



**Original Article:**

**Health Needs of Ashram Schools in Rural Wardha**

**Amol R Dongre**, Department of Community Medicine, Sri Manakula Vinayagar Medical College, Pondicherry, India,  
**Pradeep R Deshmukh, BS Garg**,  
Dr Sushila Nayar School of Public Health, Mahatma Gandhi Institute of Medical Sciences, Sewagram, India.

**Address For Correspondence:**

**Deshmukh PR**,

Professor,

Dr Sushila Nayar School of Public Health,  
Mahatma Gandhi Institute of Medical Sciences,  
Sewagram - 442102, India.

**E-mail:** prdeshmukh@gmail.com

**Citation:** Dongre AR, Deshmukh PR, Garg BS. Health Needs of Ashram Schools in Rural Wardha.. *Online J Health Allied Scs*. 2011;10(1):2

**URL:** <http://www.ojhas.org/issue37/2011-1-2.htm>

**Open Access Archives:** <http://cogprints.org/view/subjects/OJHAS.html> and <http://openmed.nic.in/view/subjects/ojhas.html>

Submitted: Jan 9, 2011; Accepted: Mar 10, 2011; Published: April 15, 2011

**Abstract:**

**Objective:** To assess the health needs for health promoting Ashram schools in rural Wardha. **Methods:** It was a cross sectional study undertaken in 10 Ashram schools, using qualitative (SWOT analysis, Transect walks and Semi-structured interviews of teachers) and quantitative (Survey) methods. Hemoglobin examination of all children was done by using WHO hemoglobin color scale. Anthropometric measurements such as height and weight of each child were obtained. Physical activity score for each child was calculated. The manual content analysis of qualitative data was done and the quantitative data was entered and analyzed using Epi\_info (version 6.04d) software package. **Results:** Out of 1287 children examined, 724 (56.3%) were boys and 563 (43.7%) were girls. About 576 (44.8%), 213 (16.6%), 760 (59.1%) children had untrimmed nails, dirty clothes and unclean teeth respectively. More girls had (31.6%) lice infestation than boys (18.2%). Eighty six (6.7%), 75 (5.8%) and 110 (8.6%) children had scabies, fungal infection and multiple boils on their skin respectively and 158 (12.3%), 136 (10.6%) and 66 (18.3%) children had dental caries, wax in ears and worm infestation respectively. Notably, 988 (76.8%) children had iron deficiency anemia which was significantly more among girls (81.9%) than boys (72.8%). About 506 (39.3%) children consumed any tobacco product in last one month. About 746 (57.9%) children were classified to have sedentary physical activity. Among 774 children ( $\geq 12$  years), 183 (23.6%) and 34 (4.4%) children felt lonely 'sometime' and 'most of the times' respectively. About 398 (94.3%) boys and 342 (97.2%) girls did not know the modes of transmission of HIV/AIDS. **Conclusions:** In conclusion, there was high prevalence of risk factors for both communicable and non-communicable diseases in Ashram school environment. This dictates the urgent need for teacher driven, needs based and school based intervention that can screen and identify potentially preventable health conditions among underprivileged Ashram school children.

**Key Words:** Ashram school; Personal hygiene; Morbidities, Tobacco consumption; Physical activity; Health promoting schools.

**Introduction:**

Educational inequality among tribal and scheduled caste children is the resultant of the socio-economic backwardness of their home environment and the illiteracy of their parents.<sup>1</sup> Scheduled Castes (SC) and Scheduled Tribes (ST) are the Indian communities that are explicitly recognized by the Constitution of India as previously 'depressed classes'.<sup>2</sup> After independence, several educational and welfare attempts have been made to improve the educational attainments of their children. Ashram school is one of such input specially designed to suit these underprivileged children from extremely poor local families. Ashram schools are residential schools providing lodging and boarding, uniforms, books and notebooks and educational equipments to its inmates and helping them to remain in the school system without dropping out. The scheme of Ashram School Complex for tribal students is under implementation since 1952.<sup>3</sup>

World Health Organization (WHO) launched 'Global School Health Initiative', in 1995, to mobilize and strengthen health promotion and education activities at the local, national, regional and global levels. The Initiative is designed to improve the health of students, school personnel, families and other members of the community through schools. The goal is to increase the number of schools that can truly be called "Health-Promoting Schools". A Health-Promoting School can be characterized as a school constantly strengthening its capacity as a healthy setting for living, learning and working.<sup>4</sup> The poor background of the Ashram school children and their poor health status is known.<sup>1,5</sup> But the information required for designing a health promoting school initiative is rarely been studied. The present study was a part of baseline assessment for World Health Organization funded project titled 'Health promoting Ashram schools in rural Wardha'. Hence, the objective of the study was to assess the health needs for health promoting Ashram schools in rural Wardha.

