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Research Article

Exploring Adolescent Awareness of Hypertension Risk Factors at MMINSR SKIMS Soura: A Comprehensive Study

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A B S T R A C T

Background: Non communicable diseases (NCD's) are a group of diseases that are on the rise in both developing and developed countries. The prevalence of hypertension among adolescents comprise 21% of India's population. The study was conducted with the aim of assessing awareness regarding risk factors of hypertension among adolescents.

Materials and Methods: The present study was a descriptive study conducted on 80 adolescents selected by non probability purposive sampling at MMINSR SKIMS Soura. Data collection tool was self structured questionnaire. Data was analyzed by Microsoft excel and SPSS version 26 using descriptive and analytical statistical tests (Chi square) at 0.05 level of significance.

Results: Maximum number of study subjects (52.5%) were males, majority of the study subjects (77.5%) were residing in rural area, maximum number of the study subjects (68.8%) had information from books while as 1.3%, 23.8%, and 6.3% had information from journals, internet and other respectively, maximum number of the study subjects (68.8%) were not having family history of hypertension. The (Mean±SD) awareness score of study subjects was (29.04±4.141). The findings of the present study showed that among the total sample (n=80), majority of the study subjects (72.5%) had good awareness (level ≥50%) and 27.5% of the study subjects had poor awareness (level ≤50%) regarding risk factors of hypertension. There was no significant association of risk factors of hypertension with the selected demographic/clinical variables like gender (p=0.821), place of residence (p=0.976), source of information (p=0.790), family history of hypertension (p=0.120).

Conclusion: The study concluded that the study subjects (72.5%) possess good awareness regarding risk factors of hypertension indicating that

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adolescents undergoing professional courses are well aware about the risk factors of hypertension and no significant association was found for the selected demographic/ clinical variables.

Keywords: Hypertension, Risk Factors, Awareness, Adolescents

Introduction

Non communicable diseases (NCDs) are group of diseases that are on the rise in both developing and developed countries. They accounted for 72% of global deaths in 2016. NCDs comprise of diseases like diabetes mellitus, chronic kidney disease, cardiovascular diseases in addition to many others. In developed nations cardiovascular diseases (CVD) are one of the major causes of death. Raised blood pressure was a leading risk factor for NCDs, which was responsible for 9.2% of DALYs (Disability Adjusted Life Years) for men and 7.8% of DALYs globally for women in 2015. According to Kingue, Ngoe, Menanga, globally, it affects about 1 billion adults and is associated with more than 9 million deaths annually. The prevalence of hypertension among adults is estimated to be 31.1% globally and 27.6% in India. With increasing prevalence, hypertension is becoming a rising health problem not only in adults, but also in children and adolescents. Meta-analysis on hypertension for children and adolescents in Africa showed a pooled prevalence of 5.5%.[1]

High blood pressure (BP), or hypertension, is defined by American College of Cardiology/American Heart Association (ACC/AHA) guidelines (2017) as elevated BP, with a systolic pressure (SBP) between 120 and 129 mm Hg and diastolic pressure (DBP) less than 80 mm Hg. Hypertension is characterized by systolic blood pressure of 130 to 139 mm Hg or a diastolic blood pressure of 80 to 89 mm Hg. Hypertension is the most common primary diagnosis in the United States. It affects approximately 86 million adults (≥20 years) in the United States and is a major risk factor for stroke, myocardial infarction, vascular disease, and chronic kidney disease.[2.]

Based on the recent publication on the update of pediatric clinical practice guidelines (CPG) by the American Academy of Pediatrics, the definition of hypertension in adolescents of age more than 13 years of age is a systolic blood pressure of ≥130 mmHg and/or a diastolic of ≥80 mmHg.[3]

The blood pressure measurement is needed to be taken on separate clinic visits to confirm the diagnosis of hypertension among adolescents. Early detection, early diagnosis, and maintaining healthy lifestyle including promoting physical activities, no smoking, and accurate medication have been shown to help prevent and control hypertension among adolescents.[4]

