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Relationship between Malnutrition, Self-Esteem, and Social Behaviour among Adolescents

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Abstract: *Adolescence is a critical stage of human development characterized by rapid physical growth, emotional changes, identity formation, and increasing social interaction. Adequate nutrition during this period is essential for healthy physical development, cognitive functioning, emotional stability, and social adjustment. Malnutrition, including undernutrition, micronutrient deficiencies, and overnutrition, may influence adolescents' self-esteem, body image, confidence, peer relationships, and social behaviour. Adolescents experiencing nutritional deficiencies may face fatigue, difficulties concentrating, and reduced participation in educational and recreational activities.*

Keywords: Malnutrition, Adolescents, Self-Esteem, Social Behaviour, Body Image, Nutritional Status, Psychological Well-Being.

I. INTRODUCTION

Adolescence, generally defined by the World Health Organization as the period between 10 and 19 years, represents a significant transition from childhood to adulthood. During this stage, individuals experience rapid physical growth, hormonal changes, cognitive development, and increasing awareness of social expectations. Nutritional requirements increase because the body requires sufficient energy, protein, vitamins, and minerals to support growth and maturation. When these nutritional needs are not adequately met, adolescents may experience undernutrition, micronutrient deficiencies, overweight, or obesity. These conditions can affect not only physical health but also psychological development and social functioning.

Malnutrition is a broad concept that includes deficiencies, imbalances, or excesses in energy and nutrient intake. Undernutrition may be reflected in thinness, stunted growth, or inadequate intake of essential nutrients, whereas overnutrition may contribute to overweight and obesity. Both forms can be associated with challenges affecting adolescents' emotional experiences and social participation. For example, inadequate nutrition may contribute to tiredness and reduced concentration, while weight-related stigma may expose adolescents to teasing, discrimination, and negative social comparisons.

Self-esteem refers to an individual's overall evaluation of personal worth, abilities, and identity. Social behaviour includes the ways individuals interact with family members, classmates, teachers, friends, and other community members. These dimensions are closely connected during adolescence because peer acceptance, physical appearance, academic performance, and social belonging often become increasingly important. Harter (2012) emphasizes the developmental complexity of self-perception during childhood and adolescence, including the influence of social relationships and perceived competence.

The relationship between nutritional status, self-esteem, and social behaviour is not necessarily direct or uniform. Adolescents with similar nutritional conditions may experience different psychological outcomes depending on their family support, cultural environment, access to resources, and personal coping skills. Consequently, understanding these relationships requires an integrated perspective that considers biological, psychological, and social factors rather than treating malnutrition as an isolated physical condition.

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MALNUTRITION AND ADOLESCENT PSYCHOLOGICAL DEVELOPMENT

Malnutrition can affect adolescent development through several interconnected biological and environmental pathways. Adequate nutrition supports brain development, energy regulation, physical growth, and the physiological processes involved in learning and emotional regulation. Insufficient intake of essential nutrients may contribute to fatigue, reduced attention, irritability, and difficulties participating in daily activities. These experiences can influence adolescents' perceptions of their abilities and their willingness to engage in social situations. Nevertheless, nutritional deficiencies do not inevitably produce psychological problems, and the strength of these associations varies across individuals and circumstances.

Querol et al. (2022), in a scoping review of adolescent undernutrition in South Asia, highlighted the importance of understanding undernutrition in relation to regional dietary practices, socioeconomic inequalities, and adolescent health needs.

Food insecurity may also create persistent stress because adolescents may worry about food availability, depend on inadequate meals, or experience embarrassment when their household cannot afford food comparable to that consumed by their peers. Such circumstances can influence participation in school activities and social gatherings.

Overnutrition may create a different set of psychological challenges. Adolescents with overweight or obesity can experience dissatisfaction with physical appearance, negative body image, or discrimination based on body size. These experiences may weaken confidence, particularly in environments where appearance is strongly associated with popularity or social acceptance. However, it is important to distinguish the physiological consequences of nutritional status from the social consequences of weight stigma. An adolescent's body size alone does not determine psychological well-being; peer attitudes, family relationships, media representations, and cultural expectations can substantially influence outcomes.