**Materials and Methods:**

**Study area:** The present study was done in Wardha district of India (Maharashtra state). Out of 20 Ashram schools, 10 were selected for the present study. Three schools were in Wardha

block, 4 schools were in Selu block and one each in Karanja, Arvi, and Samudrapur block. The average distance of these schools from Wardha city was 39.3 km. The study was carried out from August to September 2008.

**Selection of Ashram schools:** In July 2008, a one day orientation program was organized for principal and teacher from 20 Ashram schools of Wardha district. They were explained the objectives of the project activities. Out of 18 Ashram schools who were attended the program and were willing to participate in the study, we selected 10 Ashram schools depending upon accessibility and available resources.

**Study design:** A cross sectional study was carried out using qualitative [SWOT analysis<sup>6</sup>, Transect walk<sup>7</sup> and Semi-structured interviews of teachers<sup>8</sup>] and quantitative (Survey) methods.

**Qualitative data collection:** A triangulation of qualitative methods such as Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, transect walk and semi-structured interviews was done to ensure the better validity of qualitative data. In SWOT analysis exercise, teachers were asked to describe in their own words and make a free list of perceived strengths, weaknesses, opportunities and threats for health promoting Ashram schools. During school health check-up, transect walks in schools and semi-structured interviews of school principals were carried out. Transect walk focused on environment sanitation, while semi-structured interviews explored the current situation of Parent- Teacher Association (PTA), life skills education, health care seeking behaviors and health promoting policies, which are the important steps to develop Health Promoting School (HPS).<sup>9</sup> A trained public health specialist after obtaining the informed consent from the participants, collected the qualitative data.

**Quantitative data collection:** The school health check-up was undertaken in 10 Ashram schools during August - September 2008. All children who were present in the school were interviewed and examined by a team of trained medical doctor, medical interns, Auxiliary Nurse Midwife (ANM) and social workers by using pre-designed and pre-tested questionnaire. The questionnaire covered information on personal hygiene, physical status, nutrition, environment, physical activity, substance abuse, risk behavior, life skills and others. Children with age 12 years or more were also enquired about feelings and friendships and awareness about HIV/AIDS. The questionnaire was based on Global School-based Student Health Survey (GSHS)<sup>10</sup> and the qualitative information obtained in pre-survey SWOT analysis exercise.

Hemoglobin examination of all children was done by using WHO hemoglobin color scale, which is recognized as reliable and rapid method for primary health care settings in developing countries.<sup>11</sup> Free flowing blood drop was obtained from each subject by finger prick method by using sterile disposable lancet. Hemoglobin percentage was assessed by trained medical doctor by matching the color of a drop of blood on approved test strip with one of the given six shades of red in day light. Based on their hemoglobin levels, anemia among subjects was then classified as per the standards of WHO.<sup>11</sup>

Anthropometric measurements such as height and weight of each child were obtained. Heights were taken to the minimum of 1mm and weights were taken to the minimum of 100 gm with minimum clothing. Weighing scale was calibrated to the zero before taking every measurement. All the measurements were taken as per guideline of World Health Organization. Body Mass Index (Kg/m<sup>2</sup>) categories were formed using CDC 2000 reference.<sup>12</sup> Physical activity score for each child was calculated and classified to find out status of physical activity. A scoring system by Ramachandran et al was modified for school children and used to quantify physical activity.<sup>13</sup>

The permission from the district school authorities and school principals was obtained for the present study. Children with minor ailments were treated and given health education.

**Data analysis:** The manual content analysis of qualitative data was undertaken to get better understanding of participants' worldview.<sup>14</sup> Quantitative data was entered and analyzed using Epi\_info (version 6.04d) software package.

#### **Results:**

**Qualitative assessment: SWOT analysis:** From teachers' viewpoint, Ashram schools had certain strengths such as building (infrastructure), availability of safe drinking water, power supply, play ground and the trained teaching staff. But several weaknesses were found to limit health promotion in Ashram schools. First, its poor training of teachers to detect and treat minor ailments. Second, two schools were run in rented building with overcrowding. Third, it was prevalent addictions and superstitions among children which they inherit from their poor socio-economic background. Teachers expressed their willingness to participate in health promoting school activity which could be seen as an opportunity. Poor cooperation from the parents, school children and their deeply rooted faith in cultural beliefs and practices were seen as the potential threats for future activities.