The trend of global prevalence for hypertension has been dramatically increasing for the past two decades. Globally, at least 1 billion people have hypertension, and a projected figure of 1.5 billion is expected by 2025.[5]

The prevalence of hypertension in adolescents far exceeds the numbers that have been diagnosed; studies have found that 75% or more go undiagnosed [6] Joshi H et. al. in 2014 reported that 23.5% adolescents consumed junk food twice or more per week. In a study by Rani et. al. 2013, 85% students were reported eating fast food with 22% eating it for more than three days a week. They concluded eating of junk foods is directly related to obesity which leads to hypertension among adolescents.[7]

During adolescence and early adulthood period lifestyles are formed so, many adult health problems like hypertension, diabetes have their early origins in early adulthood. By primordial prevention, efforts are directed towards discouraging adults during their early adulthood from adopting harmful lifestyles through individual and mass education. Critical development occurs during adolescence and early adulthood period.[8] Non-pharmacological methods that are dramatically tapering the high blood pressure are life-style modification and relaxation techniques.[9]

Sujata and Shanti[10] in 2019 conducted a descriptive cross sectional study on 356 participants from five private secondary schools of Kathmandu, Nepal. The study aimed to find out the prevalence of hypertension and its determinants among the school going adolescents. They revealed that the prevalence of elevated blood pressure was 12.4%, stage 1 hypertension 32.3% and stage 2 hypertension 9.8%. Similarly, 13.8% of participants were overweight and 1.4% were obese. Males were six times more likely to have elevated blood pressure and 2.8 times more likely to be hypertensive compared to females.

By 2025, the world population is expected to include more than 830 million people at an age of 12 to 18 years. Adolescents form 21.4% population in India which equals to 1/5th of total population. Cardiovascular disease events become more evident and frequent after the fifth decade of life. Also likely, hypertension in young people did not receive a public health attention, which might be due to the lack of awareness, considering it as a problem of adults only. However, pathophysiological and epidemiological evidence suggests that essential hypertension and the precursors of cardiovascular diseases such as left ventricular hypertrophy, atherosclerosis and reduced cognitive function originate in childhood but go undetected unless specifically looked for during this age group. There is strong evidence that raised BMI during adolescence is associated with raised risk of developing hypertension and/or CVD as an adult and also there is a 12% increase in risk of developing CVD for each unit increase in BMI among adolescents. Adolescent Blood pressure (BP) is a strong indicator of adult blood pressure;

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hence, early intervention is important. Thus, early detection of hypertension and its precipitating or aggravating factors is important so that future burden and complications of hypertension can be prevented. In India, the prevalence of hypertension among adolescents, who comprise one fifth (21%) of India's population, ranges from 2% to 21.5% .Previously, studies have reported pooled country-wide estimate on the prevalence of hypertension among adults and tribal population in India, the same among adolescents is lacking.

The increasing prevalence of obesity in childhood and adolescence poses an ever-widening problem. Obese children tend to become obese adults. Some obese children and adolescents go on to display a characteristic profile of hypertension, low HDL-cholesterol concentrations, high LDL-cholesterol and triacylglycerol concentrations, and insulin resistance (metabolic syndrome). Such a metabolic, atherogenic, profile may create favorable conditions for atherogenic cardiovascular disease (CVD), as shown by greater intima-media thickness in affected obese children.[11]

More than 11% of the population aged 15–19 in India are hypertensive. However, estimate on the age adjusted hypertension prevalence differs considerably from the reported crude prevalence (25%) in Geldsetzer et al's 2018 study on hypertension. This discrepancy is arising mainly because our estimates of prevalence pertain to those aged 15–49 while the said study provided estimates for adults aged 18 or older. Hypertension was found to be more prevalent in men than in women. Although the prevalence of hypertension was relatively higher in urban than in rural areas at the national level, the rural–urban differences were small, implying that hypertension epidemic is spreading very fast even in the rural population. This has serious implications for the rural people. The public health system through primary health centers in rural areas is still focusing on infectious diseases, reproductive and child health and thus, has become too limited. So, people would have to rely on the private sector for the management of hypertension and its associated diseases, which would substantially add to their financial strain.[12]

Keeping in view the above discussed scenario of the condition, related morbidity and mortality, and the researchers own observation of the prevalence of the problem and the associated risk factors in the adolescents, there is a need to assess the awareness of hypertension and its risk factors in adolescents in order to decrease the burden of CVDs in future. With this intention, the present study is aimed to assess the awareness of risk factors of hypertension among adolescents so as to sensitize them to the condition and the behavioral risk factors that can contribute to the same.

