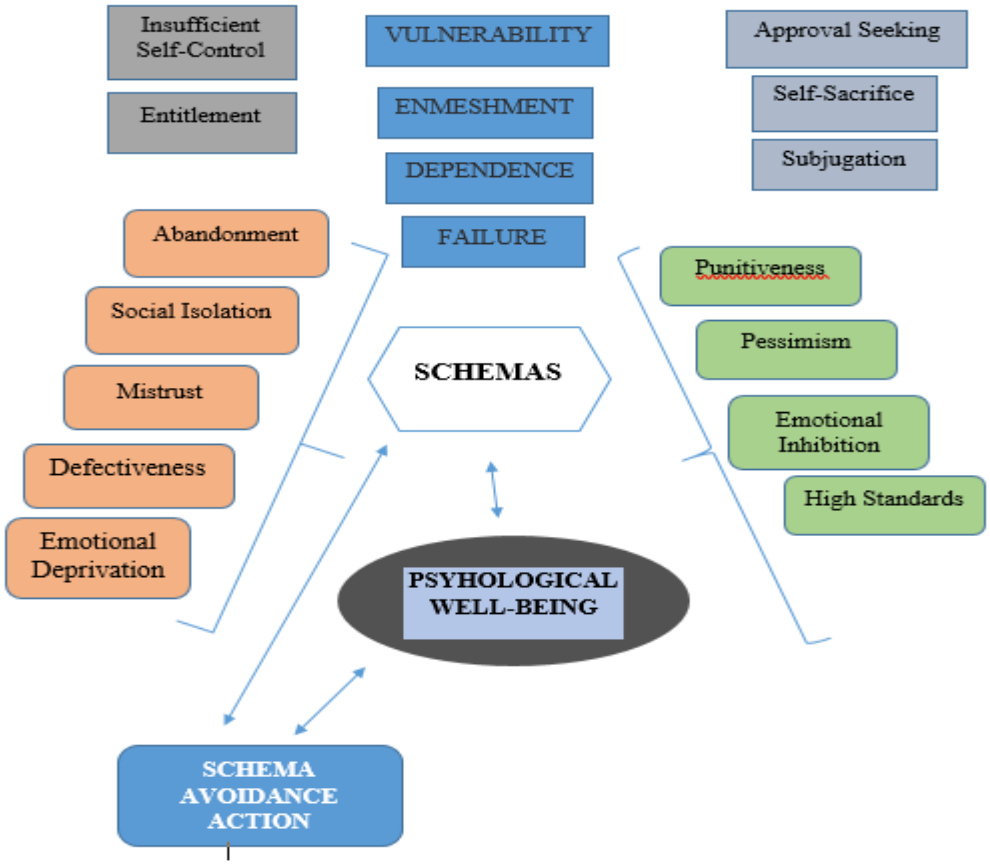

Figure 2. The relationship between psychological well-being and themes

Disconnection/Rejection Schema Domain

***Emotional Deprivation*:** The theme of emotional deprivation was coded using the following related words: lack of attention and compassion, love, happiness, warmth, friendship, understanding, care, guidance, attachment, caregiving; not being listened to, not being protected, not being understood, not feeling important, and neglect**.** In focus group discussions, the emphasis was placed on how emotional needs are met in participants' daily relationships with significant others and how schema activations occur.

The first question and following are some responses to the question: *"How do you evaluate your relationships with those who are important to you?" "Do you think your emotional needs are adequately met?"*

"I feel bored. I am unhappy in the house I live in. I do not feel important or valuable to anyone. I am starving for love. I need to be loved, to love." (P3; 29 years old, single, 124 kg)

"... I have never felt secure in my life, I have always been alone, and I always feel like I have no solid ground beneath my feet. While feeling this way, I have come to realize how sensitive I am. This sensitivity has always been because I was distant from my family..." (P1; 33 years old, married, 122 kg)

***Defectiveness*:** Since the defectiveness schema can manifest either implicitly (e.g., selfishness, unacceptable sexual desires) or explicitly (e.g., undesirable physical appearance, social clumsiness), the focus was placed on body

perception and the defectiveness schema through the question: *"How do you perceive your body? How do others perceive it, and what do they say?"*

"At work, everyone talks about my appearance and my weight. They criticize me, asking why I don't lose weight. My weight, my body—it's always their topic of discussion. I am ugly, no one would look at me." (P4; 41 years old, single, 129 kg)