**Transect walk in school premises and semi-structured interview with the school teachers:** Out of 10 schools, 8 schools had their own building. Five schools were private; receiving government grant (except one) and rest five were state government owned. Two schools, which were run in rented building, did not have play ground for children.

**Parent teacher association (PTA):** Although PTA is beneficial to foster trusting relationships between teachers and parents; it was conducted in only three schools. One barrier was poor socio-economic background of parents who seldom recognizes the importance of PTA and education. Another obstacle was that the parents, who take their children home for the celebration of festivals, often become late to send them back. Hence the concept of parent teacher association and their regular meetings could be seen as a challenge.

**Safe and healthy environment:** All schools had the availability of safe drinking water. Only one school had well displayed safety instructions in front of kitchen. Four schools had separate toilets for boys and girls. In some places, children were seen going out for defecation. We could also observe the cooking process in kitchen and lunch session in two schools. Hand washing practice was poor as hands were washed with water only. There were no dustbins in the classrooms or near the kitchen. The premise of one of the Ashram schools was clean and had a well developed vegetable garden. One Ashram school was located in the deep forest and had no compound wall. The wild animals often entered the campus at night time.

**Skill based education:** School teachers reported that they organize essay and drawing competitions at school level for development of hidden talents. However, there was little emphasis to explore teaching methodologies which encourages community involvement, encourage group activity and development of skills such as conflict management, stress management and interpersonal skills.

**Access to health care:** The sick children were often taken to the nearest Primary health centre (PHC). If required medical officer of PHC further refer the sick patient to rural hospital or civil hospital. Teachers expressed that they were poorly equipped with essential drugs, knowledge to recognize danger signs and skills to impart first-aid in emergency. Noteworthy, Ashram schools have one male and one female superintendent of social work background for counseling and health care of boys and girls.

**Health promoting policies:** Health promoting policies such as anti-tobacco policy, health promoting policies are implemented as in the form of health education of school children.

**Quantitative assessment:** Out of 1287 children examined, 724 (56.3%) were boys and 563 (43.7%) were girls. About half of the children were in 6-12 years age group and rest half were above 12 years (p= 0.089). Majority 1070 (83.1%) of the children were scheduled tribe (Table 1).

| Variables            | Male             | Female           | Total             | p value |
|----------------------|------------------|------------------|-------------------|---------|
| <b>Age</b>           |                  |                  |                   |         |
| 6-12 years           | 391 (54)         | 289 (51.3)       | 680 (52.8)        | 0.089   |
| > 12 years           | 333 (46)         | 274 (48.7)       | 607 (47.2)        |         |
| <b>Caste</b>         |                  |                  |                   |         |
| Scheduled caste      | 40 (5.5)         | 33 (5.9)         | 73 (5.7)          | 0.059   |
| Scheduled tribe      | 594 (82)         | 476 (84.5)       | 1070 (83.1)       |         |
| Nomadic tribe        | 65 (9)           | 29 (5.2)         | 94 (7.3)          |         |
| Other backward class | 25 (3.5)         | 25 (4.4)         | 50 (3.9)          |         |
| <b>Total</b>         | <b>724 (100)</b> | <b>563 (100)</b> | <b>1287 (100)</b> |         |

Figures in parenthesis are percentages

About 576 (44.8%), 213 (16.6%), 760 (59.1%) children had untrimmed nails, dirty clothes and unclean teeth respectively. Significantly more boys had dirty clothes and teeth than the girls (p=0.001). One fourth of children had lice infestation in their hairs. Girls had more (31.6%) lice infestation than boys (18.2%) (p=0.001). About 81 (11.2%) boys and 29 (5.2%) girls had multiple boils (p=0.001). The worm infestation was more among girls (21.1%) than boys (15.9%) (p=0.015). Eighty six (6.7%), 75 (5.8%) and 110 (8.6%) children had scabies, fungal infection and multiple boils on their skin respectively and 158 (12.3%), 136 (10.6%) and 66 (18.3%) children had dental caries, wax in ears and worm infestation respectively (Table 2).

