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PREVALENCE OF MALNUTRITION IN ADOLESCENT GIRLS CAUSE AND PREVENTION IN UP

***Pawan Prakash**

India.

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***Corresponding Author: Pawan Prakash**

India.

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ABSTRACT

Malnutrition among adolescent girls in Uttar Pradesh (UP) represents a significant public health challenge with far-reaching consequences. This critical age group (10–18 years) undergoes rapid physical and cognitive development, and inadequate nutrition during this period can lead to stunted growth, weakened immunity, poor academic performance, early pregnancy complications, and long-term health issues. The present study explores the prevalence, underlying causes, and preventive strategies related to malnutrition among adolescent girls in both rural and urban regions of UP.

Secondary data from the National Family Health Survey (NFHS-5) reveals that approximately 43.5% of adolescent girls in UP are anemic, and over 30% suffer from under nutrition, including stunting and being underweight. The burden is more pronounced in economically disadvantaged and socially marginalized communities. Root causes include poverty, food insecurity, gender-based discrimination, poor dietary habits, early marriage and pregnancy, lack of access to adolescent health services, and low awareness regarding nutritional needs.

The government initiatives such as the Rashtriya Kishor Swasthya Karyakram (RKSK), Weekly Iron and Folic Acid Supplementation (WIFS), mid-day meal schemes, and the role of Adolescent-Friendly Health Clinics (AFHCs). Despite existing programs, gaps in implementation, limited outreach, and cultural barriers reduce their effectiveness.

The study concludes that a comprehensive, multi-sectoral approach is essential for addressing adolescent malnutrition. This includes strengthening nutrition education in schools, empowering girls through awareness and community participation, enhancing food and health security, and ensuring convergence among health, education, and nutrition sectors.

Focused efforts in UP can improve adolescent well-being and contribute significantly to breaking the intergenerational cycle of malnutrition.

INTRODUCTION

Adolescence is a critical phase of human development characterized by rapid physical growth, hormonal changes, and increased nutritional demands. For adolescent girls, this stage is especially significant as it lays the foundation for their future health, reproductive outcomes, and socio-economic productivity. In India, and particularly in states like Uttar Pradesh (UP), malnutrition among adolescent girls remains a persistent and alarming public health concern.

Uttar Pradesh, being the most populous state in India, faces significant health and nutrition challenges. According to the National Family Health Survey (NFHS-5), a large proportion of adolescent girls in UP suffer from nutritional deficiencies, with over 43% reported as anemic and more than 30% classified as undernourished. These figures are indicative of the widespread prevalence of malnutrition and its potentially devastating impacts on both individual and societal well-being.

Multiple factors contribute to this crisis, including poverty, gender inequality, inadequate dietary intake, early marriage, poor access to health services, and low levels of education and awareness among girls and their families. In many communities, cultural practices and social norms further limit girls' access to nutritious food and health care, exacerbating the problem.

Malnutrition during adolescence not only affects the immediate health and development of girls but also leads to long-term consequences such as low birth weight in future children, increased maternal mortality, and a cycle of poor health and poverty. Therefore, addressing adolescent malnutrition is essential for improving maternal and child health indicators, achieving gender equality, and meeting the Sustainable Development Goals (SDGs).

the prevalence of malnutrition among adolescent girls in Uttar Pradesh, analyze the underlying causes, and recommend practical, evidence-based strategies for its prevention. By identifying the gaps in existing programs and proposing targeted interventions, the paper aims to contribute to the development of effective policies and community-level actions to combat malnutrition in this vulnerable group.

OBJECTIVES

- To assess the prevalence of malnutrition—including undernutrition (stunting, thinness), micronutrient deficiencies, and overnutrition—among adolescent girls, particularly in low- and middle-income settings.
- To identify and analyze the key causes of malnutrition among adolescent girls, including socioeconomic, biological, environmental, cultural, and behavioral factors.
- To examine the role of gender inequality, early marriage, adolescent pregnancy, and limited access to education and healthcare in contributing to poor nutritional outcomes in adolescent girls.
- To evaluate existing public health programs and policies targeting adolescent nutrition in the Uttar Pradesh.
- To explore evidence-based prevention strategies and interventions such as school feeding programs, dietary diversification, micronutrient supplementation, and WASH improvements in Uttar Pradesh
- To propose actionable recommendations for policymakers, healthcare providers, educators, and community leaders to address malnutrition in adolescent girls effectively in the state.