"My father hates overweight people. When he saw them, he would talk behind their backs, saying things like, 'They look terrible, they have no idea how bad they look, why should I have to see the fat hanging from their bodies?' Even as a child, when I was thin, I was afraid of gaining weight because I thought my father wouldn't love me, that he would see me as flawed. Now I am actually overweight, and I can't even describe how strong my feelings of defectiveness are." (P5; 45 years old, married, 126 kg)

"I can't get rid of the anger inside me. I can't forgive my mother. She never liked overweight people. I was overweight as a child, and she would squeeze my body so hard that it hurt me. She would say, 'Nothing looks good on you, I'm ashamed of your appearance, I can't even visit the neighbors because of you.' My mother never loved me and always made me feel defective." (P3; 29 years old, single, 124 kg)

"My husband pressures me, constantly telling me to lose weight, criticizing me, or punishing me… Everyone around me does their best to make me feel defective." (P7; 32 years old, married, 132 kg)

***Social Isolation*:** The theme of social isolation was developed using related words such as belonging/not belonging, exclusion, rejection, being ignored, and being left alone. To explore the activation of the social isolation schema, participants were asked: *"How do you think your feelings of defectiveness due to being overweight affect your social relationships?"*. Some of the responses were as follows:

"I have always been overweight. I never felt thin, beautiful, flawless, or perfect. I was always the weak, defective one. I was the child left out of the group, the one no one wanted in the game, the one they made fun of behind my back. I have always felt alone..." (P2; 38 years old, single, 136 kg)

"Girls never wanted to hang out with me. I thought I would never be loved because I was overweight. My self-confidence was at rock bottom. Unless I lose weight, I can never have a romantic relationship or be loved." (P3; 29 years old, single, 124 kg)

***Mistrust / Abuse*:** The mistrust and abuse schema was categorized under themes related to being deceived, lied to, manipulated, exploited, or taken advantage of. To identify the situations that trigger this emotional state, participants were asked: *"Is it easy for you to establish closeness and trust in your relationships with others?"*. Responses reflecting their relationship patterns and mistrust schemas were recorded:

"I did something good, even though I knew exactly what would happen, and I was used again. I am extremely angry at myself... My body wants cake. I am so angry, and the best thing I can do right now is eat cake." (P3; 29 years old, single, 124 kg)

"I don't trust anyone. If I do something good, I will be used, taken for a fool. It doesn't matter whether it's a man or a woman—people are malicious. When I was a child, my mother used to tell me that neighbors could harm her, and my father had already cheated on her. Every woman I know has been cheated on. If I am both defective and overweight, there is no chance I won't be cheated on, so I avoid relationships." (P2; 38 years old, single, 136 kg)

***Abandonment*:** The abandonment schema was coded using related words such as abandonable, unwanted, unreliable, unstable, unprotected, unpredictable, and abandoned. To explore the relationship between eating behaviors and experiences of abandonment or togetherness, participants were asked: *"Is there a connection between your eating behaviors and your experiences of abandonment or being together? Can you share your experiences?".* Responses included:

"I am extremely sensitive to separations, abandonment, and relationships ending prematurely. This has always caused issues in my romantic relationships. I constantly fear being abandoned or cheated on, and I hesitate to fully engage in relationships because I believe I will never be truly loved. After deciding not to start a relationship, I always gained more weight. Now that I have no one in my life, I feel like there's no reason to lose weight. And even if I did meet someone, I feel like, at this weight, they wouldn't truly love me and would eventually leave." (P4; 41 years old, single, 129 kg)

"The fact that he left me hurts so much. Whenever I feel sad or lonely, I turn to junk food for comfort. I can't manage relationships. Before they leave me, I find something to abandon myself." (P2; 38 years old, single, 136 kg)

Impaired Autonomy and Performance Schema Domain

Enmeshment: To explore enmeshment, participants were asked: "Can you talk about your relationship with your parents?". Many responses that pointed to defectiveness and emotional deprivation schemas also revealed details related to enmeshment in relationships**.** The theme was categorized using related words such as intrusion**,** interference, clinging, distancing, allowing others to make decisions for oneself, and difficulty in individuation**.**

"I have to do things together with my mother; doing something without her makes me feel guilty. If I go on vacation, she must come with me. If I try something new, she should try it too. I can't imagine myself separate from her." (P3; 29 years old, single, 124 kg)

"My mother still interferes with what I eat, just like she did when I was a child. We are four sisters, and three of us are overweight. My mother always meddles in our lives, our food, our relationships, and even our household chores. She calls me during the day and says, "eat less'" (P5; 45 years old, married, 126 kg)

Dependence / Incompetence: Participants were asked: *"How do you feel when you don't have the support of those around you in your relationships?".* Some participants expressed thoughts consistent with the dependency schema, while others stated that they were capable of being alone and maintaining autonomy.

