

# Study on Common Health Problem of School Going Children in a City of Central India

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## ABSTRACT

**Background:** A child's poor health status is one of the factors contributing to low academic performance and high absenteeism. The school-going years are a formative time for both physical and mental development.

**Methods:** A cross-sectional study of six months was carried out in twenty government primary schools (1000 samples) from Bhopal's urban and suburban districts were chosen at random to participate in the study. Data were imported into Microsoft Excel 2007; SPSS version 19 was used for analysis.

**Results:** In this case study out of 1000, male students were 59.2%, and 40.8% were female. The majority of the students had a nuclear family in their house (62.2%), while only 14.8% were 3-generation families. The proportion of health issues was higher among female students (39.3%). Nutritional deficiency (29.5%) was followed by dental carries (28.1%) and refractive errors (23.4%). Other 64% of children had no health problems.

**Conclusion:** Based on this study school-age children's health issues are influenced by a variety of factors, including diet, family history, religion, socioeconomic situation, and personal hygiene. Common morbidities include skin conditions, nutritional deficiencies, dental cavities, and refractive defects. Children continue to be undernourished despite schools having a regular mid-day meal program.

**Key-words:** Dental caries, Infection, Health status, Morbidities, Obesity, School children

## INTRODUCTION

For kids to have a high quality of life, schools are vital to their early development, education, and general psychological and social well-being. Numerous studies attest to the fact that healthier students study more effectively. <sup>[1]</sup> The WHO's "Shape the Future of Life, Healthy Environments for Children" theme highlighted the importance of children's health and environment. In India, children make up more than 25% of the population overall, with elementary school students making up a sizable portion of that group at 9.2%. <sup>[2]</sup>

School health programs offer a cost-effective means to enhance students' health and academic performance, fostering healthy habits that last a lifetime. <sup>[3]</sup>

According to a NIHFWS study of school health programmes in nine PHCs, 24% of schoolchildren who underwent medical examinations had a disease or defect, which was frequently influenced by social and economic variables, such as living situations. <sup>[4]</sup> Prior research has indicated that prevalent health concerns among school-age children, including malnourishment, worm infestations, dental caries, and skin infections, can have a substantial impact on learning processes, attendance, academic performance, and students' overall development. These issues range in prevalence from 5 to 50%. <sup>[5]</sup>

These obstacles affect students' social and financial security in the long run. The majority of learning processes, such as reading, writing, and computer use,

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are visual. While untreated hearing disorders are linked to speech and language difficulties, poor academic achievement, and social and emotional difficulties, uncorrected visual abnormalities might limit a student's performance. [6, 7]

Tooth pain and discomfort can cause missed school days, sleep issues, and unfinished homework. Obesity in children is a serious health issue. Over 340 million school-age children were fat, according to a WHO survey.<sup>[9]</sup> Obesity in childhood raises the chance of developing chronic health disorders later in life and frequently persists into adulthood [10]. A wide range of health issues are prevalent in children of school age. To reduce negative effects on the body, mind, and society, health screening programmes seek to improve early diagnosis of health disorders and encourage prevention. This study was planned to study the health profile of school-going children. The research findings will help in determining the burden of psychosocial problems that are useful in early diagnosis and management.

## MATERIALS AND METHODS

**Study Design-** The present study was a descriptive cross-sectional study.

**Study Setting-** Field practice area of Mahaveer Institute of Medical Science (MIMS); Bhopal. The study population was selected from 20 primary schools situated in urban and semi-urban areas within 15 km radius of MIMS Bhopal.

**Study period-** July 2023 to December 2023 for six months.

**Sample size and Sampling technique-** Twenty urban and suburban government elementary schools in Bhopal were chosen at random to participate in the study. Using easy sampling, a minimum determined sample size of 1000 based on the prevalence of corresponding health problems was chosen.

**Inclusion and Exclusion Criteria-** Every student registered at the chosen school. The parents gave their prior written agreement after being informed of the study's goal. Children, who were unavailable at school were not included in the research.

**Data Collection Tools and Procedure-** After obtaining the necessary approval and consent from the school administration, the study's goal was communicated to the classroom teachers, and a rapport-building process was established with the kids. In addition to interviewing the parents, the child is examined to gather data. Utilizing a semi-structured questionnaire, the study variables are evaluated. The screening programme involved medical professionals, nurses, and dentists in well-trained health teams. Every research participant underwent a general assessment and screening; sociodemographic information (age, sex, school grade, and region), body mass index, dental cavities, visual acuity, and hearing issues were among the data gathered. Pupils were classified as myopic if their Snellen chart score was less than 6 out of 12.

The dentist examined the pupils to see whether they had dental cavities, then recorded those findings in the computerized records. The health team used an audiometer to assess the student's hearing for a potential hearing issue. The present assessment includes hearing examination data of the first-grade students only. We considered the normal hearing range 1000–4000 Hz at an intensity of 25 dB [12]. Conjunctival, tongue and palm pallor are used to screen for iron-deficient anaemia. The children's lips, gums, and tongue were checked for angular lesions, cheilosis, glossitis, bleeding and swelling of the gums, papillary atrophy, and other indicators of malnutrition. The institutional ethical committee granted the study ethical clearance. It was made pleasant for the participants. By the time the study concluded, all of their questions had been successfully addressed, and the research staff had assisted and advised the students who were having health issues.

