

# Awareness of Non-communicable diseases and their Risk Factors among Adolescents: A Comparative Questionnaire Study

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## Abstract

**Background:** Non-communicable diseases are also known as chronic diseases. The burdens of non-communicable diseases are increasing day by day. Disability and early death are the results, which are turning out to be the biggest concern for health in the world. The purpose of the study was to assess the awareness of non-communicable diseases and their risk factors among adolescents studying in selected high schools at Mangaluru. **Methods:** A comparative descriptive research design was adopted for this study. The sample was drawn through a simple random sampling technique and the sample consisted of 120 (60 each) urban and rural adolescents. The tool used for the study was a demographic proforma and structured knowledge questionnaire. **Conclusion:** The mean percentage of the awareness scores among urban adolescents was 60.31% when compared to rural adolescents 43.06%. There was a significant difference in the level of awareness on non-communicable diseases and its risk factors between urban and rural adolescents that is, the calculated t value ( $t_{118}=25.55$ ) is greater than the table value ( $t_{118}=1.98$ ) at a 0.05 level of significance. The findings of the study suggest that schools should play an active role and on another side parents need to provide a supportive environment for their children to adopt a healthy lifestyle.

**Key words:** Adolescents, Awareness, Non -communicable diseases, Rural, Urban

## Introduction

India has the largest national population of adolescent's is 243 million, accounts for almost 20% of the country's population. Thus, having more than 243 million adolescents is the key challenge that India faces in ensuring the nutritional, health, and educational needs of this population.<sup>1-2</sup> The term adolescence is referred to the lifespan between 10 to 19 years. This is a phase of rapid changes in body size, physiological, psychological, and social functioning. This phase is commonly thought of as a period of optimum health.<sup>2-4</sup> But in the present-day scenario, there is an increase in the range of adolescent health problems<sup>2</sup>. The global tsunami of non-communicable diseases (NCDs) has swept across all age groups, including children and adolescents. However, the young age group affected by NCDs is often under-recognized.<sup>2-3</sup>

The current health scenario worldwide is facing the major public health challenge of Non-communicable diseases<sup>5</sup>. Mortality, morbidity, and disability due to major NCD account for about 60% of all deaths and 47% of the global burden of disease<sup>6</sup>. *NCDs are responsible for approximately 1.2 a million deaths worldwide each year in the age group below 20 year*<sup>2-6</sup>. In South Asia, half of the disease burden is attributable to NCD<sup>5</sup>. India, too, is caught in the midst of a transition from the burden of communicable diseases to the burden of NCDs. An estimated 9.2 million productive years of life were lost in India due to CVD in 2000, with an expected increase to 17.9 million years in 2030<sup>4-7</sup>. India has a higher number of people with diabetes than any other country, with estimates ranging from 19.4 million in 1995 to 32.7 million in 2000<sup>8-9</sup>. India is also in the forefront with regard to the number of cancers patients<sup>10-11</sup>.

NCD affects the most productive midlife period and thus negatively influences workforce productivity and economic development<sup>12-15</sup>. The major risk factors for the NCD are associated with lifestyle and behavioral patterns, which are largely a result of practices adopted from young age itself<sup>16-18</sup>. Thus, any attempt at reducing the incidence of NCD should include in its fold children too, as they are at an impressionable age and can be motivated to make appropriate healthy modifications and in turn they can influence the community at large<sup>19-20</sup>.

## Materials and Methods

A comparative descriptive research design was adopted for this study. The sample was drawn through simple random sampling technique and sample consisted of 60 each urban and rural (120) adolescent studying in selected high schools at Mangaluru.

### Sampling criteria

#### Inclusion criteria

Students who are:

- Adolescent girls and boys age between 13 to 16 years.
- Able to read, write and understand English and Kannada language

#### Exclusion criteria

Students who are:

- Not available during data collection period.
- Not willing to participate in the study.

Sample is selected through simple random sampling method. The tool used for the study consists of demographic variables like age, gender, standard of studying, type of family, place of stay; presently residing, occupational status of father and mother, family income, number of siblings and family history of NCDs, and structured knowledge questionnaire on NCDs and its risk factors was developed by the investigator used to collect

data. The internal consistency, reliability of the tool was computed using spilt half method using Spearman Brown prophecy formula. The reliability was found to be 0.93. The data collection period extended from 5th September to 17th September 2019. The investigator explained the purpose of the study and requested the participants' full cooperation and assured the confidentiality of the data. Written consent was taken from the parents and assent was obtained from subjects. Participants cooperated well during the time of data collection process. Formal written permission was obtained from the authorities to conduct the study. Data collected from the sample were analyzed using descriptive and inferential statistics using SPSS version 23.

