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RESEARCH ARTICLE

A DESCRIPTIVE STUDY TO ASSESS THE RISK FACTORS AND PROBLEMS WITH ASSOCIATED WITH PRECOCIOUSUS PUBERTY AMONG ADULASENT GIRLS

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ABSTRACT

A descriptive study to assess the risk factors and problems associated with precocious puberty among adolescent girls in selected schools at Kanyakumari district. **Aim:** The aim of the study was to assess the level of risk factors and physical, psychological, and social problems associated with precocious puberty among adolescent girls. **Materials and Methods:** A non-experimental descriptive research design was adopted for the study. The sample size was 60 adolescent girls who experienced early onset of pubertal changes (before 8 years of age), selected using a simple random sampling method. A structured questionnaire was used to assess demographic variables, clinical variables, risk factors (environmental, dietary, genetic, and lifestyle factors), and a Likert scale was used to measure associated problems (physical, emotional/psychological, and social). Descriptive statistics (mean, standard deviation, frequency, and percentage) and inferential statistics (Chi-square test) were used for data analysis. **Results:** The findings revealed that out of 60 adolescent girls, 38 (63.33%) had a high level of risk factors, 18 (30%) had a moderate level, and 4 (6.67%) had a low level of risk factors. Regarding problems associated with precocious puberty, 42 (70%) experienced severe psychological and social stress, while 18 (30%) experienced moderate problems. The mean score for risk factors was 42.5 with a standard deviation of 8.4, and the mean score for associated problems was 56.8 with a standard deviation of 9.2. A significant association was found between the level of risk factors/problems and selected demographic variables such as BMI ($\chi 2=8.12$, $p\leq 0.05$) and dietary habits ($\chi 2=7.45$, $p\leq 0.05$). **Conclusion:** The study concluded that high BMI, junk food consumption, and endocrine-disrupting chemicals significantly contribute to precocious puberty, leading to notable psychological and social difficulties among adolescent girls.

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INTRODUCTION

Precocious puberty is defined as the manifestation of physical signs of sexual maturity before the age of 8 in girls. It leads to early development of secondary sexual characteristics such as breast development (thelarche), pubic hair growth (pubarche), and early menarche. Early pubertal maturation can negatively impact physical growth, leading to premature epiphyseal closure and short adult stature (Paul *et al*., 2024). In recent years, the global incidence of precocious puberty has shown an upward trend. Factors such as childhood obesity, altered dietary patterns (increased consumption of high-calorie and processed foods containing phytoestrogens), exposure to environmental endocrine-disrupting chemicals (EDCs), high stress levels, and genetic predisposition are strongly associated with early pubertal onset. Adolescents experiencing precocious puberty often face psychological distress, body image issues, early emotional disturbance, and social anxiety due to physical differences from their peers (WHO2024).

NEED FOR THE STUDY

Precocious puberty poses both physical health risks and emotional challenges. Studies indicate that childhood obesity is one of the strongest contributors to central precocious puberty due to elevated leptin levels stimulating the hypothalamic-pituitary-gonadal (HPG) axis. Furthermore, early maturation creates a mismatch between physical appearance and emotional/cognitive maturity, increasing vulnerability to stress, low self-esteem, peer pressure, and depression (Khadgwat *et al*., 2024**).** During school health clinical postings, the investigator observed an increasing number of young adolescent girls exhibiting signs of early pubertal development and experiencing distress due to lack of awareness and emotional support. Therefore, the researcher felt the need to conduct a descriptive study to evaluate the risk factors and associated problems among adolescent girls in order to raise awareness and promote early guidance.

OBJECTIVES

To assess the risk factors associated with precocious puberty among adolescent girls. To assess the problems (physical, psychological, and social) associated with precocious puberty among adolescent girls. To find out the association between the selected demographic and clinical variables of adolescent girls with their levels of risk factors and associated problems.

METHODOLOGY

Research Approach: Quantitative research approach.

Research Design: Descriptive research design.

Research Setting: Selected government and private schools in Kanyakumari district, Tamil Nadu.

Target Population: Adolescent girls aged 9–14 years who experienced onset of pubertal characteristics before 8 years of age.

Sample Size: 60 adolescent girls.

Sampling Technique: Simple random sampling technique (Lottery method).

Description of the Tool

Section A (Demographic & Clinical Variables): Age, education, body mass index (BMI), dietary pattern, family history of early puberty, physical activity level, and exposure to plastics/packaged foods.

Section B (Structured Risk Factor Assessment Questionnaire): Assesses genetic, environmental, dietary, and lifestyle risk factors.

Section C (Problem Assessment Scale): A 4-point Likert scale to assess physical (short stature, body pain), psychological (anxiety, body image issues), and social problems (peer isolation, embarrassment).

RESULTS AND DISCUSSION

Demographic and Clinical Distribution

Age & BMI: 34 (56.67%) participants belonged to the age group of 10–12 years. Regarding BMI, 28 (46.67%) were overweight/obese.

Dietary Pattern: 38 (63.33%) consumed high-calorie/junk food frequently, and non-vegetarians constituted 41 (68.33%) of the sample.

Family History: 19 (31.67%) reported a positive family history of early puberty.

Table 1. Distribution of Levels of Risk Factors and Problems Associated with Precocious Puberty

(N=60)

Sl. No.	Risk factors level	frequency	percentage	Mean	SD
1	Low risk	4	6.67%	42.50	8.40
2	Moderate risk	18	30%		
3	High risk	38	63.33%		

Table 1.2. Distribution of Levels of Problems Associated with Precocious Puberty

(N=60)

Sl. No.	Associated problems	frequency	percentage	Mean	SD
1	Mild problem	0	0.00%	56.80	9.20
2	Moderate problem	18	30%		
3	Severe problem	42	70%		

Table 1 ,1.2 Shows that the majority of participants (63.33%) had a high level of risk factors and 70% reported severe problems associated with precocious puberty.

Association with Demographic Variables

BMI: A statistically significant association was found between BMI and the level of risk factors ($\chi 2=8.12$, $p \leq 0.05$).

Dietary Pattern: Frequent junk food consumption was significantly associated with higher risk scores ($\chi 2=7.45$, $p \leq 0.05$).

Other Variables: Age, gender, and family income showed no significant association ($p>0.05$).

NURSING IMPLICATIONS

Nursing Practice: School health nurses should conduct routine screening for early signs of precocious puberty and BMI abnormalities.

Nursing Education: Nursing curricula should incorporate modules on early pubertal disorders and psychological counselling for young girls.

Nursing Administration: School management and health administrators should organize health education campaigns on healthy eating, physical activity, and avoiding endocrine disruptors.

RECOMMENDATIONS

A similar study can be conducted with a larger sample size across diverse geographic regions. A comparative study can be conducted between urban and rural adolescent girls regarding risk factors of precocious puberty. An evaluative study can be conducted on the effectiveness of a structured teaching program regarding lifestyle modifications for early pubertal management.

CONCLUSION

The study highlights that higher BMI, unhealthy dietary habits, and lifestyle factors serve as major risk factors for precocious puberty among adolescent girls. The physical and emotional challenges associated with early maturation necessitate early identification, nutritional guidance, and psychological support from healthcare providers, teachers, and parents.

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