

Assessment of the Impact of Structured Education on Health Screening Services among School Children in Chitradurga

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ABSTRACT

Introduction: Adolescence is a receptive time period in the life time of an individual. Lifestyle habits are usually developed during this age. Therefore, inadequate knowledge and careless attitude of children towards health causes real havoc in future. This could be taken care of by providing them education regarding lifestyle diseases, their prevention and health screening services.

Objectives: This study aims to assess and improve the knowledge and attitude of students on lifestyle diseases, their prevention and their respective health screening services by providing education.

Materials and Methods: A community based prospective interventional study in selected schools of Chitradurga over a period of 6 months. The subjects include adolescent students (between 12-16 years). Demographics of the students were collected using designed data collection form. Other relevant data were collected by interaction with student. The questionnaires were provided to assess the knowledge and attitude of students.

Results: Total 254 students were enrolled for the study of which 52.4% and 47.6% were females and males respectively. 52.4% were students of 9th standard and 42.6% were of 8th standard. Majority of the students were 14 year old. The knowledge of students have shown improvement after the structured education with mean values of 7.73 ± 2.90 and 16.09 ± 2.74 in pre and post tests respectively.

Conclusion: The study concludes that health education improves the awareness and attitude of adolescents towards lifestyle diseases, their prevention and early detection and inculcates in

them a feeling of need for maintaining a healthy lifestyle.

Key words: Health screening services, knowledge, attitude, adolescence, lifestyle diseases, health education

INTRODUCTION

Screening could be defined as “the search for unrecognized disease or defect by means of rapidly applied tests, examinations or other procedures in apparently healthy individuals.”^[1] It was a rapidly growing and widely accepted practice in health care during the twentieth century. Proponents of screening programs stress that in addition to the potential of early disease detection (secondary prevention), they also provide the opportunity for screening participants to change unhealthy lifestyles through lifestyle counseling (primary prevention). In such a setting, screening does not reduce the likelihood of a certain disease; however, it may reduce its negative consequences.^[2]

The current health scenario worldwide is facing the major public health challenge of Non-communicable diseases (NCDs) like Cardio vascular diseases, Hypertension, Diabetes and chronic pulmonary diseases. Mortality, morbidity, and disability due to major NCD account for about 60% of all deaths and 47% of the global burden of disease. India is caught in the midst of 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. 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.^[3] This confirms earlier findings that non-communicable diseases are emerging as a major killer in the developing countries as well.^[4]

Representing a growing threat to national and global health as well as social and economic development, these diseases are increasingly recognised by governments and non-government organisations (NGOs) as a chronic global epidemic.^[5] The United Nations gears up to support national efforts to address NCDs as a result of which, the World Health Organisation (WHO) has launched an Action plan focusing on prevention and control of NCDs From 2013-2020.^[6]

Self care and disease prevention are important pieces of the health system of the future. Emergence of self-management programs for consumers and the consequent role of health professionals will shape future functions of health care providers. Encouraging the adoption and maintenance of healthy lifestyle behaviours and improving the detection and management of various diseases can make a significant impact on current health care practices and expenditure.^[7] Knowledge about the value of early diagnosis and treatment, based on sound scientific studies, needs to be spread to the community. Thus it is accepted that education of the public is essential.^[8]

Health promotion enables people to gain better control and improve their health and overall well-being and could be conducted in the form of health screening, public lectures and disease management advice.^[7,9] An important aspect of health promotion is community action and participation through health education which encourages socioeconomic and cultural activities, and improves environmental determinants of health. Through self-care advocacy, patients are

becoming increasingly aware of various disease conditions which affects the quality of life and self-care management steps required to improve adherence or humanistic outcomes.^[9] It is the combination of extensive counseling and screening which radically increases patient satisfaction and enhanced health outcomes.^[10] Population-wide policies and interventions are more effective than clinical approaches at an individual level, which are also more expensive. This approach lowers risks and provides an enabling environment for the adoption of healthier behaviours.^[11]

The major risk factors for the NCDs are associated with lifestyle and behavioral patterns, which are largely a result of practices adopted from young age itself. 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.^[3]