METHODOLOGY

1. Study Design

- A cross-sectional and observational study using quantitative and qualitative approaches.
- Focuses on understanding the nutritional status and associated factors among adolescent girls aged 10–18 years.

2. Study Area

- The study focuses on selected rural and urban districts of Uttar Pradesh that represent varying socio-economic and health profiles. These may include districts like:
  - Varanasi (urban-rural mix),
  - Banda (backward, high malnutrition),
  - Sitapur (semi-urban),
  - Lucknow (urban comparison).

3. Study Population

- Target Group: Adolescent girls aged 10–18 years.

- Includes both school-going and out-of-school girls to cover a broad spectrum of adolescents.

4. Data Sources

- **Secondary Data**
  - National Family Health Survey (NFHS-4 & NFHS-5)
  - District-Level Household Survey (DLHS)
  - Government reports from the Ministry of Health and Family Welfare, UP
  - UNICEF and WHO reports
  - Rashtriya Kishor Swasthya Karyakram (RKSK) program data
- **Primary Data (if applicable)**
  - Field surveys conducted in selected districts (if feasible)
  - Semi-structured interviews with local health workers, anganwadi workers, teachers, and mothers of adolescent girls

5. Sampling Technique (for primary data)

- **Purposive sampling** of districts and respondents for qualitative interviews
- If a survey is conducted, a **stratified random sampling** method may be used to select a representative sample of adolescent girls from schools and communities

6. Tools and Techniques for Data Collection

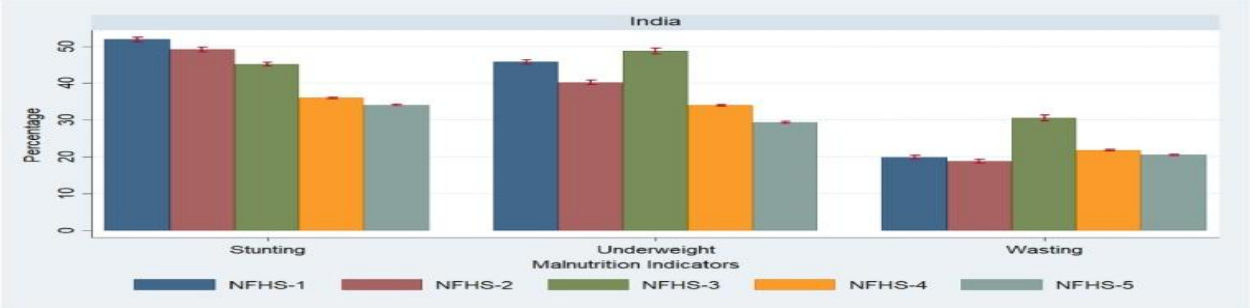
- **Questionnaire**: Structured questionnaires focusing on dietary habits, health practices, socio-economic status, access to health services, etc.
- **Anthropometric Measurements:** If primary data is collected – includes height, weight, and BMI calculation
- **Hemoglobin Level Data:** Sourced from government reports or school health records.
- **Focus Group Discussions (FGDs):** Conducted with adolescent girls and caregivers to understand perceptions, beliefs, and barriers to good nutrition

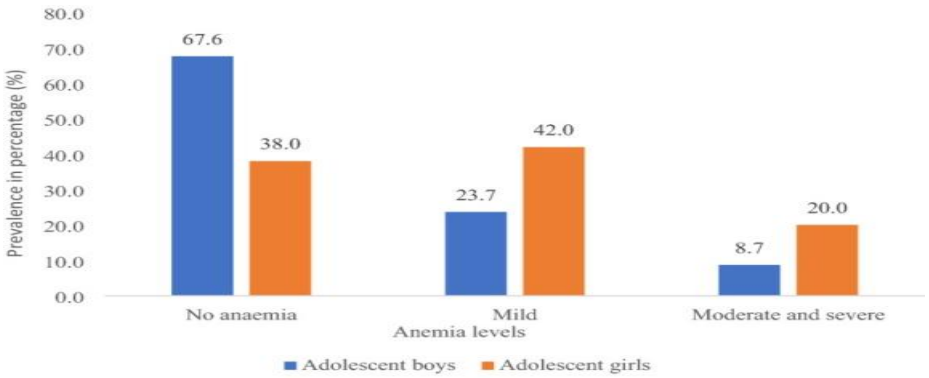
7. Data Analysis

- **Quantitative Data:** Analyzed using Microsoft Excel/SPSS for descriptive statistics (mean, percentage, frequency) to determine prevalence rates.
- **Qualitative Data**: Thematic analysis of interview and FGD transcripts to extract common themes and insights related to causes and prevention.