| Personal hygiene and related morbidities           | Male n=724 | Female n=563 | Total n=1287 | p value |
|--|------------|--------------|--------------|---------|
| <b>Personal hygiene</b>                            |            |              |              |         |
| Uncombed dirty hair                                | 32 (4.4)   | 39 (6.9)     | 71 (5.5)     | 0.050   |
| Untrimmed dirty nails                              | 327 (45.2) | 249 (44.2)   | 576 (44.8)   | 0.736   |
| Dirty clothes                                      | 156 (21.5) | 57 (10.1)    | 213 (16.6)   | 0.001   |
| Unclean teeth                                      | 507 (70)   | 253 (44.9)   | 760 (59.1)   | 0.001   |
| <b>Conditions related to poor personal hygiene</b> |            |              |              |         |
| Head lice  | 132 (18.2) | 178 (31.6)   | 310 (24.1)   | 0.001   |
| Scabies  | 50 (6.9)   | 36 (6.4)     | 86 (6.7)     | 0.715   |
| Multiple boils                                     | 81 (11.2)  | 29 (5.2)     | 110 (8.6)    | 0.001   |
| Fungal infection                                   | 45 (6.2)   | 30 (5.3)     | 75 (5.8)     | 0.500   |
| Dental caries                                      | 91 (12.6)  | 67 (11.9)    | 158 (12.3)   | 0.716   |
| Worm infestation                                   | 31 (15.9)  | 35 (21.1)    | 66 (18.3)    | 0.015   |
| Stye in eyes                                       | 5 (0.7)    | 5 (0.9)      | 10 (0.8)     | 0.935   |
| Wax in ears  | 83 (11.5)  | 53 (9.4)     | 136 (10.6)   | 0.235   |

Figures in parenthesis are percentages

Notably, 988 (76.8%) children had iron deficiency anemia which was significantly more among girls (81.9%) than boys (72.8%) (p=0.001). About 577 (44.8%) children did not consume green leafy vegetables in last seven days and 704 (54.7%) had consumed it once in last one week period. Similarly, 715 (55.6%) children did not eat any fruit in last one week period and 572 (44.4%) children consumed it once in last one week period (Table 3). Noteworthy, 855 (67.5%) children were classified as thin (below 5<sup>th</sup> percentile) where 536 boys (75.3%) and 319 girls (57.6%) were thin (p=0.001) (Table 4).

| Iron deficiency anemia and food consumption                        | Male n=724 | Female n=563 | Total n=1287 | p value |
|--|------------|--------------|--------------|---------|
| <b>Iron deficiency anemia</b>                                      |            |              |              |         |
| Presence of anemia   | 527 (72.8) | 461 (81.9)   | 988 (76.8)   | 0.001   |
| <b>No of times green leafy vegetables was eaten in last 7 days</b> |            |              |              |         |
| I did not eat green leafy vegetables                               | 331 (45.9) | 245 (43.5)   | 577 (44.8)   | 0.697   |
| Once   | 389 (53.7) | 315 (56)     | 704 (54.7)   |         |
| Twice or thrice  | 3 (0.4)    | 3 (0.5)      | 6 (0.5)      |         |
| <b>No of times a fruit was eaten in last 7 days</b>                |            |              |              |         |
| I did not eat fruit in last 7 days                                 | 419 (57.9) | 296 (52.6)   | 715 (55.6)   | 0.065   |
| Once   | 305 (42.1) | 267 (37.4)   | 572 (44.4)   |         |

Figures in parenthesis are percentages

| Categories of BMI   | Male n=712  | Female n=554 | Total n=1266 | p value |
|---|-------------|--------------|--------------|---------|
| Thin (below 5 <sup>th</sup> percentile)                     | 536 (75.3)  | 319 (57.6)   | 855 (67.5)   | 0.001   |
| Normal (5 <sup>th</sup> – 85 <sup>th</sup> percentile)      | 174 ((24.4) | 234 (42.2)   | 408 (32.2)   |         |
| Overweight (85 <sup>th</sup> ≥ 95 <sup>th</sup> percentile) | 2 (0.3)     | 1 (0.2)      | 3 (0.2)      |         |

Figures in parenthesis are percentages

Out of 1287 children, 506 (39.3%) consumed any tobacco product in last one month. About 393 (54.3%) boys and 113 (20.1%) girls consumed any tobacco product in last one month (p=0.001). More boys 118 (16.3%) than girls 60 (10.7%) used dry snuff for teeth cleaning (p=0.003). Among 506 children who consumed any tobacco product in last one month, 279 (55.1%), 164 (32.4%), 63 (12.5%) children consumed *gutka*, dry tobacco, and *kharra* respectively (p=0.002). Significantly more boys and girls preferred *kharra* and dry tobacco respectively (p=0.001). Ten boys (2.5%) had consumed alcohol in last one month. Half of the children said that their father of male guardian consume tobacco products and alcohol. One fourth of children said that their parents and guardian consume tobacco products (Table 5).