A systematic review by Mullan et al. (2023) found associations among peer victimization, low self-esteem, and internalizing symptoms in adolescents. Their meta-analysis included 16 studies involving 35,032 participants, indicating that negative peer experiences and self-esteem are closely connected to psychological difficulties.

Although this evidence does not establish that malnutrition directly causes low self-esteem, it helps explain how weight-related teasing and social exclusion may contribute to adverse psychological experiences among some adolescents.

RELATIONSHIP BETWEEN MALNUTRITION AND SELF-ESTEEM

Self-esteem develops through an interaction of personal experiences, family relationships, academic achievements, physical self-perception, and social acceptance. During adolescence, individuals become increasingly conscious of their appearance and compare themselves with peers and media representations. Nutritional status may influence this process indirectly through physical development, perceived appearance, energy levels, participation in activities, and the reactions of others.

Adolescents experiencing undernutrition may feel different from their peers because of visible thinness, delayed physical development, reduced stamina, or comments about their appearance. In some settings, these differences may lead to embarrassment or diminished confidence. Other adolescents may receive strong family support and maintain positive self-esteem despite nutritional challenges. Therefore, undernutrition should not automatically be interpreted as evidence of poor psychological adjustment.

Among adolescents with overweight or obesity, dissatisfaction with body image can be particularly important when social environments promote narrow standards of attractiveness. Teasing, exclusion from sports, negative comments from classmates, and stigmatizing messages can undermine confidence and contribute to social anxiety. Day et al. (2022) reviewed evidence concerning teasing and bullying victimization in relation to disordered eating and body-image disturbance among adolescents, emphasizing the importance of considering interpersonal experiences when examining eating-related and psychological outcomes.

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Evidence concerning obesity and self-esteem is not entirely uniform. Murray et al. (2017) reviewed multicomponent weight-management interventions and self-esteem among adolescents with overweight and obesity, demonstrating the relevance of psychological outcomes alongside physical health measures.

Interventions should therefore focus on health, self-acceptance, supportive relationships, and sustainable habits rather than suggesting that body weight determines an individual's worth.

Self-esteem can also influence nutritional behaviour. Adolescents who feel confident and supported may be more willing to seek nutritional advice, participate in physical activity, discuss body-image concerns, and develop regular eating habits. Conversely, low self-esteem may accompany restrictive eating, emotional eating, or avoidance of group meals in some individuals. These relationships can be reciprocal, meaning that nutritional experiences may influence self-esteem while psychological experiences may also influence eating patterns.

RELATIONSHIP BETWEEN MALNUTRITION AND SOCIAL BEHAVIOUR

Social behaviour includes communication, cooperation, empathy, participation in group activities, conflict resolution, and the ability to develop and maintain relationships. Adolescence is an important period for acquiring these skills because peer groups become increasingly influential and young people gain greater independence from their families. Nutritional status may affect social behaviour through physical energy, emotional well-being, cognitive functioning, body image, and the responses of others.

Undernourished adolescents may experience tiredness or reduced stamina, potentially limiting participation in sports, extracurricular activities, and other social opportunities. Where nutritional deficiencies affect concentration or educational engagement, difficulties in school may also influence peer relationships and feelings of belonging. A systematic review published in BMJ Global Health found moderate evidence linking childhood malnutrition with impaired cognitive development, academic achievement, and behavioural difficulties, although the evidence regarding specific mental-health outcomes remained inconclusive. The review also noted that socioeconomic conditions and other confounding factors limit causal interpretation.

Adolescents experiencing overweight or obesity may face different social barriers. Weight-based bullying, exclusion from activities, and stereotypical assumptions about appearance can discourage participation and contribute to loneliness or withdrawal. Such responses reflect the social environment rather than an inherent behavioural characteristic of adolescents with obesity. Supportive classmates, inclusive sports opportunities, and respectful teacher attitudes may reduce these barriers.