The key to promoting health in children of school age and adolescents is education. The best opportunities for positively influencing the health of this age group are found in the school. A WHO Expert Committee on Comprehensive School Health Education and Promotion noted in 1995 that promoting health through schools could simultaneously reduce common health problems; increase the efficiency of the education system; and thus advance public health, education, social and economic development.^[12]

The knowledge, attitude and health beliefs of individuals can play a critical role in disease control. Therefore, it is necessary to quantify awareness, knowledge, attitude and health behaviours regarding life style diseases and importance of their screening. This information may help shape health care policy, education and research aimed at reducing the consequences of the common lifestyle diseases.^[13]

The objectives of this study was to assess and improve the knowledge and

attitude of children about health screening services, to educate school going children about lifestyle diseases and their prevention and to assess the impact of health screening education in their practices.

METHODOLOGY

Study design: A community based prospective interventional study.

Study site: The study was conducted at selected schools in Chitradurga.

Study period: The study was carried out for a period of six months.

Inclusion Criteria:

- High school students in 8th and 9th standards.
- Students of both genders.

Exclusion Criteria:

- Students who are not regular to classes.

Ethical approval: The study was approved by the Institutional Ethical Committee of SJM College of Pharmacy, Chitradurga.

Vide number: SJMCP/IEC/PHARM D/01/17-18

Sources of data:

Demographics of the students was obtained and documented in suitably designed student data collection form.

Study procedure:

This is a prospective, interventional study carried out for a period of six months. This study was carried out in selected schools in Chitradurga city after obtaining the ethical clearance from Institutional Ethics Committee. Before carrying out the study, prior permission was taken from head of the institution, by explaining the details of study and its importance. Students were selected from 8th and 9th grade. And informed consent was obtained from each of them. The data was collected from students in a

suitably designed student data collection form. The questionnaires were answered by the students at the beginning as a baseline, and then follow up was done. The knowledge questionnaires were closed end type and attitude questions were open end type. Each correct answer was given a score of 1 (one) and wrong answer was given a score of 0 (zero). The students were educated regarding lifestyle diseases like Hypertension, Diabetes, Obesity and common airway problems, their prevention and health screening services by means of powerpoint presentation and black board. The assessment of knowledge and attitude regarding health screening services was done at each level followed by comparison of knowledge gained between the baseline and follow up.

Statistical analysis: The collected data was compiled and entered in WPS Spread Sheet. The results were analysed using Statistical Package for Social Services (SPSS 19.0). Level of significance in the assessment of knowledge was defined using paired t-test. $p < 0.05$ is considered significant. The results for the attitude questions are illustrated graphically.

RESULTS

1. Distribution according to school

We have selected three schools, as shown in Table no. 1. The total strength of the students present at the time of enrollment was 266. Out of 266 students, 254 students completed the study and 12 students dropped out. For further analysis, the data of 254 students were considered. Out of 254 students, 88 (34.7%), 110 (43.3%), and 56 (22%) are from Bapuji Public School, Don Bon School and SJM Schools respectively.

Table No. 1: Distribution of students enrolled in the study (n=254)

Name of Schools	Total no. of students participated in the study	Total no. of students participated in completed study	Percentage (%)
BPS	97	88	34.7
DBS	111	110	43.3
SJM	58	56	22
Total	266	254	100

2. Details of gender wise distribution of students

Out of 254 students included in the study, 121 (47.6%) were males and 133 (52.4%)

were females. The results are shown in Table No. 2.

Table No. 2: Distribution according to Gender (n=254)

Genders	Frequency	Percentage (%)
Male	121	47.6
Female	133	52.4

3. Distribution of students according to Age Group

Out of 254 students, 1(0.3%) was at the age of 12, 45(17.7%) were at the age of 13, 157 (61.9%) were at the age of 14, 48 (18.9%) students were at the age of 15 and 3 (1.2%) were at the age of 16 year.

4. Details of assessment of knowledge regarding health screening services and diseases

The result shows that the knowledge scores of adolescents at post - test is greater than that of the pre-test. It is statistically shown with a highly significant p- value of <0.001. As shown in Figure no. 1, the mean score in the knowledge assessment of students in the pre-test is 7.73. The mean score elevated to 16.09 in the post-test of knowledge assessment with highly significant p- value of <0.00.

