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Original Research Article

Health status assessment of children studying in the government school of an urban field practice area of the government medical college of Uttarakhand

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Abstract

Background: School health is vital for academic success and lifelong well-being. Healthy students learn better and develop healthy habits. Schools play a key role in early identification and intervention of health issues, promoting a culture of wellness for students, staff, and the community. This improves academic performance, reduces absenteeism, and fosters a healthier future.

Materials and Methods: An observational study was conducted in the field practice area of department of Community Medicine, Government Medical College Dehradun school using a pre-validated questionnaire and physical examinations to assess students' health. Socio-demographics, hygiene practices, eating and sleeping habits, and deworming Data included /IFA intake. Height, weight, and several physical characteristics were measured.

Result: The study includes students between 10-16 years majority of them were from 14–16-year (65%), with a higher female (55.62%) than male (44.37%) proportion. Majority of them were Muslim (76.03%) and most of the students were in class 10-12 (63.6%). Hygiene practices varied; most students washed hands with soap (88.5%), bathed daily (74.85%), but fewer changed clothes (53.8%) or washed clothes daily (47.9%). Tooth brushing habits were infrequent, with only 8% brushing twice daily. Nutritional anaemia prevention practices were limited; only 71.6% received deworming tablets and 47.9% received iron supplements. Pad availability at school was reported by 62.8% of students.

Conclusion: Present study elucidates that student exhibited good personal hygiene, but awareness and implementation of WIFS and deworming programs were insufficient. Improved sensitization of teachers and students regarding various school health programs is the need of an hour.

Keywords: Personal hygiene, School health, Weekly iron folic acid supplementation, Menstrual hygiene.

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1. Introduction

School health is crucial for physical and mental well-being, as a healthy school environment fosters optimal learning conditions. When students are physically fit, well-nourished, and mentally balanced, they are better equipped to concentrate, participate, and absorb new information.[1] This ultimately enhances academic performance and overall educational outcomes. Moreover, promoting health in schools instills lifelong habits that contribute to overall well-being. By teaching children about nutrition, exercise, hygiene, and mental health awareness, schools empower them to make healthier choices both during their academic years and throughout their lives. These habits can significantly reduce the risk of chronic diseases such as obesity, diabetes, and heart disease later in life. The health status of school children is a critical concern for educators, parents, and policymakers alike. Healthy children are more likely to succeed academically, have better social interactions, and grow into productive adults. However, with changing lifestyles, dietary patterns, and increasing sedentary behaviours, there is a growing need to understand and address health issues among school-aged children.

In addition, schools play a critical role in identifying and addressing health issues early on. Through routine screenings and assessments, health professionals can detect potential problems such as vision or hearing impairments, developmental delays, or mental health concerns. Early intervention can prevent these issues from escalating and negatively impacting a student's academic and personal

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development. Furthermore, promoting a healthy school environment extends beyond the students to encompass teachers, staff, and the broader community. Healthy role models and supportive policies create a culture of wellness that benefits everyone involved. Also, many school children suffer from disease problems that can be managed by early intervention and appropriate health education. Ensuring that children are healthy and able to learn is an essential component of an effective education system. Also, it has been seen that good health promotes enrollment and reduces absenteeism from schools and educational premises. In conclusion, school health is vital for promoting academic success, fostering lifelong habits, early intervention, and creating a culture of wellness. By prioritizing health in educational settings, we can empower students to thrive academically, physically, and emotionally, laying the foundation for a healthier future.

The study represents a comprehensive survey of the health status of school children, aiming to assess various factors influencing their well-being. It also examines physical health, mental health, nutritional habits, and lifestyle choices among school-going children. Through a multi-faceted approach, including surveys, interviews, and health assessments, this research provides insights into the current state of children's health and suggests strategies for improvement. The study aims to provide a comprehensive overview of the health status of school children, estimating the socio-demographic and etiological factors related to their health, identifying areas of concern, and suggesting interventions to promote better health outcomes.