**Table 5: Tobacco addiction among examined Ashram school children and addictions among their parents**

| Consumption of tobacco and alcohol             | Male n=724 | Female n=563 | Total n=1287 | p value |
|--|------------|--------------|--------------|---------|
| Consumed any tobacco product in last one month | 393 (54.3) | 113 (20.1)   | 506 (39.3)   | 0.001   |
| Use of <i>nus</i> for teeth cleaning           | 118 (16.3) | 60 (10.7)    | 178 (13.8)   | 0.003   |
| <b>Type of product consumed</b>                |            |              |              |         |
| <i>Kharra</i>                                  | 59 (15)    | 4 (3.5)      | 63 (12.5)    | 0.002   |
| <i>Gutka</i>                                   | 216 (54.9) | 63 (55.7)    | 279 (55.1)   |         |
| Dry tobacco                                    | 118 (30)   | 46 (40.7)    | 164 (32.4)   |         |
| H/O alcohol consumption in last month          | 10 (2.5)   | 0            | 10 (1.9)     | -       |

Figures in parenthesis are percentages

| Guardian                  | Male n=724 | Female n=563 | Total n=1287 | p value |
|---------------------------|------------|--------------|--------------|---------|
| Father or male guardian   | 371 (51.2) | 248 (44)     | 619 (48.1)   | 0.010   |
| Mother or female guardian | 61 (8.4)   | 76 (13.5)    | 137 (10.6)   | 0.003   |
| Both                      | 184 (25.4) | 156 (27.7)   | 340 (26.4)   | 0.354   |

  

| Guardian                  | Male n=724 | Female n=563 | Total n=1287 | p value |
|---------------------------|------------|--------------|--------------|---------|
| Father or male guardian   | 378 (52.2) | 239 (42.5)   | 617 (47.9)   | 0.001   |
| Mother or female guardian | 3 (0.4)    | 1 (0.2)      | 4 (0.3)      | 0.800   |
| Both                      | 1 (0.1)    | 3 (0.6)      | 4 (0.3)      | 0.448   |

Figures in parenthesis are percentages

About 746 (57.9%) children were classified to have sedentary physical activity, where there was 350 (62.2%) girls and 396 (54.7%) boys. About 448 (34.9%) and 93 (7.2%) children were classified to have light and moderate physical activity respectively. (p=0.022). More than half of the children had no physical fight with other children in the school in last one month. Notably, 105 (14.5%) boys and 38 (6.7%) girls had a history of physical fights for two to three times and 54 (7.5%) boys and 16 (2.8) girls had more than five times fights in last one month (p=0.001) (Table 6).

**Table 6: Status of physical activity score and physical fights**

| Physical activity and physical fights    | Male n=724 | Female n=563 | Total n=1287 | p value |
|--|------------|--------------|--------------|---------|
| <b>Quartiles of Physical activity</b>    |            |              |              |         |
| Sedentary (1-17)                         | 396 (54.7) | 350 (62.2)   | 746 (57.9)   | 0.022   |
| Light (18-34)                            | 269 (37.2) | 179 (31.8)   | 448 (34.9)   |         |
| Moderate (35-51)                         | 59 (8.1)   | 34 (6)       | 93 (7.2)     |         |
| <b>Physical fights in last one month</b> |            |              |              |         |
| Never                                    | 398 (54.9) | 303 (53.8)   | 701 (54.5)   | 0.001   |
| One time                                 | 125 (17.3) | 84 (14.9)    | 209 (16.2)   |         |
| 2 or 3 times                             | 105 (14.5) | 38 (6.7)     | 143 (11.1)   |         |
| 4 or 5 times                             | 42 (5.8)   | 22 (3.9)     | 64 (5.0)     |         |
| More than 5 times                        | 54 (7.5)   | 16 (2.8)     | 70 (5.4)     |         |