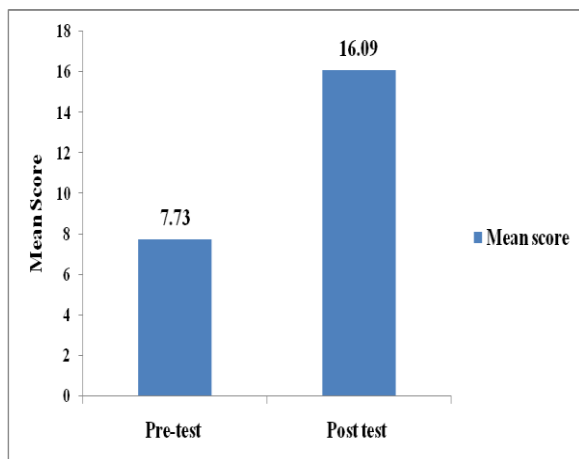


Figure No. 1: Comparison of knowledge- Overall mean score:

5. Response for what is health screening

For the question on what is health screening services, in the pre-test, out of 254 students, 39 students gave a relevant response while 139 students gave irrelevant responses. In the post-test, 213 students gave a relevant

response while 41 students gave irrelevant answers.

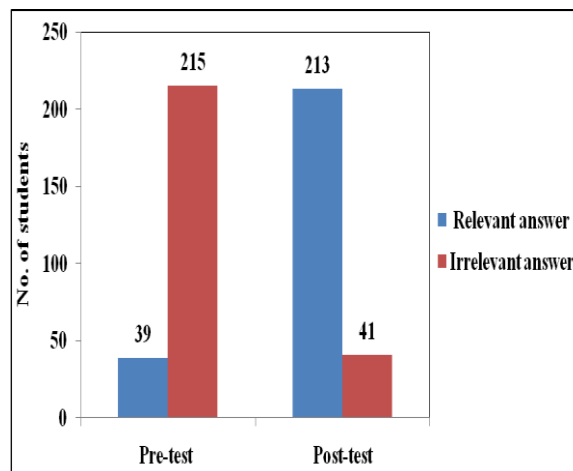


Fig. No.2 Response for what is health screening

6. Response for what are the benefits of health screening services.

For the question on what are the benefits of health screening services, out of 254 subjects, 49 students gave relevant answer in the pre-test while, 205 students gave irrelevant answer. In the post-test, 215 students gave relevant answer whereas, 39 students gave irrelevant answer.

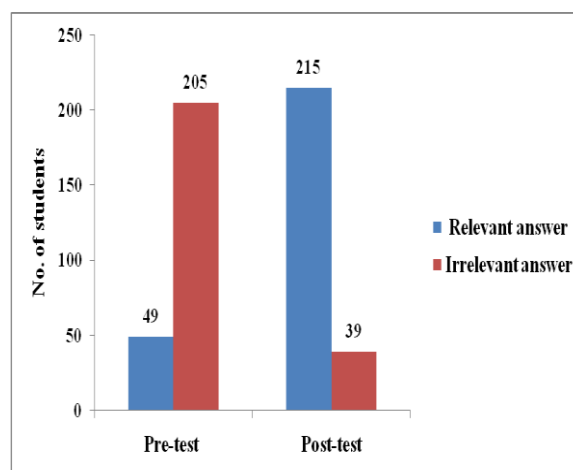


Figure No. 3: Response for what are the benefits of health screening services:

7. Response for whether they watch any health programmes in TV.

Out of 254 subjects, 115 students answered 'No' for this question in pre-test while 139 students answered 'Yes'. In post-test, 71 students answered that they do not watch health programmes in TV while 183

answered that they watch health programmes.