"This sensitivity has always been because I was distant from my family. When they are not with me, I feel like I have no shield. I feel weak… I am incompetent. I am wrong. There are people who are superior to me." (P5; 45 years old, married, 126 kg)

"I want to lose weight like others do, but I am not ready. If I go on a diet, either a friend must do it with me, or a dietitian must monitor me. I feel like I can't do it alone. I had tried it before with a friend, but when they quit, I also gave up, and I regained more weight than I had lost." (P4; 41 years old, single, 129 kg)

***Failure*:** It was observed that the participants' beliefs and perceptions regarding success and competence were observed to be interpreted through their experiences with dieting, exercise, and weight loss, focusing on outcomes. Some participants' statements are as follows:

"Dieting makes me feel like a failure. The process takes too long, and it becomes exhausting… It's really hard, and I never feel like I have the strength to succeed. I won't be able to do it; I feel truly helpless." (P8; 43 years old, married, 131 kg)

"As my mother says, I am flawed and bad! I feel tense! I am not happy with myself. Even when I diet, I feel anxious. I am unsure whether I will succeed in losing weight." (P6; 30 years old, single, 126 kg)

Impaired Limits Schema Domain

Insufficient Self-Control and Entitlement: To assess participants' self-control and regulation over their lives and decisions**,** they were asked: *"What prevents you from maintaining your diet after starting it?"*. Some of their responses were as follows:

"My life is a mess; I can't do anything consistently. I keep gaining and losing weight, but I can't control it. I procrastinate on everything. This week, I didn't go to the gym. I am alone, completely on my own. I stopped taking my medication. I can't stick to the diet." (P2; 38 years old, female, single, 136 kg)

"I am so angry at myself. Everything was going well, but two nights ago, I lost control again… I told myself, 'You won't succeed anyway,' and then I ended up eating an entire loaf of bread. I thought, 'I'm going to get fat again,' and for the past two days, I've completely given up on the diet." (P6; 30 years old, single, 126 kg)

Overvigilance & Inhibition Schema Domain

Emotional Inhibition: To explore emotional suppression, participants were asked: *"How do you express your negative emotions? What do you do when you feel angry, unsuccessful, or sad?"*

"Why do I stay silent? Because if I talk, they will see my weakness. That's why I will continue like this. Also, I don't believe I can make up for my mistakes. Maybe the indulgences I allow myself can be compensated for, but don't expect me to share more—because sharing is weakness." (P4; 41 years old, single, 129 kg)

"I am not doing well this week. I haven't been able to talk to anyone about it. I don't even know why I'm angry, but keeping my emotions inside has become a habit for me. While my emotions were eating me up, I was eating food. I feel very lonely; I can't talk to anyone. I don't want to be an unhappy and tense person." (P3; 29 years old, single, 124 kg)

Punitiveness: Participants' emotional deprivation, boundary issues, feelings of failure, and lack of self-control also revealed triggers of the punitiveness schema. Some of these were:

"In the past, dieting felt like an obligation to me. I would start dieting, then get bored and eat even more, gaining back the weight. Then I would feel bad for both eating and gaining weight, which would lead me back to eating again. It was a cycle I could never break. At work, when I felt bored or unhappy, I would turn to food to try to be happy or forget. But in the end, I would only feel more sadness and regret. It was like I was punishing myself even more." (P4; 41 years old, single, 129 kg)

Unrelenting Standards: Perfectionist statements, dichotomous thinking, and **all-or-nothing distortions** were key elements coded under this schema. Some examples were:

"At the beginning, I have to lose weight fast. Right now, I only care about my appearance. I need to get rid of my excess weight as soon as possible. If I follow my diet perfectly, I can achieve this. During this process, I absolutely must not gain any weight. If I do, I completely fall apart." (P1; 33 years old, married, 122 kg)