Figures in parenthesis are percentages

Among 774 children of age 12 years or more, 183 (23.6%) and 34 (4.4%) children felt lonely 'sometime' and 'most of the times' respectively. The feeling of loneliness among boys and girls had similar percentages (p=0.188). During past one month, 108 (13.9%) children and 5 (0.6%) children felt worried and did not sleep on some or most of the time respectively. It was slightly more among

girls ( $p=0.075$ ). About half of the children had one to two or more friends. There was no sex difference. Thirteen (1.7%) children said that they had no close friends. About 398 (94.3%) boys and 342 (97.2%) girls did not know the modes of transmission of HIV/AIDS (Table 7).

| Table 7: Feelings, friendships and knowledge about HIV/AIDS among children (12 years or more) |            |              |             |         |
|---|------------|--------------|-------------|---------|
| Feelings, friendship and knowledge about HIV/AIDS   | Male n=422 | Female n=352 | Total n=774 | p value |
| <b>Feeling of loneliness in past 12 months</b>  |            |              |             |         |
| Never   | 117 (27.7) | 78 (22.2)    | 195 (25.2)  | 0.188   |
| Rarely  | 195 (46.2) | 167 (47.4)   | 362 (46.8)  |         |
| Sometimes   | 90 (21.3)  | 93 (26.4)    | 183 (23.6)  |         |
| Most of the times   | 20 (4.7)   | 14 (4)       | 34 (4.4)    |         |
| <b>During past one month felt worried and did not sleep</b>                                   |            |              |             |         |
| Never   | 194 (46)   | 131 (37.2)   | 325 (41.9)  | 0.075   |
| Rarely  | 174 (41.2) | 162 (46)     | 336 (43.4)  |         |
| Sometimes   | 51 (12.1)  | 57 (16.2)    | 108 (13.9)  |         |
| Most of the times   | 3 (0.7)    | 2 (0.6)      | 5 (0.6)     |         |
| <b>Number of close friends</b>  |            |              |             |         |
| No close friends  | 8 (1.9)    | 5 (1.4)      | 13 (1.7)    | 0.831   |
| One or two  | 211 (50)   | 181 (51.4)   | 392 (50.6)  |         |
| Three or more   | 203 (48.1) | 166 (47.2)   | 369 (47.7)  |         |
| <b>Knowledge about modes of transmission of HIV infection</b>                                 |            |              |             |         |
| Do not know   | 398 (94.3) | 342 (97.2)   | 740 (95.6)  | 0.292   |
| Knows one   | 15 (3.6)   | 6 (1.7)      | 21 (2.7)    |         |
| Knows two   | 7 (1.7)    | 3 (0.9)      | 10 (1.3)    |         |
| Knows three   | 2 (0.5)    | 1 (0.3)      | 3 (0.4)     |         |

Figures in parenthesis are percentages

#### Discussion:

Overall, the status of personal hygiene among Ashram school children was poor. It led to high prevalence of morbidities related to poor personal hygiene. All these can be prevented by simple health education and selective treatment. Teachers found it difficult to recognize minor ailment and treat it. The first aid box was available in all schools but it was poorly maintained. Hence, formal training of teachers regarding health education, first aid and treatment of minor ailment is crucial. A quasi experimental study in rural Wardha had also reported poor status of personal hygiene and its related morbidities among Ashram school children. As a result of teacher driven, school based health education intervention; there was improvement in personal hygiene and reduction of related morbidities.<sup>5</sup> Nayar et al had already reported the teachers' superior role over community health volunteer in imparting health education to school children.<sup>15</sup> A need based, focused, skill based child to child hygiene education could effectively bring behavior change among school children in rural Wardha.<sup>16</sup> Noteworthy, in year 2004, the government of India has started a Total Sanitation Campaign (TSC) and Hygiene Education, which emphasizes skill based child to child health education for behavior change among school going children.<sup>17</sup>

The prevalence iron deficiency anemia among Ashram school children was high, which was more among girls than boys. Its adverse effect on work productivity, mental performance of children and outcome of pregnancy is well documented. In a recent survey of the hemoglobin concentration of school children in Africa and Asia, in five of six African countries, 40% or more schoolchildren aged 7-11 years were anemic. But in the two Asian countries that took part in the survey, Indonesia and Viet Nam, the prevalence was lower at 27% and 12% respectively.<sup>18</sup> The present study found that 76.8% children were anemic. In Philippines, weekly iron supplementation given by teachers could prevent fall in the hemoglobin concentration among school children.<sup>19</sup> Hence, weekly iron supplementation and improvement in variety and quality of diet of the children is necessary. It also requires education of kitchen cook regarding healthy cooking practices and hygiene to be maintained while handling the food items.