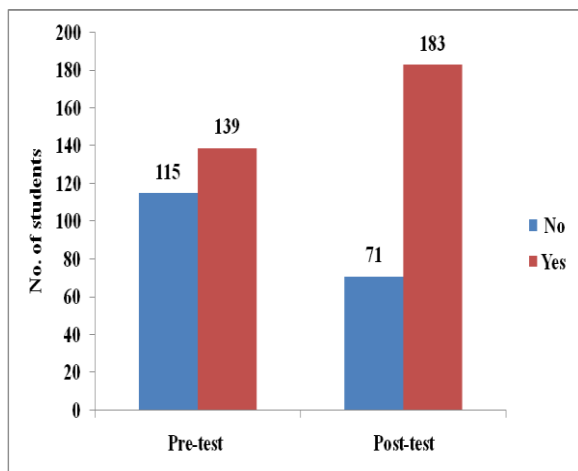


Fig. No. 4: Response for whether they watch any health programmes in TV:

8. Response for whether they discuss with their parents regarding their health

In pre-test, out of 254 students, 74 students responded that they do not discuss health issues with their parents, while 180 students responded that they do. In post-test, 42 students answered 'No' while 212 students answered with a 'Yes'.

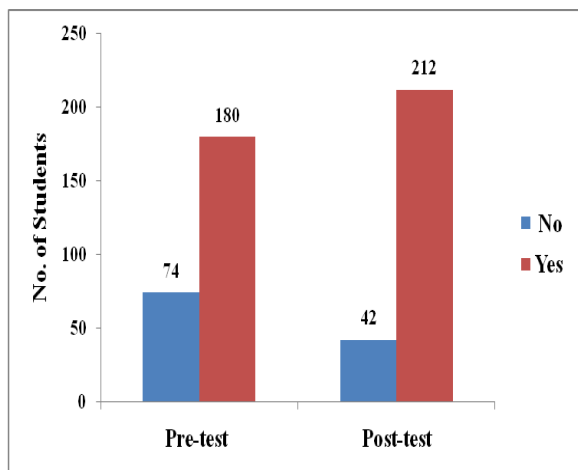


Figure No.5: Response on whether they discuss with their parents regarding their health:

9. Response for what are the sources of information they get regarding health screening

In the pre-test of the present study, out of 254 students, 56 students answered TV, 90 answered Internet, 102 students answered books, magazines and pamphlets, 2 answered awareness programmes and 4 of the students answered parents and teachers as the main sources of information for health screening services.

However, in the post-test assessment, 86 students opted TV as the answer while 111 students opted Internet, 25 students opted books, magazines and pamphlets, 13 students opted awareness programmes and 19 students opted parents and teachers as the main sources of information regarding health screening services.

DISCUSSION

Diseases like Hypertension, Diabetes Mellitus, Hypercholesterolemia and Chronic Respiratory Disorders are considered to be a serious global issue in this century owing to the urbanization, socioeconomic changes favouring sedentary lifestyle, alcohol consumption and obesity among other causes.^[5,14,15] And these are largely the results of practices adopted by people at a young age.^[3] Taking into consideration that these are all modifiable risk factors, prevention and control of the cardiovascular and respiratory disorders is possible. In addition to changes in the lifestyle, early detection also plays a major role in prevention and control of diseases.^[9,16] This is where health screening services come into picture.

We have enrolled a total of 254 students from 3 different schools. All the students who participated in the study were in the age group between 12-16. 14 year old students turned out to be the majority with 157 (61.8%) subjects followed by 15 year old students with 48 (18.9%) subjects. Among the study subjects, there were 121 (47.6%) males and 133 (52.4%) females. Out of 254 students, 121 were in 8th (47.6%) standard, whereas 133 (52.4%) were in 9th standard.