FINDINGS / RESULTS

Prevalence





- Nutritional Status Indicators:
- Indicator Prevalence in UP (NFHS-5)
- Anemia (Adolescent Girls 15–19) -43.5%
- Underweight (BMI < normal) -~30%
- Stunting (Height-for-age) -~28%
- Thinness (Low BMI-for-age) -~22%
- Overweight/Obese 5–6% (urban areas mainly)

Common Patterns

- **Age and Area-Wise Variation:**

▪ Younger adolescents (10–14) showed higher rates of stunting, indicating chronic undernutrition from early childhood.

▪ Older adolescents (15–19) showed higher anemia prevalence, possibly linked to menstruation and poor iron intake.

▪ Rural areas reported significantly higher rates of underweight and anemia compared to urban counter parts.

- **Socio-Economic and Regional Patterns:**

Malnutrition is more prevalent among:

- Girls from Scheduled Castes (SC), Scheduled Tribes (ST), and OBC groups.
- Families with low monthly income and low maternal education levels.
- Backward districts such as Banda, Shravasti, Balrampur, and Sonbhadra.

DISCUSSION

Major Causes of Malnutrition

1.Poverty and Food Insecurity

- Inability to afford diverse and nutritious food.
- Low household income associated with higher malnutrition rates.

2. Inadequate Dietary Intake

- Reliance on cereal-based diets with low protein and micronutrients.
- Poor dietary diversity is a key risk factor.

3. Gender Disparities

- Cultural norms leading to preferential feeding of boys.
- Girls often skip meals during menstruation due to taboos.

4. Early Marriage and Pregnancy

- Increases nutritional demands and worsens undernutrition.

5. Poor Water, Sanitation, and Hygiene (WASH)

- Frequent infections like diarrhea impair nutrient absorption.

6. Lack of Nutrition Education

- Limited awareness of balanced diets and food choices.

Prevention Strategies

1. School-Based Nutrition Programs

- Mid-Day Meal Schemes and iron-folic acid supplementation improve health and attendance.

2. Nutrition Education

- Promote awareness about dietary diversity, anemia prevention, menstrual hygiene.

3. Empowering Girls Through Education

- Delay early marriage and promote informed food choices.

4. Water, Sanitation, and Hygiene (WASH)

- Provide safe drinking water and hygiene infrastructure to reduce disease.

5. Micronutrient Supplementation

- Provide iron, vitamin A, calcium, and folic acid to adolescent girls through health programs.

6. Community Engagement

- Involve families and communities to support girls' nutrition and health rights.

CONCLUSION

Malnutrition among adolescent girls in Uttar Pradesh continues to be a major public health concern, with high rates of anemia, underweight, and stunting indicating both chronic and acute nutritional deficiencies. The findings reveal that nearly half of the adolescent girls in the state are anemic, and a significant proportion suffer from undernutrition. These conditions are driven by a complex interplay of factors, including poverty, food insecurity, gender inequality, poor dietary practices, early marriage, and limited access to quality health services.

Despite the existence of government programs such as the Rashtriya Kishor Swasthya Karyakram (RKSK), Weekly Iron and Folic Acid Supplementation (WIFS), and the Mid-Day Meal Scheme, the impact remains limited due to poor implementation, lack of awareness, and socio-cultural barriers. Malnutrition in adolescence not only affects immediate health outcomes but also compromises girls' future reproductive health, educational attainment, and economic potential.

To effectively combat malnutrition among adolescent girls in UP, a multi-sectoral and community-based approach is essential. This includes strengthening existing nutrition and health programs, promoting adolescent-friendly health services, incorporating nutrition education in schools, addressing gender disparities, and ensuring the active involvement of families and communities.

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