About 67.5% children were classified as thin (75.3% boys and 57.6% girls). Other studies in India have reported high prevalence

of malnutrition among school age children and adolescents.<sup>20, 21</sup> Poor nutrition of children not only adversely affects the cognitive development of children, but also likely to reduce the work capacity in future. Hence, urgent steps should be taken to improve the nutritional status of school children. Promotion of proper nutrition is one of the eight essential elements of primary health care. Hence, periodic monitoring of nutritional status of school children is required.

In the present study, the prevalence of tobacco addictions was found to be 39.3% (54.3% boys, 20.1% girls). The consumption of tobacco related products among parents was also high. The source of money for tobacco products were parents. Hence, intense education of parents and children is required. A study from rural Wardha has reported high prevalence of smokeless tobacco consumption among adolescents and their parents and recommended multi-pronged strategy for tobacco control.<sup>22</sup> According to school-based Global Youth Tobacco Survey in Maharashtra, 12.9% adolescents (13-15 years) currently consumed any tobacco products.<sup>23</sup>

The physical activity of the children was found poor. Hence, regular physical training is required. The improvement in nutrition and physical activity of the children need to be addressed together. The schools should formulate and adhere to physical-education and activity requirements and standards. Schools should facilitate changes to increase physical activity and parent teacher associations can help to educate parents as to the dangers of childhood malnutrition. Introduction of 'nutrition and physical education' in the school curriculum with these activities should become compulsory and /or a 'scoring subject' with marks to be added to total grades. The importance of enhancing physical activity and improving the dietary habits from childhood itself has been emphasized, as the major step towards prevention of Non Communicable Diseases (NCDs).<sup>24</sup>

Ashram schools are residential school for children. Hence, along with the physical health status of children their emotional needs and their capacity to adjust in school environment are also important. Ashram schools have the posts of superintendents (One male and one female) of Masters in social work background. Hence, building the counseling skills of school superintendents to encourage community involvement, encourage group activity, health education and development of skills such as conflict management, stress management and interpersonal skills. Recently, WHO has taken up an initiative of Health Promoting Schools which emphasize integration of educational officials, teachers, students and parents to promote health in the schools. It also envisioned formation of school health committee at school level and strengthen Parent teacher association, provision of safe and healthy environment, skill based education, access to health care and health promoting policies.<sup>4</sup> In India, the responsibility of school health program was given to primary health centre who considered it as extra burden. Hence, the program is non-existent and its implementation requires political commitment.<sup>25</sup>

In conclusions, there was high prevalence of risk factors for both communicable and non-communicable diseases in Ashram school environment such as poor personal hygiene, high prevalence of related morbidities, iron deficiency anemia, malnutrition, tobacco addictions, poor physical activity and poor awareness of HIV/AIDS. This dictates the urgent need for teacher driven, need based and school based intervention that can screen and identify potentially preventable health conditions among underprivileged Ashram school children in rural Wardha.

#### Acknowledgements:

The authors are thankful to World Health Organization (India Country Office) for providing financial assistance to the study under APW IND FFA 00108.