"Everything must always be done perfectly for me. Not just for myself, but for others as well—I feel like I have to do my best. At work, I need to complete the best projects, I must send flawless emails… I realize that I put the same kind of pressure on myself when I diet or exercise." (P8; 43 years old, married, 131 kg)

Other-Directedness Schema Domain

Self-Sacrifice: To explore self-sacrifice themes**,** participants were asked: "Are the needs and desires of others more important than your own?". Some participant responses included*:*

"I make all my decisions based on the wishes and happiness of others. At work, I can never say no to things that others refuse to do. I go along with whatever they say just to avoid upsetting them. This even applies to my body and weight. When I attend events, I eat whatever is served because I worry they will be hurt if I say no, even if it means breaking my diet. Throughout my life, I have always tried to lose weight for someone else." (P8; 43 years old, married, 131 kg)

"I am overly compassionate, and I feel guilty about everything, even the food left on my plate. I am always the one who gets hurt, the one who feels sad. No one cares about me, no one shows compassion, everyone just expects things from me." (P6; 30 years old, single, 126 kg)

***Subjugation*:** Participants frequently expressed people-pleasing tendencies, sacrificing themselves for others, and even trying to please their dietitian or meet the expectations of those around them. These behaviors indicate a subjugation schema.

"I can’t say no to people. How could I? If I say no, they won’t love me. When others get involved, I forget about myself. Their needs and wishes always come first." (P3; 29 years old, single, 124 kg)

"During my diet process, I started realizing my fear of not being able to satisfy my dietitian. If I don’t strictly follow the meal plan, if I fail, I fear that my dietitian won’t want to work with me anymore, won’t give me another

plan, and won't want to see me again. The diet lists feel like an increasing pressure on me." (P4; 41 years old, single, 129 kg)

Approval-Seeking: Participants also emphasized their need for validation and approval**.** Their discussions about the importance of losing weight and whether others' reactions during dieting mattered highlight their desire for acceptance, approval, and validation**,** which are characteristics of the approval-seeking schema. Some of the expressions were as follows:

"I believe that if I lose weight, I will be accepted. I need the approval of others. My new coworkers have no reason to reject me, but I still fear being excluded because of my weight. At least my mother doesn't increase my anxiety. As I lose weight, her criticisms and remarks decrease." (P1; 33 years old, married, 122 kg)

"I don't tell people around me that I am on a diet. If they know, it puts pressure on me… If I don't receive approval, I feel like I, and everything I do, is meaningless." (P5; 45 years old, married, 126 kg)

Schema-Driven Actions

The semi-structured interview form used in the focus group discussions aimed to explore participants' schema responses in the context of obesity and dieting. Themes were categorized as dysfunctional and functional coping modes.

Schema Avoidance Behaviors / Dysfunctional Coping Schema Modes

Participants' responses regarding their eating behaviors and emotions indicated that they use uncontrolled food consumption as an escape from negative environments and emotional stimuli. This learned behavior evolved into a coping mechanism, ultimately becoming a schema avoidance response.

"I don't want to recognize what makes me sad—just like I don't want to recognize what I'm eating. I keep gaining weight. If I lose weight, I feel like I'll lose my strength. It's as if I will become weak, passive, and inferior. This is the thought that stops me from losing weight." (P3; 29 years old, single, 124 kg)

"... The only thing that can hurt me is love… If I feel sad, I can't cope. The more I love, the more I get hurt. I am alone. The only thing that makes me forget all of this is food." (P4; 41 years old, single, 129 kg)

"I keep forgetting myself. And now I've gained weight. My husband's business is also going badly—we are practically going bankrupt. All of this feels like gray clouds over my head. When I shower, I wash without looking at my body. I only focus on my face in the mirror. I wear loose clothes, and if I don't go outside, I know others won't be disturbed by my appearance. In general, I withdraw from everything, I prefer to be alone, and I don't want to go anywhere." (P8; 43 years old, married, 131 kg)

Functional Schema Modes

During the focus group discussions, participants shared what helped them stay on track and what could support them in continuing their journey in a healthy way. These statements reflect their functional schema coping responses.