2. Materials and Methods

It was an observational cross-sectional study, conducted in the government senior secondary school of the urban field practice area, Mehuwala of government medical college, Dehradun. The duration of the study was two months (March -April 2023). Purposive sampling was done and all the students studying in the school were enrolled after obtaining informed consent. A pre-validated semi-structured questionnaire was used to collect data from the study participants. Data collection was done by the team, constituted of Faculty members, postgraduate residents of the community medicine Department, Interns, MBBS students and multipurpose social workers. The data collection team was trained beforehand under the supervision of faculty for proper anthropometry measurements and general physical examination. The study tool comprises data regarding sociodemographic profile, hand washing practices, personal hygiene, dental hygiene, eating habits, bladder and bowel habits, sleeping pattern, deworming, and IFA (iron and folic acid) tablet intake. Height and weight were measured. All the study participants were examined for pallor, clubbing, cyanosis, icterus, lymphadenopathy, ear, and dental examination. The visual acuity was assessed by Snellen's chart, followed by systemic examination. The data was entered and analysed in MS Excel.

3. Result

It was observed that most of the study participants were in the age group 14-17 years (65%) and 36.4% were from 6th to 9th Class and rest (63.6%) were from 10th-12th class. The majority of school students were Muslims (76.03%), and the proportion of females (55.62%) was higher than that of males (44.37%).

The education status of the father was very low, as 25% were illiterate, 23% studied till Primary class, 21% till middle class, and 20% till secondary class. Comparatively educational status of mothers was also very low, as 39% were illiterate and 22% had studied till primary class. Most students fathers were skilled (61%) or semi-skilled workers (27%), while most mothers were housewives (93.5%). Families were mostly medium-sized, with 3–8 members in over 94% of cases, as shown in **Table 1**.

Students were interviewed regarding their daily hygiene practices and it was found that handwashing was practiced by 88.75% of participants, and among them, 88.5% were using soap & water.

74.85% of students take a bath daily, and only 53.8% change clothes daily, while 5.6% change after more than 3 days. Only 47.9% of students wash their clothes daily, while 10.9% wash their clothes after more than 3 days. Regarding the cleanliness of footwear, 89.6% of students keep their footwear clean, and 91.1% wear clean socks. Students were assessed on practice related to brushing of teeth habit, and as per students, only 8% of students brush twice daily and 86% brush once, and 5.9% do not brush their teeth. 85.8% of students wash their hair on alternate days. PICA Habit is reported in 11.5% of participants, as shown in **Table 2**.

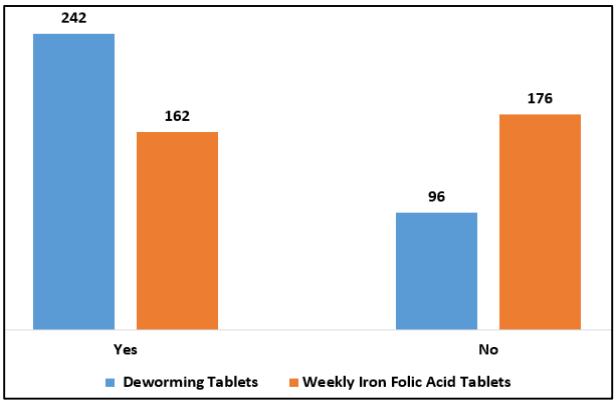

Figure 1: Practices to prevent nutritional anaemia among school students (n=338)

Students were interviewed regarding practices to prevent nutritional anaemia, and only 71.6% were given deworming tablets, and only 47.9% were given weekly IFA tablets, as shown in **Figure 1**.

Table 1: Socio-demographic profile of school students (N=338)

S. No	Variable	Sub-Variable	n (%)
1	Age	10-13 Years	59(17.4%)
		14-17 years	220(65.1%)
		18-19 Years	59(17.5%)
2	Class	6^{th}-9^{th} Class	123(36.4%)
		10-12^{th} Class	215(63.6%)
3	Religion	Hindu	81 (23.96)
		Muslim	257 (76.03)
4	Gender	Female	188 (55.62)
		Male	150 (44.37)
5	Father's Education	Illiterate	84 (24.85)
		Up to Primary Class	77 (22.78)
		Middle Class	72 (21.13)
		Secondary Class	69 (20.41)
		Senior Secondary	31 (09.17)
		Graduation	3 (00.88)
		Post-Graduation	2 (00.59)
6	Father's Occupation	Unemployed	29(8.6)
		Semi-Skilled Worker	94 (27.81)
		Skilled Worker	208 (61.53)
		Professional	7 (2.07)
7	Mother's Education	Illiterate	132 (39.05)
		Up to Primary Class	77 (22.78)
		Middle Class	58 (17.31)
		Secondary Class	40 (11.83)
		Senior Secondary	21 (06.21)
		Graduation	6 (01.77)
		Post-Graduation	4 (1.18)
8	Mother's Occupation	Skilled Worker	11 (03.25)
		Semi-Skilled Worker	4 (01.18)
		Professional	2 (00.59)
		Housewife	316(93.5%)
9	No of members in the family	3-5 members	160 (47.33)
		6-8 Members	158 (46.74)
		9-11 members	20 (05.91)