## References:

1. Das AR, Naidu RVK, Sreedhar N. Who joins Ashram schools? (A study of Ashram schools in Karnataka). *Anthropologist* 2003;5(3):155-159.
2. Government of India. Initiatives towards specific segments of the society: Education of scheduled castes & scheduled tribes. 2005. [Online]. [cited on 3 January 2009]; Available from URL: [http://india.gov.in/sectors/education/edu\\_scheduled\\_castes.php](http://india.gov.in/sectors/education/edu_scheduled_castes.php)
3. Government of Maharashtra. Tribal department. [Online]. [cited on 3 January 2009]; Available from URL: [www.maharashtra.gov.in/english/tribal/education.htm](http://www.maharashtra.gov.in/english/tribal/education.htm)
4. Global School Health Initiative. 2009. [Online]. [cited on 6 January 2009]; Available from URL: [http://www.who.int/school\\_youth\\_health/gshi/en/](http://www.who.int/school_youth_health/gshi/en/)
5. Dongre AR, Deshmukh PR, Garg BS. The impact of school health education programme on personal hygiene and related morbidities in tribal school children of Wardha district. *Indian J Comm. Med.* 2006;31(1):81-82.
6. Preparing a SWOT (Strength, Weaknesses, Opportunities and Threats) analysis: Suggested guidelines. [Online]. [cited on 3 January 2009]; Available from URL: [www.himss.org/content/files/SWOTAnalysis.pdf](http://www.himss.org/content/files/SWOTAnalysis.pdf)
7. Training in Participation Series [PRA tips on CD-ROM]. Patna (India): Institute for Participatory Practices; 2004.
8. Dawson S, Manderson L, Tallo VL. The focus group manual: Methods for social research in disease. Boston: International Nutrition Foundation for Developing Countries (INFDC); 1993.
9. Introduction to school health. [Online]. [cited on 6 January 2009]; Available from URL: [www.whoindia.org/LinkFiles/Health\\_Promotion\\_intro\\_frame01.pdf](http://www.whoindia.org/LinkFiles/Health_Promotion_intro_frame01.pdf)
10. Global School-based Health Survey. 2009. [Online]. [cited 6 January 2009]; Available from URL: <http://www.who.int/chp/gshs/methodology/en/index.html>
11. World Health Organization. Iron deficiency anemia. Assessment, Prevention, and Control: A guide for programme managers. 2001. [cited 12 August 2008]; Available from URL: [www.who.int/reproductive-health/docs/anaemia.pdf](http://www.who.int/reproductive-health/docs/anaemia.pdf).
12. Physical status: The use and interpretation of anthropometry. Technical report series. Geneva: World Health Organization; 1995. Report No.: 854.
13. Ramachandran A, Snehalatha C, Baskar AD, Mary S, Kumar CK, Selvam S, Catherine S, Vijay V. Temporal changes in prevalence of diabetes and impaired glucose tolerance associated with lifestyle transition occurring in the rural population in India. *Diabetologia* 2004;47:860-865.
14. Donald R. 15 methods of data analysis in qualitative research. [Online]. [cited 12 December 2008]; Available from URL: <http://qualitative-research.ratcliffs.net/15methods.pdf>
15. Nayar S, Singh D, Rao NP, Choudhury DR: Primary school teacher as a primary health care worker. *Indian J Pediatr.* 1990; 57(1):77-80.
16. Dongre AR, Deshmukh PR, Boratne AV, Thaware P, Garg BS. An approach to hygiene education among rural Indian school going children. *Online J Health Allied Scs.* 2007;4:2. Available at <http://www.ojhas.org/issue24/2007-4-2.htm>
17. Ministry of rural development. Government of India. Total Sanitation Campaign: Guidelines [Online]. 2004 [cited on 5 Nov. 2007]; Available from URL: <http://www.ddws.nic.in/NewTSCGuidelines.doc>
18. Partnership for Child Development. Anaemia in schoolchildren in eight countries in Africa and Asia. *Public Health Nutrition* 2001;4:749-756.
19. Roschnik N, Parawan A, Baylon MA, Chua T, Hall A. Weekly iron supplements given by teachers sustain the haemoglobin concentration of schoolchildren in the Philippines. *Tropical Medicine and International health* 2004;9(8):904-909.
20. Medhi GK, Barua A, Mahanta J. Growth and nutritional status of school age children (6-14 years) of Tea garden worker of Assam. *J. Hum. Ecol* 2006;19(2):83-85.
21. Deshmukh PR, Gupta SS, Bharambe MS, Dongre AR, Maliye C, Kaur S, Garg BS. Nutritional status of adolescents in rural Wardha. *Indian Journal of Pediatrics* 2006;73:139-141.
22. Dongre AR, Deshmukh PR, N Murali, Garg BS. Tobacco consumption among adolescents in rural Wardha: Where and how tobacco control should focus its attention? *Indian Journal of Cancer*, July-September 2008;Vol. 45(3).
23. Global Youth Tobacco Survey (GYTS) Fact sheet: South-East Asia Regional Office (SEARO) [Online]. [cited on 15 March 2008]; Available from URL: <http://www.cdc.gov/tobacco/Global/GYTS/factsheets/searo/factsheets.htm>
24. Ramachandran A, Snehalatha C. Prevention of childhood obesity should be an integral part of prevention of non communicable diseases. *Indian J Med Res* 2008;127:514-515.
25. Kishore J. National Health Programs of India. 5<sup>th</sup> ed. New Delhi (India), Century Publications; 2005. p. 274-279.