"As we discussed in the group, I started replacing my negative thoughts—caused by my schemas—with positive ones, and over time, it became automatic. My constant effort to create positive thoughts has made coping much easier. As I silence my self-critical parental mode, my self-confidence increases. This improvement is also reflected in my diet—I can say that I am eating much better now. The more I value myself and adopt a positive mindset, the less I seek attention and love from others. I just don't care as much anymore." (P7; 32 years old, married, 132 kg)

"... Instead of emotional eating, I now only eat when I'm actually hungry. With this approach, I'm not gaining weight, and I don't feel guilty. Additionally, as I receive positive feedback from my environment regarding my eating habits, I feel more motivated, and I can set boundaries for myself in terms of food." (P2; 38 years old, single, 136 kg)

Discussion, Conclusion & Suggestions

This study, which was conducted with a mixed method design, aimed to examine the relationship between obese individuals' schemas, schema actions and well-being and to discover their experiences as obese individuals and the schema actions they use to cope with obesity, based on quantitative data. In the first phase of the research, which is the quantitative phase, data was collected through scales and analyzed using structural equation modeling (SEM). The data for the qualitative phase consisted of the experiences of the participants who scored high on maladaptive schemas and schema behaviors but low on well-being scales from the quantitative stage. During this phase, a 12-week focus group interview was conducted with the participants. Data obtained through a semi-structured question list was analyzed using thematic analysis, and key themes were identified.

Discussion of Quantitative Findings

The findings from the quantitative phase of the study indicate that when participants' maladaptive schemas, such as social isolation, mistrust, enmeshment, dependence, punitiveness, and self-sacrifice, are triggered, they tend to engage in schema avoidance behaviors, including psychosomatization, social withdrawal, distraction through activities, and emotional numbness or suppression, at a moderate level. However, they were found to rely less frequently on denial of distress and emotional control as schema avoidance behaviors.

When evaluating the findings in terms of psychological well-being, both schema domains and schema avoidance behaviors were found to have a negative relationship with well-being. Structural equation modeling confirmed that schema activation predicts schema avoidance behaviors and that maladaptive schemas and schema avoidance behaviors negatively impact well-being. The analysis of direct, indirect, and total effects indicates that maladaptive schemas directly predict schema avoidance actions positively and significantly; and in line with the model, schema avoidance actions directly predict psychological well-being negatively. All these confirm that maladaptive schemas intensify avoidance behaviors, which ultimately decrease overall well-being.

Maladaptive schemas in obesity have been examined in many studies, and findings supporting our results have been obtained. Studies have shown that obesity is associated with maladaptive schemas (Luz et al., 2017); obese individuals have been found to score higher than those with normal weight on schemas related to social isolation (Meule & Gearhardt, 2014), defectiveness and failure (Anderson, Rieger, & Caterson, 2006), abandonment,

dependence, insufficient self-control, and subjugation (Basile et al., 2019), self-sacrifice (Poursharifi et al., 2011), and unrelenting standards (Brown et al., 2016).

The results of the current study suggests that maladaptive schemas negatively impact unhealthy eating behaviors and emotional well-being, leading individuals to engage in dysfunctional eating behaviors as a means of coping with negative emotions, aligns with findings in the literature (Sheffield et al., 2009). Similarly, studies examining the relationship between maladaptive schemas, psychological well-being, and pathological eating behaviors in obese individuals compared to non-obese individuals have found that non-obese individuals tend to have fewer maladaptive schemas and higher levels of well-being (Anderson et al., 2006; Mason, Flint, Field, Austin, & Edwards, 2013; Rania et al., 2019).

All these findings suggest that participants experience mistrust and have difficulty forming close relationships due to their enmeshed and boundaryless schema structures, along with dependency patterns, tendencies toward self-punishment, and self-sacrifice. Additionally, results indicate that participants struggle with a sense of belonging to groups due to their social isolation schema. To cope with this, they engage in avoidance behaviors, distancing themselves from social life and even suppressing their emotions through avoidance schema behaviors.

The quantitative results of the study explain the relationship between schemas, schema behaviors, and well-being in obesity. However, beyond the structured scale-based responses, more detailed and in-depth insights were needed into participants' lives, experiences as individuals with obesity, triggers, schemas, behaviors, and overall well-being. Therefore, the second part of the study continued with an explanatory qualitative design. This allowed for an exploration of life experiences and subjective accounts that could not be captured through quantitative measures alone, which was achieved through focus group discussions.

Discussion of Qualitative Findings

In the qualitative phase, participants were selected based on the data obtained in the quantitative phase. Participants who had more maladaptive schemas, relied more on avoidance schema behaviors, and had lower levels of well-being were included in the qualitative study group. A 12-week focus group discussion was conducted with these participants, and the data obtained were subjected to thematic analysis to identify key themes. This approach allowed for an in-depth understanding of participants' experiences with obesity, their coping mechanisms, and their well-being.