Table 2: Personal hygiene practices of school students (N=338)

S. No	Variable	Sub-Variable	n (%)
1	Handwashing	Practiced	300 (88.75)
		Not Practiced	38 (11.24)
2	Handwashing method	Only Water	39 (11.53)
		Soap & Water	299 (88.46)
3	Bathing Habits	Takes a bath daily	253 (74.85)
		Do not take a bath daily	85 (25.14)
4	Changes clothes	Changes Daily	182 (53.84)
		Changes after 1-3 days	137 (40.53)
		Changes >3 days	19 (05.62)
5	Clothes washing	Washes Daily	162 (47.92)
		Washes after 1-3 days	139 (41.12)
		Washes >3 days	37 (10.94)
6	Shoes /Footwear	Polished /Clean	303 (89.64)
		Dirty	35 (10.35)

Table 2 Continued…			
7	Socks	Clean	308 (91.12)
		Dirty	30 (08.87)
8	Brushing of teeth	2 times a day	27 (07.98)
		Once a day	291 (86.09)
		No	20 (05.91)
9	Apply Kajal	Yes	64 (18.93)
		Occasionally	110 (32.54)
		No	164 (48.52)
10	Hair Washing	Alternate days	290 (85.79)
		Occasionally	48 (14.20)
11	PICA habit -habit of eating paper, clay, paint chips, dirt, or hair.	Yes	39 (11.53)
		No	299 (88.46)

Table 3: General physical examination findings of school students (N=338)

S. No	Variable	Sub-Variable	n (%)
1	Appearance	Normal	284 (84.02)
		Over weight	2 (00.59)
		Under weight	52 (15.38)
2	Hair Examination	Normal	324 (95.85)
		Dull and Dry	14 (04.14)
3	Lips Examination	Normal	318 (94.08)
		Cheilosis	2 (00.59)
		Dry	18 (05.91)
4	Tongue Examination	Normal	318 (94.08)
		Anaemic	20 (05.32)
5	Teeth Examination	Normal	229 (67.75)
		Attrition	3 (00.88)
		Caries	10 (02.95)
		Mottled	46 (13.60)
		Plaque	10 (02.95)
		Yellowish	40 (11.83)
6	Skin Examination	Normal	315 (93.19)
		Dry & Scaly	23 (06.80)
7	Conjunctiva Examination	Normal	331 (97.92)
		Redness	7 (02.07)
8	Ear Examination	Normal	301 (89.05)
		Wax	33 (09.76)
		Wax and Discharge	4 (01.18)
9	Visual Acuity Right Eye	6/6	242 (71.59)
		6/9	50 (14.79)
		6/12	15 (04.43)
		6/18	17 (05.02)
		6/24	6 (01.77)
		6/36	8 (02.36)
10	Visual Acuity Left Eye	6/6	232 (68.63)
		6/9	53 (15.68)
		6/12	20 (05.91)
		6/18	22 (06.50)
		6/24	8 (02.36)
		6/36	3 (00.88)
11	Appetite	Normal	290(85.8)
		Reduced	48(14.2)
12	Sleep-wake cycle	Normal	332(98.2
		Reduced	06(1.8)
13	Bladder & Bowel habits	Normal	337(99.7)
		Reduced	01(0.3)

Regarding the general physical appearance of students, the majority (84%) of students have a normal build. Hairs were normal in 96% of students, while lips and tongue were normal in 94% of students.68% of students had normal teeth, while Mottled teeth (13.6%), yellowish teeth (11.8%), caries, and plaque (~3% each) were also present in few students 93% of students had normal skin, and 6.8% had dry/scaly skin.98% has normal conjunctiva. Ear examination revealed 9.8% had wax, 1.2% had wax with discharge. On visual acuity testing, in the Right Eye, 72% have perfect vision (6/6); others show mild to moderate impairment. While in Left Eye, 69% have 6/6 vision; ~31% have varying degrees of impairment. Appetite was normal in 86% of students, reduced in the rest. Sleep-wake cycle was normal in 98% of students, and bladder and bowel habits were normal in approximately all students, as shown in **Table 3**.