Methodology

A quantitative research approach with descriptive design was selected to carry out this study. Permission was obtained from the concerned authorities of Mader-e-Meharban Institute of Nursing Sciences and Research (MMINSR), SKIMS, Soura, Srinagar to conduct the final study. Ethical clearance was obtained from Institutional Ethics Committee (IEC), SKIMS. Permission was also accorded from the concerned authorities [HOD and Coordinator of B.Sc Nursing Ist year] of the MMINSR SKIMS Soura to conduct the study on 80 adolescents . Permission was also obtained by taking informed consent from parents/ guardians of adolescents prior to his/ her ward's inclusion as sample in the study. Privacy, confidentiality, and anonymity were being guarded. After seeking permission to conduct the study, data was collected from 80 adolescents of MMINSR SKIMS Soura. After seeking permission to conduct the study, data was collected from 80 adolescents at MMINSR SKIMS Soura on 23/04/2022. The data were collected individually from the study subjects through 50 items of the self-structured questionnaire. Each correct and incorrect response was given a score of one (1) and zero (0) respectively.

The awareness score was categorized into various levels based on the criterion as developed by Shaikh RB, et al [13] in their study in 2011. if the score was ≥ 50% (27-50), it was considered good awareness; if the score was ≤50% (0-26), it was considered poor awareness.

To determine the content validity, the tool (self-structured questionnaire) along with the objectives of the study, scoring key, content validity certificate, and evaluation criteria were submitted to 10 research experts and clinicians specialized in the concerned field. Suggestions and recommendations given by the experts were accepted and necessary corrections were done to modify the tool. The reliability of the self-structured questionnaire was determined by 'Test-retest method'. Karl Pearson's correlation reliability coefficient computed for self-structured questionnaire was "r = 0.89".

Results

The Statistical Package for Social Sciences (SPSS) software programme was used for data analysis. Frequency distributions were obtained and descriptive statistics were calculated.

The findings of the present study showed that the number of males (52.5%) and females (47.5%) were almost equal. Majority of the study subjects (77.5%) were residing in rural area. Maximum number of the study subjects 68.8% had information from books while as 1.3%, 23.8%, and 6.3% had information from journals, internet and other respectively. Maximum number of the study subjects 68.8% were not having family history of hypertension.

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Table 1.Demographic/ Clinical Variables of the Study Subjects

N=80

Demographic/ Clinical Variables	Categories	Frequency (f)	Percentage (%)
Gender	Male	42	52.5
	Female	38	47.5
Place of residence	Rural	62	77.5
	Urban	18	22.5
Source of Information	Books	55	68.8
	Journals	1	1.3
	Internet	19	23.8
	Any other	5	6.3
Family history of hypertension	Yes	25	31.3
	No	55	68.8

Awareness Regarding Risk Factors of Hypertension

Majority of the study subjects (72.5%) had good awareness and (27.5%) had poor awareness. The (Mean±SD) of awareness score of study subjects was (29.04±4.141) with a median of 29. The minimum score was 18 and the maximum score was 38.

Association of Awareness Score of Study Subjects with their Selected Demographic/ Clinical Variables.

The findings of the present study showed that there was no significance between awareness of study subjects and demographic variables such as gender (p=0.821), place of residence (p=0.976), source of information (p=0.790) and family history of hypertension (p= 0.120).

