MATERIAL
AND
METHODS
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The present study is an attempt to ascertain the health status of primary school children of Jhansi city. Four school were selected following cluster sampling from the Jhansi city.

Plan of study

Selected schools were two Government schools namely (Basic D.C. Talpura & Arya Kanya Inter College, primary section) and two convent schools (Christ the King and Kendriya Vidhyalaya No-II)

1. Basic D.C. school, Talpura – is located is Talpura area of Jhansi city which is densely populated and inhabited by deprived classes of the community. The school is located in crowded area, near public health hazards. It is just off the Jhansi-Kanpur Highway which has heavy traffic. The total number of students from class I to V were 524.

2. Arya Kanya Inter College – It is located in a busy resident cum market area of Sipri Bazar, Jhansi. The area is thickly populated with dust and other nuisance. The total strength of the school from class I to V is 238.

3. Christ the King Primary School – This is behind the District Jail. School is located in sanitary surrounding away from traffic, noise, market, factory etc. Total strength of the school from class I to V is 1500.

4. Kendriya Vidhyalaya No.II – This is located in open ground in Cantonment Board of Jhansi. It is located in open field with sanitary surrounding. The total children studying from class I to V was 735.
Selected school children of age group 5-11 years, during the study period, attending the various school of Jhansi, comprised the study material. Only 840 children could be examined after repeated survey, 453 from municipal schools and 387 from convent schools. The study was conducted in the school itself during working hours and a detailed pretested structured schedule concerning socio-demographic profile, immunization status, anthropometric measurement, personal hygiene and morbidity patterns of primary school children had been filled in separate child proforma (Appendix-I).

**Period of study:** The survey work was started in July '98 and was completed within 12 months.

**Pilot study:** A pilot study was carried out to test the individual schedule and schedules were modified according to experience thus gained.

**Determination of Sample Size:**

In a field survey to estimate the prevalence rate of disease the sample size is calculated by the formula -

\[ N = \frac{4PQ}{L^2} \]

where \( N \) = required sample size

\( P \) = the approximate prevalence rate of disease

\( Q = 1-P \) and

\( L \) = the permissible error in the estimate of \( P \)
average reported prevalence rate of ascariasis is about 40% then the sample size required to estimate the prevalence rate of ascariasis with 10% error is calculated as follows.

\[
P = 40%
\]

\[
Q = 100 - 40 = 60%
\]

\[
L = 10\% \text{ of } 40\% = 4
\]

\[
M = 4 \times 40 \times 60 / (4)^2 = 4 \times 40 \times 60 / 16 = 600
\]

Thus 600 children were required to be examined to estimate the ascariasis positively rate with an error of 10%.

It was decided that 4 different schools of Jhansi city – two municipal schools and two convent school would be adequate to cover this no. of children.

**Methodology:**

The age of the children were estimated on the basis of their date of birth as recorded in the school admission register. Information was collected regarding socio economic status from the school records and accordingly the social class of sample group was determined by modified Prasad classification (1991) of Socio-economic scale.

The information regarding caste, religion, size of family and education and occupation of their parents were obtained by interviewing the child.
Regarding personal hygiene each child was examined for the cleanliness of their hair, mouth, teeth, ears, clothing, footwear and their bathing and ablution habits. An enquiry was made to find out any disease condition, their nature, duration and treatment for the same.

Detailed medical history was taken, followed by general, physical and systemic examination. An attempt was made to detect the signs of any specific vitamin deficiency and general malnutrition.

Dental examination was carried out and presence of dental caries, malocclusion, mottled enamel and disease of gums like spongy and bleeding gums were taken into account. Examination was carried out for signs of adenoids, tonsillitis, otitis media and sinusitis. Thyroid gland was examined to find out any abnormality. Eyes were examined for any signs of trachoma, conjunctivitis, stye, ptosis, squint and congenital anomalies.

Systemic examination was done including respiratory system, cardiovascular system, central nervous system and gastrointestinal system. Vision was tested by means of standard chart.

For hearing ability, the whisper test was used to note any defect in hearing. For speech the child was asked to say familiar words and simple sentences. The child was asked to questions like whether he sucks his thumb and does he bites his nails or wet his bed.

Nutritional status of children was assessed on the basis of weight for age and weight for height measures and were compared with ICMR standards. Anthropometric measurements like height, weight and mid arm
circumference were recorded as per standard methods (Jelliffe, 1966). Height was measured by using vertical measuring scale to the nearest 0.5 cm. Mid arm circumference was measured while left arm hanging freely at its mid point (between acromian process of scapula and olecranon process of ulna). The arm circumference is measured to the nearest 0.1 cm with a fibre glass tape, which was placed gently, but firmly, round the limb to avoid compression of soft tissue.

Level of intelligence of children was tested by Bharat Raj Method. The purpose of this test was to measure mental development of child and the test provides for a brief and fairly dependable assessment without requiring the use of performance tests.

Testing was done by semistructured interview with a teacher well acquainted with the child. The test was administered individually in a room free from any extraneous disturbance. The items included in the schedule stand for discrete and discernible behavioural characteristics representative of respective age levels. At each age level, items are drawn from behavioural fields like motor development speech – language development and personal – social development. Having obtained the mental age (MA) the IQ calculator was used. The derived mental age was synchronised with the actual age of the child and IQ was directly read off from the slit. Distribution of scores and its interpretation based on obtained IQs is given.

The categories are mentally defective (65-74), border line (75-80), dull normal (81-90), average (91-110), bright normal (111-114), superior (120-125) very superior (125-130).

The data of IQ was then analysed in relation to nutrition and various socio-economic factors influencing the intelligence.
Blood sample could not be collected because school authorities had refused for this. Serially numbered small bottles were distributed to children for collection of stool samples. Examination of samples were done to detect the presence of ova and cysts of parasites.

All the school were studied for school environment including location, site, class room, furniture, water supply, eating and lavaratory facility etc. Inquiry was made regarding school health programme including health record, mid day meal, periodic medical examination, health education, health services, first aid and emergency care.

Data so obtained from the study was subjected to critical statistical analysis, which consisted of examining possible associations of health status of children studied with various socio-economic and school environments and other factors. Difference between municipal schools and convent schools were examined statistically.