

A Review on Nutritional Status of School-Going Girls Belonging to the Low-Income Group

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Abstract

Background: Nutritional status during adolescence is an important determinant of physical growth, cognitive development, and future health. School-going girls from low-income families may be particularly vulnerable to undernutrition due to inadequate dietary intake, poor food quality, and socioeconomic constraints. **Objectives:** To review the nutritional status of school-going girls belonging to the low-income group and to identify selected factors associated with their nutritional status. **Methodology:** This review article followed a structured literature search methodology to identify, evaluate, and synthesize existing research regarding the nutritional status, dietary habits, and associated socioeconomic factors among school-going adolescent girls. The search strategy utilized combinations of medical subject headings (MeSH) and text keywords using Boolean operators: ("nutritional status" OR "dietary habits" OR "body mass index" OR "BMI") AND ("school-going adolescent girls" OR "female adolescents") AND ("dietary patterns" OR "meal patterns" OR "socioeconomic factors"). **Inclusion Criteria:** Peer-reviewed original research articles, descriptive cross-sectional studies, and population-based surveys focusing on school-going female adolescents (aged 12–18 years); studies explicitly reporting anthropometric measurements (height, weight, BMI) and dietary assessments; articles published in English. **Exclusion Criteria:** Case reports, editorials, conference abstracts lacking complete data, qualitative studies without quantitative nutritional or anthropometric metrics, and papers focusing exclusively on clinical patient populations or male cohorts. **Conclusion:** The study revealed that a regular nutritional assessment, nutrition education, promotion of balanced diets, and strengthening of school-based nutritional programmes are recommended to improve the health and nutritional well-being of adolescent girls.

Keywords: Nutritional status, Low-income group; Undernutrition, Body Mass Index, Dietary habits; Nutrition education.

1. Introduction

Malnutrition among children and adolescents remains a persistent public health challenge in developing nations, with profound implications for human capital development (Srivastava et al., 2012). School-going age represents a critical window of rapid physical growth, cognitive development, and physiological transition. Ensuring optimal nutritional status during this period is essential not only for immediate health and academic performance but also for breaking long-term intergenerational cycles of poverty and disease (Chauhan et al., 2021). However, millions of children in resource-constrained settings fail to achieve their complete growth potential due to chronic nutritional deprivations.

Within low-income strata, vulnerability to malnutrition is unevenly distributed, with school-going girls facing compounded risks. Socio-economic disadvantages—such as low household per capita income, poor housing, and inadequate environmental sanitation—interact heavily with cultural practices and gender-based intra-household food distribution biases (Sinha & Singh, 2017). In many low-income households, female children frequently receive lower priority regarding the quantity and quality of dietary intake compared to their male counterparts. This disparity is further aggravated during early adolescence, when the onset of menstruation increases iron and micronutrient requirements, setting the stage for chronic nutritional deficits such as stunting, wasting, thinness, and severe anemia (Verma & Sonkar, 2013).

Geographically, India bears a disproportionately high burden of childhood and adolescent undernutrition. In urban slums and peripheral rural areas surrounding urban centers, rapid and unplanned urbanization combined with endemic poverty creates acute nutritional vulnerabilities (Chauhan et al., 2021). Regional investigations evaluating the nutritional profile of school-going adolescent girls in the Lucknow district have frequently documented high prevalence of anthropometric deficits, including underweight and chronic stunting, alongside widespread micronutrient deficiencies (Verma & Sonkar, 2013). Furthermore, local epidemiological studies indicate that a significant proportion of adolescent girls in Lucknow suffer from inadequate baseline dietary diversity, often consuming cereal-heavy diets lacking essential micronutrients (Sachan et al., 2013).

Despite various government initiatives such as the Mid-Day Meal (MDM) scheme and iron-folic acid supplementation programs, the localized prevalence of malnutrition among low-income schoolgirls remains alarming. Comprehensive data synthesis is essential to capture the localized determinants of this crisis. Therefore, this descriptive review aims to assess the existing literature on the nutritional status of school-going girls belonging to low-income groups in Lucknow, Uttar Pradesh, highlighting major anthropometric failures, underlying socio-demographic risk factors, and pathways for targeted public health interventions.

2. Major Findings from Existing Literature

Anthropometric Deficits and under nutrition- Studies investigating school-going children and adolescent girls in low-income settings consistently reveal a high prevalence of anthropometric failures. Assessments utilizing standard growth references frequently show that a significant portion of girls from lower socioeconomic strata suffer from chronic and acute forms of under nutrition (Verma et al., 2014).

Stunting (Height-for-Age): Reflecting chronic, long-term nutritional deprivation, stunting rates among low-income schoolgirls in Lucknow range significantly, with local studies documenting elevated figures often exceeding 35% to 50% depending on the specific slum or peripheral rural pockets surveyed (Chauhan et al., 2021).

Thinness and Underweight (BMI-for-Age / Weight-for-Age): Research focusing on government-aided and municipal school populations in Lucknow highlights that roughly one-third to over 40% of female students register low body mass index (BMI) values, underscoring persistent acute energy deficits (Sinha & Singh, 2017).

Micronutrient Deficiencies and Anemia- Beyond physical growth parameters, micronutrient malnutrition remains an overwhelming public health crisis for this demographic across North Indian urban pockets (Saibaba et al., 2002).

Iron Deficiency Anemia: Local epidemiological data from the Lucknow district underscore an alarmingly high burden of anemia among school-going adolescent girls (Sachan et al., 2012). This vulnerability spikes sharply post-menarche due to blood loss and uncompensated iron intake (Yadav et al., 2025).

Dietary Deficiencies: Quantitative dietary surveys indicate that the daily food intake of girls belonging to low-income Lucknow households falls considerably short of recommended dietary allowances (RDAs) for key nutrients, including total calories, proteins, iron, and calcium (Sachan et al., 2013). Diets are predominantly cereal-heavy, lacking adequate diversification such as green leafy vegetables, seasonal fruits, and animal-source proteins (Sinha & Singh, 2017).

3. Determinants and Risk Factors

Socio-Economic Status (SES) and Household Income- Family income serves as one of the strongest predictors of nutritional health. In urban slum settlements and peripheral rural zones of Lucknow, a vast majority of low-income families live below or near the poverty line (Chauhan et al., 2021). Restricted purchasing power directly restricts household food security, forcing families to compromise on the quality and diversity of daily meals. Poor housing conditions, overcrowding, and lack of safe drinking water further expose these children to frequent waterborne and infectious illnesses, which synergistically worsen nutrient absorption and utilization (Srivastava et al., 2012).

Maternal Education and Literacy- The educational attainment of mothers has a direct, well-documented bearing on the nutritional status of school-going girls. Lower levels of maternal literacy frequently correlate with reduced awareness regarding balanced nutrition, dietary management during adolescence, and proper personal hygiene practices (Saibaba et al., 2002). Conversely, studies indicate that higher maternal education positively influences domestic food allocation and health-seeking behaviors.

Cultural Norms and Intra-Household Dietary Practices- Deeply entrenched socio-cultural practices and gender biases within low-income households often result in discriminatory food distribution. Female children frequently receive lower priority regarding optimal food portions, choice cuts, or nutrient-dense supplements compared to male siblings (Verma & Sonkar, 2013). Furthermore, shifting dietary transitions toward cheap, energy-dense, but nutrient-poor processed foods—coupled with skipped meals—further aggravate micronutrient gaps among school-going girls in Lucknow (Sinha & Singh, 2017).

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