**Statistical Analysis-** Data were imported into Microsoft Excel 2007; SPSS version 19 was used for analysis. Initial data inspection, content analysis, and interpretation were the processes that were involved. The percentage and frequency were computed.

**Ethical Approval-** Approval for this study was obtained from the relevant ethical committee, ensuring that all research procedures adhered to ethical standards and guidelines for protecting participants' rights and confidentiality.

## RESULTS

The study included 1000 schoolchildren in all, with a mean age of 10.5 years. Students were split 40.8% female and 59.2% male. Just 14.8% of the students lived in three-generation families, compared to the majority of students (62.2%) who had nuclear families. The majority of research participants (41.1%) belonged to the socioeconomic class III. (Table 1).

**Table 1:** Sociodemographic Profile of Study Subjects (n =1000)

Parameter	N=1000	Percentage (%)
Age		
Mean $\pm$ SD	10.5 $\pm$ 1.6	
Range	6 - 14 Years	-
Gender		
Male	592	59.2
Female	408	40.8
Type of Family		
Nuclear	622	62.2
Joint	229	22.9
3 Generation	149	14.9
Socioeconomic status		
Class I	79	7.9
Class II	196	20.7
Class III	422	41.1
Class IV	251	25.1
Class V	52	5.2

The association between health problems and the gender of school children is illustrated in Table 2. The proportion of health issues was significantly higher among female students (39.3%) as compared to male students (32.2%).

**Table 2:** Morbidities among male and female study subjects (n =1000)

Morbidity	Male (%)	Female (%)	Total (%)
Present	191 (32.2)	160 (39.3)	351 (35.1)
Absent	402 (67.7)	247 (60.7)	649 (64.9)
Total	593 (100)	407 (100)	1000 (100)

The most common health problem among school children was nutritional deficiency (29.5%) followed by dental carries (28.1%) and refractive errors (23.4%). Skin diseases were present in 16.4% of students while 14.9% of students were suffering from ARI. Overweight was present in 9.2 % of students. 7.6 % were suffering from Ear diseases. Other 64% of children had no health problems (Table 3).

**Table 3:** Distribution of Study participants according to morbidity pattern (n=1000)

Morbidity	N=1000	Percentage (%)
Refractive errors	234	23.4
Overweight	92	9.2
Obesity	19	1.9
Dental carries	281	28.1
Auditory problems/ Ear Discharge	76	7.6
Rt ear	41	4.1
Left ear	30	3
Both	04	0.4
Skin diseases	164	16.4
ARI	149	14.9
Nutritional deficiency	295	29.5
Normal	649	64.9

## DISCUSSION

The prevalence of morbidity among children ranged from 0.4% to 35.1%, which emphasizes the value of screening for health issues and identifying them early so that they can be managed.

The present study revealed that 35.1% of the study participants had health problems. Similar observations were noted in a study done by Asghar *et al.* [11] at 39.9%. In contrast, study done by Srivastava *et al.*, 71.3% of the children had health problems which was much higher than the present study. [12] In our study 64.9% of students had no health problems, 14.9% were suffering from acute respiratory infections, 29.5% had nutritional problems, and 28.1% had dental caries. This almost coincides (27.9%) with the study conducted in Tamil Nadu by Ananthakrishnan *et al.* [13] Study done by Moola *et al.* [14] showed dental caries as a major health problem 65.1%.

In our study 9.2% were overweight and 1.9% were obese which falls short of the prevalence of overweight and obesity, which was shown in other studies to be 10.7–14.4% and 7.9–13.9%, respectively. <sup>[15,16]</sup> 7.6% have ear discharge and 16.4% have skin infection. No significant difference was noted in the age and gender-wise prevalence. The prevalence of eye refractory errors (myopia) was 23.4% in our study.

The literature does indicate that there are variations in the prevalence of myopia among kids in schools, though. In Ireland, schoolchildren aged 6–7 reported a prevalence of 3.3% <sup>[17]</sup> 14.9% among Iranian schoolchildren aged 6 to 15 <sup>[18]</sup> and 35.8% among Chinese pupils aged 6 to 8. <sup>[19]</sup> In Japan, the prevalence of myopia in 6–8-year-old children ranged from 63.1–78.6% <sup>[20]</sup>. This inter-study heterogeneity was mostly caused by differences in the definition of myopia and the screening techniques used.

## CONCLUSIONS

The purpose of the study is to emphasize the nutritional status and health profile of school-age children. The Health Problems in school-going children depend upon many factors like personal hygiene, socioeconomic status, family background, religion and nutritional intake. Even with schools having a regular midday meal program, children are nonetheless undernourished. Promoting children's health should be the main goal of regular school health initiatives. When family members participate in an effective school health programme, they may use the resources already in place to create a healthy environment for their children and provide them with the knowledge and skills they need to live healthy lives.

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## CONTRIBUTION OF AUTHORS

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