## Results

### Section I: Sample characteristics

Most (66.7% and 99.1%) of the urban and rural adolescents were belong to the age group of 13-14 and the rest to the age group of 15-16 years. With respect to the gender, most of the urban and rural adolescents 58.3% and 53.3% were males. It is observed that more than half 70% and 63.3% of urban and rural adolescents were from nuclear family. With respect to the place of stay, most 95% and 91.6 % of the urban and rural adolescents were staying at home. With respect to residential area both in urban and rural school adolescents most of them were from rural area 63.3% and 65% respectively. With regards to family income, in urban and rural 50% and 41.7% of the adolescents were having an income of above Rs. 5000 per month. It is observed that majority of parents of adolescents in both rural and urban area were working, With regards to family history of non-communicable diseases 31.7% in urban and 11.7% in rural adolescent family is having history of non-communicable diseases

### Section II and III: Assessment of the awareness score of NCDs and its risk factors among urban and rural adolescents.

**Table 1 Awareness score of NCDs and its risk factors among urban and rural adolescents  $n_1=60, n_2=60$**

AREA	MEAN	SD	MEAN%
URBAN	28.95	1.395	60.31
RURAL	19.76	2.088	43.06

$n_1=60, n_2=60$   $n_1$ -urban sample size,  $n_2$ -rural sample size SD-standard deviation

Table 1 show that means percentage of urban adolescents is 60.31% and rural adolescents are 43.06%. This shows that the awareness of rural adolescents was consistently lower than the urban adolescent’s awareness scores on NCDs and its risk factors.

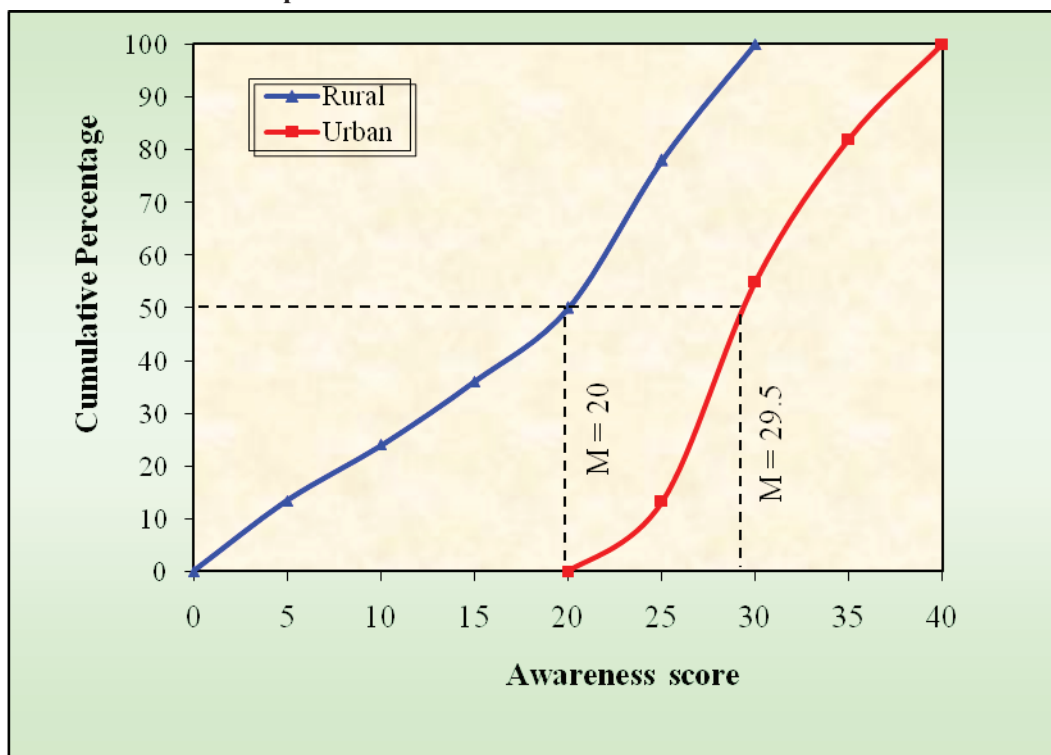
**Table 2: Overall of awareness scores of rural and urban adolescents**