Social media may further complicate the relationship between nutrition, body image, and behaviour. Online platforms can provide nutritional information, supportive communities, and opportunities for positive interaction. However, exposure to unrealistic appearance ideals, appearance-focused comparisons, and misleading dietary advice may contribute to dissatisfaction or unhealthy eating practices. Blanchard et al., (2023), in a systematic review, examined associations among social media use, adolescent mental health, and diet, highlighting the importance of considering these domains together.

Importantly, social behaviour should not be judged solely by the presence of withdrawal, irritability, or reduced participation. Such behaviours can arise from many circumstances, including family stress, bullying, financial hardship, sleep difficulties, or emotional distress. Nutritional assessment should therefore be combined with an understanding of the adolescent's broader living and social conditions.

REVIEW OF LITERATURE AND SUMMARY OF MAJOR FINDINGS

The available literature suggests that the relationship between malnutrition, self-esteem, and social behaviour is multidimensional. Studies examining childhood malnutrition provide useful evidence about cognitive and behavioural development, while adolescent-focused research provides more direct insights into body image, peer victimization, and self-esteem. However, these two evidence groups should not be treated as interchangeable because developmental stages, measurement approaches, and nutritional conditions differ.

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The following table summarizes selected literature relevant to the present review.

Table 1. Summary of Selected Studies on Malnutrition, Self-Esteem, and Social Behaviour Among Adolescents

Author(s) and year	Research focus	Major findings	Relevance to the present review
Querol et al., (2022)	Adolescent undernutrition in South Asia	Identified important nutritional challenges and regional research needs.	Establishes the nutritional context for adolescents.
Murray et al., (2017)	Weight-management interventions and self-esteem	Examined self-esteem as an important psychological outcome of interventions for adolescents with overweight or obesity.	Supports the inclusion of psychological well-being in nutritional interventions.
Day et al., (2022)	Teasing, bullying, eating behaviour, and body image	Reviewed evidence connecting victimization with disordered eating and body-image disturbance.	Explains a potential social pathway linking weight stigma and self-perception.
Mullan et al., (2023)	Peer victimization and self-esteem	Found associations between peer victimization, low self-esteem, and internalizing symptoms.	Highlights the importance of peer relationships in adolescent psychological health.
Blanchard et al., (2023)	Social media, diet, and adolescent mental health	Examined links between online experiences, dietary outcomes, body image, and mental health.	Identifies social media as a relevant environmental influence.
BMJ Global Health systematic review (2022)	Childhood malnutrition and developmental outcomes	Reported evidence of cognitive, academic, and behavioural difficulties, with inconclusive findings for some mental-health outcomes.	Provides broader developmental evidence while highlighting uncertainty.

Source: Prepared by the author from the selected literature cited in this review.

The literature indicates several important patterns. First, nutritional status should be considered alongside psychological and social circumstances rather than as an independent predictor of self-esteem. Second, body dissatisfaction and weight-related victimization may be particularly relevant when examining social participation among adolescents with overweight or obesity. Third, evidence linking early malnutrition to behavioural difficulties supports the need for early nutritional care, although causal relationships and specific psychological outcomes require further investigation. Finally, many studies examine only one or two of the three central variables, leaving a need for research that assesses nutritional status, self-esteem, and social behaviour simultaneously.

A further research gap concerns differences between undernutrition and overnutrition. These conditions may involve different biological mechanisms and social experiences, yet both can be associated with challenges affecting adolescent well-being. Future research should distinguish between them instead of treating malnutrition as a single, uniform condition.

II. CONCLUSION

The relationship between malnutrition, self-esteem, and social behaviour can be understood through a biopsychosocial framework. Nutritional status may affect physical growth, energy, and cognitive functioning; these factors may influence school participation and interpersonal experiences. At the same time, social acceptance, body image, family support, and psychological well-being can affect eating patterns and health-related decisions. This suggests that the relationship may operate in both directions.

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