The significant relationship between social isolation and mistrust schemas and schema avoidance coping behavior in the context of obesity and well-being was also supported by qualitative data. The literature highlights that the social isolation schema, categorized under the disconnection-rejection schema domain, disrupts the development of sense of belonging. Similarly, the mistrust and abuse schema is identified as a strong and difficult-to-change schema that develops as a result of childhood abuse or traumatic experiences such as betrayal or emotional harm (Young & Klosko, 2014). These maladaptive schemas create a heightened sense of alertness and anxiety about being exploited or deceived. Sometimes, individuals with these schemas continue engaging in acts of kindness, despite knowing they may be taken advantage of, unconsciously repeating the experience of being used (Mason et

al., 2013). Individuals with these schemas have been observed to engage in behaviors such as eating, substance abuse, excessive alcohol consumption, or avoiding relationships to cope with the emotions triggered by these schemas (Rafael et al., 2013). Similarly, in our study, participants frequently expressed that their obesity and physical appearance negatively impacted their social relationships. They also reported difficulties in forming close connections and romantic relationships and expressed that their fundamental needs, such as feeling important and valued, were often left unmet.

The emotional deprivation and defectiveness schemas within the disconnection-rejection schema domain were distinctly evident in the participants' accounts of their childhood relationships with their parents. The emotional deprivation schema develops when fundamental emotional needs such as love, secure attachment, protection, and caregiving are inadequately met during childhood (Rafaeli et al., 2013; Young & Klosko, 2014). The defectiveness schema, on the other hand, prevents individuals from forming and maintaining close relationships with others (Ata et al., 2014; Young et al., 2009). During the interviews, participants expressed intense feelings of guilt and inadequacy in their relationships with their spouses and partners due to their weight and physical appearance. It was also observed that experiences of infidelity and disloyalty, which triggered the defectiveness and emotional deprivation schemas in some participants' romantic relationships, were directly linked to their obesity and physical appearance. These findings suggest that obese individuals struggle to establish emotional closeness, and even when they do, they tend to surrender to the feelings evoked by their defectiveness and emotional deprivation schemas.

The enmeshment and dependency schemas were also identified in the qualitative phase as schemas associated with obesity. These schemas, categorized within the impaired autonomy schema domain, make it almost impossible for individuals to be autonomous and independent. The enmeshment schema creates an excessive attachment to and closeness with significant others (Karaosmanoğlu, 2019; Rafaeli et al., 2013). The dependency schema leads individuals to believe they cannot manage their daily lives independently and that they require the presence, approval, and support of someone more knowledgeable, authoritative, or competent (Young & Klosko, 2014). Participants expressed difficulties in acting independently from their parents and children. Moreover, they reported that negative comments about their weights, bodies, and appearances negatively impacted their enmeshment experiences, making it difficult to separate and maintain personal boundaries. Additionally, their statements about needing someone to support them through the weight loss process highlight the role of these schemas in obesity. Future research should examine the impact of enmeshment and dependency schemas on the psychological well-being of obese individuals from societal, cultural, and personal perspectives. Addressing these factors in obesity interventions would also emphasize the importance of family and other types of social support.

The entitlement and insufficient self-control schemas frequently appeared as maladaptive schemas in the qualitative phase of the study. Although these schemas were not found to be related to well-being in the quantitative phase, they fall within the impaired limits schema domain. Individuals whose need for boundaries has not been adequately met struggle with discipline. Situations involving obligation or restriction trigger the insufficient self-control and entitlement schemas (Webb & Musello, 2019). Feelings of being restricted or being forced to comply led

participants to engage in excessive eating behaviors, and a lack of self-control prevented them from maintaining consistent efforts in weight loss.

Emotional inhibition, punitiveness, unrelenting standards, and pessimism schemas, categorized within overvigilance/inhibition schema domain, were identified as other maladaptive schemas significantly influencing obesity and well-being in the qualitative findings. The emotional inhibition schema was frequently appeared in the qualitative data. This schema inhibits individuals from expressing their emotions or instills fear that negative consequences will arise if they share their feelings. People with this schema remain emotionally detached because they fear losing control if they allow themselves to feel emotions (van Strien et al., 2013; Young et al., 2009). Participants reported that they engaged in emotional eating without recognizing their emotional fluctuations and used food as a source of reward and pleasure to suppress emotions. These findings suggest that, beyond their current weight status, childhood traumatic experiences may have contributed to the development of the emotional inhibition schema, leading participants to avoid expressing their emotions and instead engage in emotional eating behaviors.