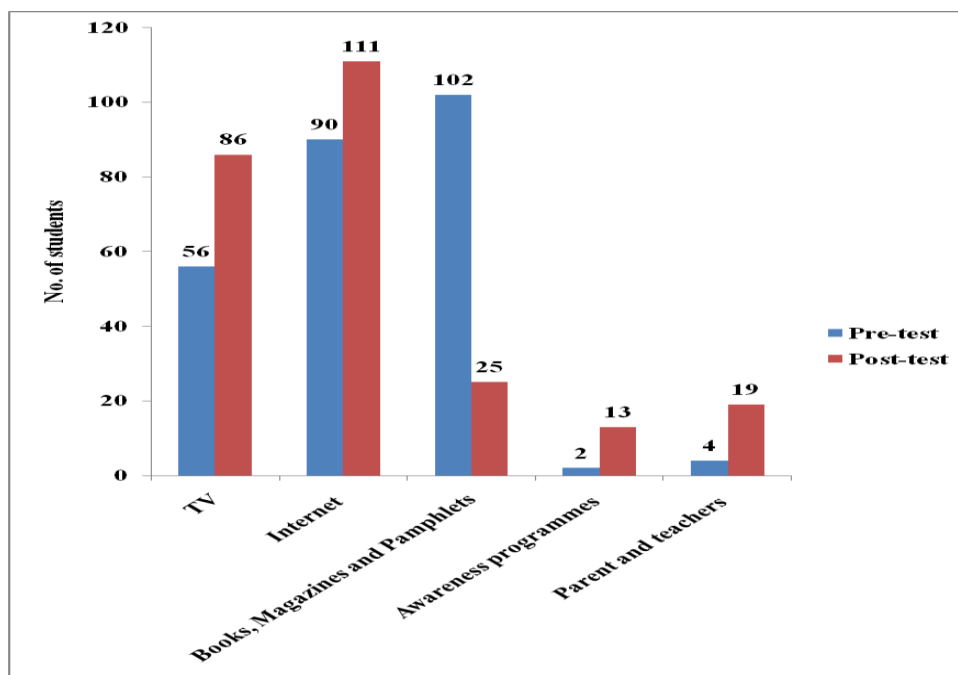


Fig. No.6: Response for what are the sources of information they get regarding health screening

In the current study, the awareness level of all the study subjects regarding Hypertension, Diabetes, High Blood cholesterol, obesity and their screening tests and Pulmonary function tests were assessed using a self-designed questionnaire. The mean score of the students in the pre-tests turned out to be 7.73 ± 2.90 . Which indicated that awareness level of the students were below moderate. The post-tests scores significantly improved to 16.06 ± 2.74 with a highly significant p-value of <0.001 . In a similar study conducted in by Divakaran B *et al.*, in Kannur district, Kerala, students displayed very low awareness regarding lifestyle diseases. 33.5% of the students even had the misconception that DM, CVD and cancer are communicable.^[3]

While assessing the attitude of students towards the health screening services, out of 254 subjects, more than 80% of the students were unaware about what is health screening and its benefits in the pre-test. However, after the educational intervention, the awareness level of the students raised almost two fold. A similar result could be observed in The Persian Gulf healthy heart project, a school-based intervention study which was conducted in

Iran. They found that the classroom-based cardiovascular health promotion had a significant effect on the heart health knowledge. Total heart knowledge at the post test was 25% correct higher in the intervention than in the control group.^[17]

In the present study, half of the study subjects showed a fair response on whether they watch health programmes in TV in the pre-test and almost 70% of the students responded that they discuss health issues with their parents. In the post-test, further increases in students' response were observed. For the question on what are the main sources of information for health screening services, majority of students opted books, magazines and pamphlets in the pre-test. Although, in the post-test, this was replaced by internet followed by TV. All of the above findings point out to the fact that health education is one of the major factors in influencing a person's knowledge, attitude and practice towards health. Becoming aware of the importance of prevention and early detection of diseases and adopting a healthy lifestyle at a younger age could increase the life expectancy of an individual to a greater degree.

CONCLUSION

The study concludes that, in general, the students display least interest in matters of health. Majority of the students depend only on literary sources while they could expand their field of knowledge through visual and social Medias. Health matters are discussed less in families and health programmes least watched. This attitude of the younger generation could be rectified by equipping them through health education and other health promotional activities. Significant changes could be made in their lifestyle by seminars and awareness programmes. Benefits of inculcating an interest in youth regarding health and hygiene could be reaped from a wide expanse of society. It ensures the emergence of a healthier generation.

The limitation that this study has encountered is that the study results were based on the response to self designed questionnaires. As the answers were of objective type, the subjects might have chosen a correct answer unknowingly. The study results were based on adolescent students in 8th and 9th grade only since inclusion of adolescents who are in 10th grade and PU colleges was not plausible.

Still much more studies are yet to be done on health screening services to educate the public. Measures should be taken to ensure execution of various initiatives regarding health promotional activities by governmental and non-governmental organisations.