Students were clinically examined, and pallor (16.9%), icterus (2%), and clubbing and cyanosis (1.5%) were present, as shown in **Figure 2.**

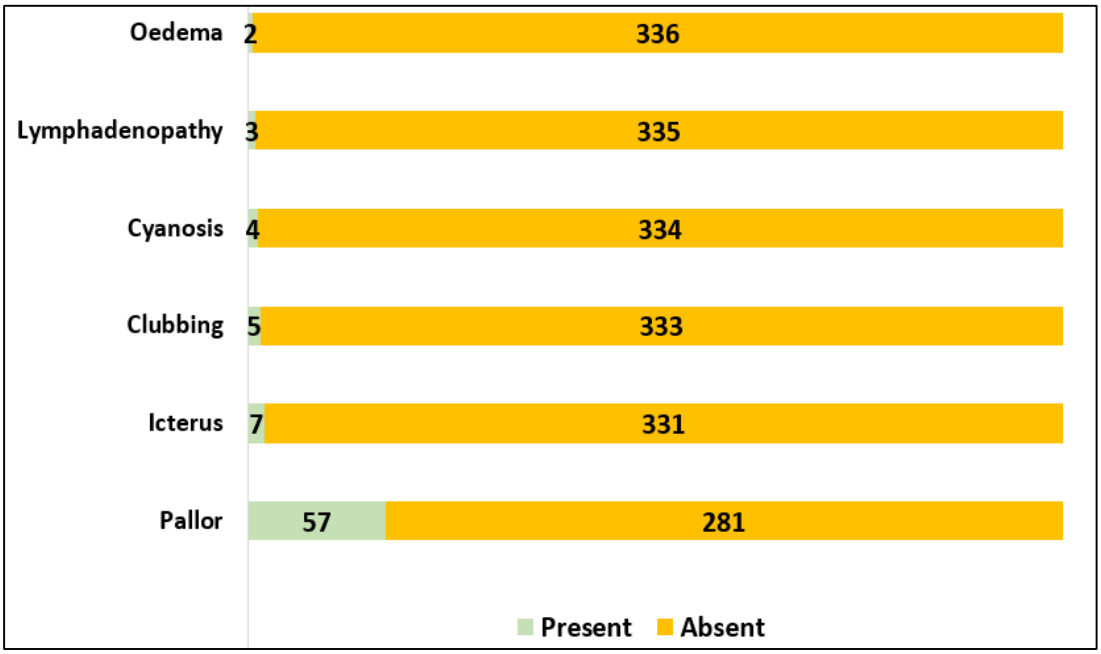

Figure 2: Clinical examination findings in school students (n-338)

Table 4: Menstrual hygiene practices in girl school students (N=188)

S. No	Variable	Sub-Variable	n(%)
1	Age of menarche	10 Year	2 (01.06)
		11 Year	6 (03.19)
		12 Year	43 (22.87)
		13 Year	57 (30.31)
		14 Year	51 (27.12)
		15 Year	15 (07.97)
		16 Year	14 (07.44)
2	Use of a Pad/cloth	Pad	158 (84.04)
		Cloth	9 (04.78)
		Pad and Cloth	21 (11.17)
3	Sanitary pads provided at the school premises	Yes	118 (62.76)
		No	70 (37.23)
4	Medicine for pain relief provided by the school	Yes	75 (39.89)
		No	113 (60.10)

Most girls experienced menarche between 12–14 years (80.3%), with a Peak at the age of 13 years (30.3%). Material used during menstruation was Pads (84%), Cloth (4.8%), and both pad and cloth (11.2%): Regarding availability, 62.8% reported pads are available at school, and only 39.9% reported receiving pain relief medicine at school as shown in **Table 4**.