Table 2.Awareness score regarding risk factors of hypertension

N=80

Criteria Measure of Awareness Score		
Score of awareness	**Frequency (f)**	**Percentage (%)**
Good Awareness (27-50)	58	72.5
Poor Awareness (0-26)	22	27.5
Maximum =50 Minimum= 0		

Table 3.Association of Awareness Score of Study Subjects with their Selected Demographic/Clinical Variables

N=80

Demographic Data		Awareness Score		Association with Awareness Score				
Variables	**Categories**	**Good Awareness**	**Poor Awareness**	**Chi Test**	**P Value**	**Df**	**Table Value**	**Result**
Gender	Male	30	12	0.051	0.821	1	3.841	Not Significant
	Female	28	10					
Place of residence	Rural	45	17	0.001	0.976	1	3.841	Not Significant
	Urban	13	5					
Source of Information	Books	41	14	1.045	0.790	3	7.815	Not Significant
	Journals	1	0					
	Internet	13	6					
	Any other	3	2					
Family history of hypertension	Yes	21	4	2.412	0.120	1	3.841	Not Significant
	No	37	18					

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Discussion

The data in the present study (n=80) had showed that the 52.5% were males and 47.5% were females.

The finding of the present study is supported with the results of a descriptive study conducted by Shaikh, et al[13] in 2011 to assess the knowledge of risk factors of hypertension among university students (N=110) at United Arab Emirates (UAE) where the researcher reported that 23.6% were males and 76.4% were females.

Distribution of study subjects according to their place of residence: The data in the present study (n=80) shows that maximum number of the study subjects 77.5% were residing in rural areas and only 22.5% were residing in urban areas.

The findings of the present study is supported with the results of a descriptive study conducted by Grad, et al[14] in 2015 to evaluate the knowledge about hypertension among adolescents (n=250) from south-western Poland, Opole province. The authors reported that maximum study subjects 60.3% were residing in rural area and 39.7% were residing in urban area.

Distribution of study subjects according to the source of information: The data in the present study (n=80) had shown that the maximum of the study subjects 68.6% had information from books while as 1.3%, 23.8% and 6.3% had information from journals, internet and other sources respectively.

The findings of the present study is supported with the results of a study conducted by Akter, et al[15] in 2014 to assess Sources of information and level of knowledge on hypertension among entry level university students (N=161) in Ajman, UAE. The investigators observed that 59% had information from books, journals and74.5% had information from internet.

Distribution of study subjects according to the family history of hypertension: The data in the present study (n=80) had shown that the majority of the study subjects 68.8% did not have family history of hypertension and 31.2% had family history of hypertension.

The findings of the present study is supported with the results of a study conducted by Lahoti, et al[16] in 2020 to determine the knowledge about hypertension among adolescents (N= 369) at multiple places like Pune, Washim, Aurangabad, Mumbai and others. The investigators observed that 60.1% had not family history of hypertension and 39.8% had family history of hypertension.

Objective 1: To assess the awareness score regarding risk factors of hypertension among adolescents.

The finding of the present study showed that among the total sample (n=80) study, majority 72.5% of the study subjects had good awareness (level ≥50%) and 27.5% had poor awareness (level ≤50) regarding risk factors of hypertension. The mean awareness was (Mean±SD) 29.04±4.41. The range of the awareness score obtained in my study was 20 with a maximum level of 38 and minimum level was 18.

The study findings are consistent with findings of a descriptive study conducted by Shaikh, et al[13] in 2011 to assess the knowledge of risk factors of hypertension among university students (N=110) in the four academic programs at Gulf Medical University Ajman, United Arab Emirates (UAE). Out of 110 participants, 60% had good knowledge and 40% had poor knowledge regarding risk factors of hypertension.

Objective 2: To find the association between awareness among adolescents with their selected demographic/ clinical variables i.e; gender, place of residence, source of information, family history of hypertension.

The results showed that there was no significant association between demographic/clinical variables such as gender (p=0.821), place of residence (p=0.976), source of information (p=0.790), family history of hypertension (p=0.120). The mean awareness was (Mean±SD) 29.04±4.41.

The findings of the study is being supported by the findings of the descriptive study conducted by Shaikh, Mathew et al[13] in 2011 to assess the knowledge of risk factors of hypertension among university students (N=110) at Gulf Medical University Ajman, United Arab Emirates (UAE). The knowledge was found to be non significant with demographic variables such as gender (p=0.09), family history of hypertension (p=0.52).

