Prevalence of goitre among school going children in urban area of Dehradun

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Received: 21 November 2014
Accepted: 8 December 2014

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ABSTRACT

Background: Iodine is an important micro-nutrient required for human nutrition. Iodine Deficiency Disorders (IDDs) are one of the major world-wide public health problems of today which causes wide spectrum of disabilities. It includes impairment of reproductive functions, lowering of IQ levels in school age children, goiter, deaf mutism, mental defects, weakness and paralysis of muscles as well as lesser degree of physical dysfunction.

Methods: Selection of population: The school children in age group of 6-18 years from both the sexes were screened from SGRR Schools of different locations at Dehradun, after taking approval from principal and the parents.

Results: The prevalence of goitre among school going children was 5%. Prevalence of goitre among female was 6.4% compare to male were 4.1%. There was significant association found between prevalence of goitre and vegetarian diet. In pre pubertal age (11-14 years) maximum (7.6%) cases of goitre were seen. A significant association of goitre with pallor was also observed

Conclusion: The sustained efforts in implementing the guidelines of National Iodine Deficiency Disorders Control Programme (NIDDCP) have been able to reduce the prevalence of goitre in Uttrakhand state. In spite of reduction in prevalence over years, goitre continues to be a major public health problem in the state.

Keywords: Prevalence, Goitre, School children

INTRODUCTION

Iodine is an important micro-nutrient required for human nutrition. Iodine Deficiency Disorders (IDDs) are one of the major world-wide public health problems of today which causes wide spectrum of disabilities. It includes impairment of reproductive functions, lowering of IQ levels in school age children, goitre, deaf mutism, mental defects, weakness and paralysis of muscles as well as lesser degree of physical dysfunction. Many studies conducted all over India had shown high prevalence of goitre. In an attempt to eliminate iodine deficiency and to comply with the international goal of Universal Salt Iodization (USI), compulsory iodization of all table salts was introduced in India in 1983.

In June 1992 the national goitre control programme was appropriately redesigned as “National Iodine Deficiency Disorders Control Programme (NIDDCP)”, in recognition of the spectrum of disorders due to iodine deficiency.
**Objectives**

To evaluate the prevalence of goitre in school going children

**METHODS**

Selection of population: The school children in age group of 6-18 years from both the sexes were screened from SGRR Schools of different locations at Dehradun, after taking approval from principal and the parents. Each child was given a reference number and a questioner. Performa was given on prior day to the class teacher to fill it by parents and teachers them self. Next day the enrolled students were examined in OPD by a specialist and complete the performa.

**RESULTS**

Table 1 shows the prevalence of goitre in school going children in our study was 5%. Total no. of children were 1278 including both male and female out of which 64 were having goitre.

<table>
<thead>
<tr>
<th>Goitre</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>64</td>
<td>05.0</td>
</tr>
<tr>
<td>No</td>
<td>1214</td>
<td>95.0</td>
</tr>
<tr>
<td>Total</td>
<td>1278</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 3 shows out of 1278, 518 (40.5%) were female and 760 (59.5%) were male child and out of 518 female 33 (6.4%) and out of 760 male 31 (4.1%) were having goitre.

**DISCUSSION**

In our present study was conducted among 1278 school going children of Dehradun district of Uttrakhand. In age b/w 6-18 years we found that goitre prevalence was 5% however other studies across India showed a prevalence...
that ranged from 2.4% to 30% in different geographical area.

In a study done by T. Sahu et al.\textsuperscript{1} from Kandhamal district in Orissa. The goitre prevalence was 30.18% among 1448 school going children of aged 6-12 years.

In a study at Kulgam district Jammu & Kashmir, by S. Mohammad Salim Khan et al.\textsuperscript{2} The goitre prevalence was 18.9% among 2700 school going children of aged 6-12 years. In a similar study done by R. K. Gakkhar et al.\textsuperscript{3} from Jabalpur, (M. P.) goitre prevalence was 2.4% (26/1205) among school going children of aged 6-12 years.

In our present study females were found to have higher prevalence 33/518 (6.9%) then males 31760 (4.1%), however difference was not statistically significant.

In a study done by R. K. Gakkhar et al.\textsuperscript{3} Girls higher prevalence (3.2%) then boys (1.6%) however the difference was statistically not significant. In a study at Kulgam district, Jammu and Kashmir India shows higher prevalence among boys 21.2% than girls 16.7%.

In our study the prevalence of goitre is maximum among age group 11 to 14 years 56 (7.4%)/750 followed by 5 (2.6%)/190 between 15-18 and 3 (0.9%)/ 338 between 7-10 years of age group. There was strong statistically association in pre pubertal age group (11-14 years).

In study done by Ramesh et al.\textsuperscript{5} shown similar findings, the prevalence of goitre was maximum between age group 10-12 years (12.3%).

In present study the children predominately on vegetarian diet were found higher prevalence 9.8% (50/511) as compare to non-vegetarian diet 1.9 % (147/67). There is a strong statistically significance found in children who are on predominant vegetarian diet.

In a similar study by Ramesh et al.\textsuperscript{5} at Kottayam district Kerala 600 school going children of 6-12 years age groups found higher prevalence of goitre among vegetarian 11.4% (49/429) as compare to non-vegetarian diet 5.8% (10/171).

**CONCLUSION**

The sustained efforts in implementing the guidelines of National Iodine Deficiency Disorders Control Programme (NIDDCP) have been able to reduce the prevalence of goitre in Uttrakhand state. In spite of reduction in prevalence over years, goitre continues to be a major public health problem in the state. There may be some other reasons responsible for goitre prevalence other than low iodine intake example environmental goitrinogens which needs further study.

**Funding:** No funding sources

**Conflict of interest:** None declared

**Ethical approval:** The study was approved by the institutional ethics committee

**REFERENCES**


DOI: 10.5455/2320-6012.ijrms20150135