ACKNOWLEDGEMENT

This study was supported by the cooperation of SJM College of Pharmacy, Chitradurga, Don Bosco Public School, Chitradurga, Bapuji Public School Chitradurga, and SJM School Chitradurga.

I am immensely grateful to my guide Dr. R Yogananda and co-guide Mr. B. Shanker Reddy who moderated this paper and improved the manuscript significantly.

I am sincerely obliged to Dr. Vicky Madhav Singh, my senior for helping me out with the statistical analysis of this study.

REFERENCES

1. Park K. Park's textbook of preventive and social medicine. 23rd ed. Jabalpur, India: Bhanot; 2015, p. 135-7, 362-399.
2. Hackl F, Halla M, Hummer M, Pruckner GJ. The Effectiveness of Health Screening. IZA Discussion Paper 2012;6310:2-3
3. Divakaran B, Muttapillymyalil J, Sreedharan J, Shalini K. Lifestyle riskfactors of noncommunicable diseases: Awareness among school children. Indian J Cancer 2010; 47(1):S9-S13.
4. Nabipour I, Imami SR, Mohammadi MM, Heidari G, Bahramian F, Azizi F, et al. A school-based intervention to teach 3-4 grades children about healthy heart; the Persian Gulf healthy heart project. Indian J Med Sci 2004; 58:289-96.
5. Bhatia S, Khanka BS, Singh D, Shankar P, Tutu S, Lakhani P, et al. Study Of knowledge, attitude and practice of general population of Lucknow towards hypertension. World J Pharm Pharm Sci 2015; 4(10):1674-9.
6. Global action plan for the prevention and control of noncommunicable diseases 2013-2020. WHO 2013:29-59
7. Howarth H, Jackson S, Fitzmaurice K, Gee P, Bereznicki L, Peterson G. Community Pharmacy Research Support Centre. Report of health promotion and screening activities by community pharmacists 2005: 3-4.
8. Wilson JMG, Jungner G. Principles and practice of screening for disease. WHO 1968; 34; 77-102.
9. Brian OO, Henry NC. Community pharmacists and health promotion activities in the 21st century; maximizing the expanded roles for universal health coverage and population health optimization. MOJ Public Health 2017, 6(3):1-6.
10. Beulah P and Hepzhiba P. Health Screening Services in Community Pharmacy. World J Pharm Pharm Sci 2016; 5(8):469-75.
11. Tangcharoensathien V, Tuangratananon T, Vathesatogkit P, Suphanchaimat R, Kanchanachitrac C, Mikkelsend B, et al. Noncommunicable diseases: a call for papers. Bull World Health Organ. 2018; 96:147.
12. Life in the 21st century: A vision for all. The World Health Report 1998:40-60.
13. Egan BM, Lackland DT, Cutler NE. Awareness, Knowledge and Attitudes of

- Older Americans about High Blood Pressure. *Arch Intern Med* 2003;163:681-87
14. Fatema K, Hossain S, Natasha K, Chowdhury HA, Akter J, Khan T, et al. Knowledge attitude and practice regarding diabetes mellitus among nondiabetic and diabetic study participants in Bangladesh. *BMC Public Health* 2017; 17:364.
 15. Ford ES, Mokdad AH, Giles WH, Mensah GA. Serum total cholesterol concentrations and awareness, treatment, and control of hypercholesterolemia among US adults. *Circ* 2003; 107:2185-9.
 16. Riley L, Guthold R, Cowan M, Savin S, Bhatti L, Armstrong T, et al. The World Health Organization STEPwise approach to noncommunicable disease risk-factor surveillance: methods, challenges, and opportunities. *Am J Public Health* 2016; 106:74-78.
 17. Nabipour I, Imami SR, Mohammadi MM, Heidari G, Bahramian F, Azizi F, et al. A school-based intervention to teach 3-4 grades children about healthy heart; the Persian Gulf healthy heart project. *Indian J Med Sci* 2004 July; 58(7):289-96.

How to cite this article: Ellickamury AE, R. Yogananda, Reddy BS. Assessment of the impact of structured education on health screening services among school children in chitradurga. *International Journal of Science & Healthcare Research*. 2019; 4(2): 153-160.