The punitiveness schema was another prominent schema that took place in both quantitative and qualitative findings, revealing itself as an activated schema among obese individuals. This schema is characterized by hypersensitivity, anger, an inability to forgive, and intolerance toward one's or others' mistakes (Jacob, Van Genderen, & Seebauer, 2014). Participants reported engaging in self-punishing eating behaviors, using food consumption as a means of self-devaluation or self-punishment.

The unrelenting standards schema drives individuals to set high expectations for themselves and others, leading to excessive criticism and pressure while preventing them from experiencing satisfaction. This schema is often linked to rigid rules and perfectionistic tendencies (Arntz & Jacob, 2016). Although it did not statistically correlate with well-being in the quantitative analyses, it emerged as a significant maladaptive schema affecting well-being in the qualitative data. Focus group participants previously had near-perfect expectations of themselves. However, when they failed to meet their goals in long-term, performance-driven situations, they abandoned their efforts and engaged in eating behaviors that led to weight regain. This pattern highlights the strong influence of the high standards schema.

Findings from the qualitative data also identified self-sacrifice, subjugation, and approval-seeking schemas as maladaptive schemas that impact obesity and well-being. These schemas belong to the other-directedness schema domain. The self-sacrifice schema causes individuals to prioritize others' needs over their own, neglecting their well-being to ensure others' happiness and prevent their suffering (Young & Klosko, 2014). Participants frequently reported activating this schema due to concerns about offending others or causing harm. The subjugation schema leads individuals to place others' wishes above their own, driven by the need to please others. Similar to self-sacrifice schema activation, participants reported difficulties in saying no, fear of rejection or abandonment, and a tendency to relinquish control to others, leading them to engage in excessive eating. The approval-seeking schema compels individuals to strive for others' approval, often making excessive efforts to gain validation and be accepted (Rafaeli et al., 2013). This schema was linked to participants' feelings of defectiveness and inadequacy regarding their weight

and physical appearance, making them more sensitive to social approval and rejection. Moreover, participants reported that reactions to their eating behaviors triggered their approval-seeking schema activation.

In the focus group discussions, which exclusively consisted of female participants, it was observed that, contrary to the quantitative findings, participants experienced more intense maladaptive schema activation when sharing their experiences and emotions. They also reported relying more on avoidance schema coping strategies, particularly emotional eating. Unlike the quantitative findings, in interviews participants expressed deeper feelings of guilt, shame, inadequacy, defectiveness, lack of love, failure, and perceived weakness due to their experiences with being overweight. This highlights the significance of using mixed research methods to explore underlying childhood needs, maladaptive schemas, schema coping strategies, and schema modes contributing to chronic conditions like obesity.

Results from the qualitative phase also revealed maladaptive schemas that were not identified in the quantitative analyses. This suggests that obese individuals may have struggled with objectivity, schema activation, and awareness when responding to self-report measures in the quantitative phase. The findings indicate the need to reevaluate the cultural suitability and applicability of these scales for obese populations. Similarly, reassessing the suitability of quantitative scales for studying obesity could be beneficial.

This study has certain limitations. In the quantitative data phase, measurements were taken at a single time point. The use of a purposive sampling method and the large number of items in the scales made it challenging for participants to complete them. Another limitation was that all participants in the focus group discussions were women. Due to a lack of willingness and interest from male participants, the focus group discussions were limited to female participants.

In conclusion, this mixed-method study found a connection between maladaptive schemas in obesity, schema avoidance coping strategies, and psychological well-being. The findings suggest that schema –driven activation in individuals with obesity triggers avoidance coping strategies, which, in turn, negatively affect their psychological well-being. The qualitative data supported the quantitative findings while also revealing additional maladaptive schema activations that significantly influence obesity. These insights provide a deeper understanding of how schema activation, avoidance coping strategies, and psychological well-being interact in obese individuals.

Ethic

This study is in the category that does not require ethical approval

Author Contributions

The authorship contribution is equally distributed.

Conflict of Interest

The authors declare that they have no conflicts of interest.

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