4. Discussion

The study was conducted in the government schools of the field practice area of Government Medical College, Dehradun, revealing that two-third of the study participants were practicing good personal hygiene habits and following them as their daily routine and inculcating those habits in their day-to-day lifestyle. Approximately four-fifth of the girl's population were using pads for menstrual cycle and knows their proper ways of disposal i.e., again a good practice to start at an early age. Early preventive and promotive habits will mold a child to attain its maximum potential.

4.1. Personal hygiene practices

In a study done by Sihra J, 95.1% practice handwashing which was slightly more than the present study i.e., 88.5%, a significantly low proportion (56%) was observed by Ranga A, the reason being a huge sample size and different socio-cultural practices.[1,2] Washing the hands with soap and water was practiced by 88.46% of the participants in present study whereas contrasting finding are seen in a study done by Almiya R in Uttarakhand where the number is just 11.46%.[3] Approximately three-fourth of the study population in present study (74.85%) bath daily whereas the findings were consistently low in a study done by Sarkar M (42.31%) and Haradanahalli R (40.71%).[4,5] A study conducted in Jaipur Rajasthan in a population of 1345 participants by Sihra J, observed that 97.3% participants brush their teeth at least once daily whereas slightly less proportion was observed in the present study i.e., 88.06%.[1]

4.2. Prevention of nutritional anemia

In the present study the proportion of study participants consuming Weekly Iron and Folic Acid Supplementation was 47.92% whereas the study done by Wangaskar SA the proportion was 67.7% and a significantly low number was reported by Sarada AK in adolescents of rural schools of Kannur, North Kerala i.e., 22.70%, the most common reason for this low number was described as they didn't find it necessary and they feel that they are healthy, that create utmost importance of awareness generation before commencing the program.[6,7]

4.3. General physical examination

Sedentary lifestyle and lack of physical activity is very much common in all the age groups. In the present study contrastingly, this proportion was very low i.e., just 0.59% similar findings (3.65%) were observed by Kulkarni MM.[8] As the proportion of underweight was 15.38% in the present study, just twice this number was observed by Kulkarni MM and Shivprakash NC.[8,9]

Shivprakash NC has also observed the proportion of study participants having dull, fragile, and dry hair was 3.9% that corroborates with the present study. Due to poor dental hygiene, lack of awareness and improper brushing most of the children's have compromised dental health nowadays. In the present study, the dental carries were present in just 2.95% where as in a study done by Shivprakash NC and Jain M the number was contrastingly high i.e., 28.3% and 15% respectively.[9,10] Shivprakash NC had observed the prevalence of mottling being 3.9% which is less in comparison to the present study (13.6%).[9] Students presenting with wax in the ear was 9.76 whereas the study done by Shaifi S in Jodhpur the number was shockingly high (62.1%) may be due to extreme weather conditions.[11] Asghar SA had observed that students presenting with wax as well as discharge was 10% whereas relatively low number was observed in our study.[12]

In the study population pallor was documented in approximately 16.86% whereas similar findings were observed by Jain M and slightly increased number was observed by Patel N i.e., 30.99%.[10,13]

4.4. Menstrual hygiene practices

It was observed in the present study that the majority of the school-going girls had attained menarche between 10 and 16 years which was similar to the study done in Jodhpur by Shaifi S.[11] Approximately 85% of the study participants use pads for their menses, the proportion is similar in the study done by Shaifi S but varies from 69.8% and 95% in the study done by Yaliwal RG and Khan N respectively reason being lack of awareness and poor supply.[11,14,15] The availability of pads in schools again make a very important factor for school attendance and in maintenance of proper menstrual hygiene in school. Approximately 63% girls confirm the availability of pad in school similar findings were observed by Sarangi S where the number is 72.6%.[16]

5. Conclusion

The present study highlights that the personal hygiene among the students were good but awareness regarding WIFS and deworming and its proper implementation is inadequate. Teachers as well as students should be sensitized time to time for the importance of implementation of these programs at school level only. The school students who were diagnosed with any of the ailment regarding ear, eye, skin, dental carries etc. were referred to higher centres for further management. As childhood is the crucial time for habit formation, more and more awareness can be generated in developing healthy behaviour by positive reinforcement.

6. Source of Funding

None.

7. Conflict of Interest

None.

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