**$n_1=60, n_2=60$**

Grading	Rural		Urban	
	Frequency	Percentage	Frequency	Percentage
Poor knowledge	18	30	11	18.33
Average knowledge	25	41.6	12	20
Good knowledge	17	28.4	37	61.6
Excellent knowledge	0	0	0	0

The data presented in Table 2 depicts that in urban majority 61.6% of the subjects have good awareness whereas in rural adolescents 41.6% of them are have only average knowledge.

**Section IV: Comparison of awareness scores of rural and urban adolescents**



**Fig 1 O-give comparing the awareness scores of rural and urban adolescents**

The data presented in Figure 1 shows that the awareness of rural adolescents was consistently lower than the urban adolescent's awareness scores on NCDs and its risk factors.

The difference in the rural and urban adolescent's awareness score is shown by the distance separating the two curves. The difference between the rural median

is (20) and urban median is (29.5) indicates more awareness among urban adolescent's students than of rural adolescents

Section V: Significant difference between the awareness scores of urban and rural adolescents regarding NCDs and its risk factors

**Table 3 Significant difference between the awareness scores of urban and rural adolescents**

$n_1=60, n_2=60$

AREA	MEAN	SD	Mean difference	't' value	p value
URBAN	29.5	1.395	9.5	25.55*	p< 0.003
RURAL	20	2.088			

$t_{118}=1.98, p<0.05$  \* Significant

It is evident from the data presented in Table 3 shows that the calculated t value ( $t_{118}=25.55$ ) is greater than the table value ( $t_{118}=1.98$ ). The mean difference between the awareness scores of urban and rural adolescences is a true difference at  $p< 0.05$  level of significance.

Section VI and VII: Association of awareness scores between urban and rural adolescence with selected demographic variables

There is significant association of the awareness scores of rural adolescents with selected demographic variables such as education, presently residing and family history of NCDs is significant at  $p< 0.05$  level. But there is no significant association of the awareness scores of urban adolescents with selected demographic variables at  $p< 0.05$  level.

### Discussion

Most (66.7% and 99.1%) of the urban and rural adolescents were belong to the age group of 13-14 and the rest to the age group of 15-16 years.

The above findings are consistent with a study conducted to assess the knowledge regarding risk factors of non-communicable diseases among adolescents. The study finding revealed that 80% of the adolescents were

aged between 13 to 16 years<sup>17</sup>.

The awareness regarding Non-communicable diseases and its risk factors are more in urban adolescents than in rural adolescents with mean percentage of urban adolescents is 60.31 % and rural adolescents is 43.06 %

The above findings are consistent with a study conducted at RHTC to assess the Knowledge regarding communicability of these lifestyle diseases and awareness of non-communicable diseases. The study results showed that only 0.3% had good level of knowledge regarding the lifestyle risk factors and awareness of risk factors of non-communicable diseases and knowledge regarding prevention aspects of NCDs was also low among rural school children<sup>16</sup>.

### Conclusions

A school should play an active role in imparting knowledge regarding NCDs and its risk factors. On another side parents need to provide more support, care and help their children to adopt healthy lifestyle in order to keep away these chronic diseases.

**Limitations:** The study was limited to adolescents from selected two schools from the rural and urban area. This study was only given information pamphlet to

adolescents in order to improve their awareness about NCDs.

**Authors' Contribution:** All authors contributed to the study conception and design and material preparation. Data collection performed by (Ms. Athira Bhaskaran<sup>1</sup>, Ms. Juniya Thomas<sup>1</sup>, Ms. Roselin Sumesh<sup>1</sup>, Mr. Kevin Rodrigues<sup>1</sup>) and analysis. The first draft of the manuscript was written by (Mrs. Shycil Mathew<sup>2</sup>) and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

**Disclosure of potential conflicts of interest:** The authors declare that they have no conflict of interest

**Ethics approval:** This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Yenepoya Ethics Committee-1 Yenepoya (deemed to be university) of Mangaluru.

**Consent to participate:** Written informed consent was obtained from the parents and written assent was obtained from adolescent students.

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