Conclusion

The study concluded that the study subjects (72.5%) possess good awareness regarding risk factors of hypertension indicating that adolescents undergoing professional courses are well aware about the risk factors of hypertension.

There was no significant association found between awareness score with demographic/ clinical variables like gender, place of residence, source of information and family history of hypertension.

As an additional measure to enhance the already existing awareness score, the investigator administered a SIM on “Risk factors of hypertension”.

Limitations

- Sample were only selected from MMINSR SKIMS Soura and small number of sample limits the generalization of the study.
- The assessment of awareness was done only once, if this had been increased to multiple times, it would

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have enhanced the opportunity for researcher to obtain further data.
- Use of self-structured questionnaire restricts the amount of information that could be collected from respondents.
- The study was limited to only 80 adolescents.

Recommendations

Based on the findings of the study, following recommendations were put forward the further research:

- A similar study may be replicated using a large sample of adolescents, in broad settings for making broad generalization.
- A study can be conducted to find out the attitude of adolescents related to the prevention of hypertension.
- A comparative study between professional and non professional adolescents regarding the awareness of risk factors of hypertension can be done.
- A study can be conducted to assess the knowledge and practice regarding risk factors of hypertension
- A study can be conducted to find out the attitude of adolescents related to the prevention of hypertension.
- A similar community based descriptive survey study can be conducted to assess the awareness regarding risk factors for hypertension.
- Different teaching modalities like health education, manuals and self instruction modules may be developed regarding risk factors for hypertension.
- A similar study can be replicated on subjects with different demographic variables in different settings.
- An interventional study can be conducted to assess the effectiveness of structured teaching program regarding risk factors of hypertension.

References

1. Daniel RA, Haldar P, Prasad M, Kant S, Krishnan A, Gupta SK, et al. Prevalence of hypertension among adolescents (10-19 years) in India: A systematic review and meta-analysis of crosssectional studies. PLoS One [Internet]. 2020; 15(10 October):1–21. Available from: http://dx.doi.org/10.1371/journal.pone.0239929
2. Alexander M , Hypertension practice essentials [internet]. 2019 [cited 2021 Mar 5]. Venderbit (USA): Medscape : Available from https://emedicine. medscape. com/article/241381-overview
3. J. T. Flynn, D. C. Kaelber, C. M. Baker-Smith et al., Subcommittee on screening and management of high blood pressure in children: Clinical practice guideline for screening and management of high blood pressure in children and adolescents Pediatrics, 2017; 140 (3): Article ID e20171904,.
4. DiPietro, Amy, Deborah, Kees-Folts, Susan, DesHarnais et al., "Primary hypertension at a single center: treatment, time to control, and extended follow-up. Pediatric Nephrology. 2009; 24(12), pp. 2421–28.
5. S. Kingue, C N Ngoe, A P Menanga, A M Jingi, J J Noubiap, B Fesuh, et al., "Prevalence and risk factors of hypertension in urban areas of Cameroon: a nationwide population-based cross-sectional study," the Journal of Clinical Hypertension. 2015 October; 17(10), 819–24.
6. Rani MA, Sathiyasekaran BW. Behavioural determinants for obesity: A cross sectional study among urban adolescents in India. Journal of Preventive Medicine and Public Health. 2013; 46(4): 192-200.
7. Heo Somi, Kwon Seyoung, Lee Yu-Mi, Shin Ji-Yeon, Lee Duk-Hee. J Prev Med Public Health. 2020 Jan; 53(1): 45–55. Published online 2019 Nov 20. doi: 10.3961/ jpmph.19.198
8. Kishore J. National Programme for Prevention and Control of Diabetes, Cardiovascular Diseases and Stroke. In: National Health Programme of India. 8th edition. New Delhi: Century Publications; 2009:480-488.
9. Vooradi S, Mateti UV. A systemic review on lifestyle interventions to reduce blood pressure. J Health Res Rev 2016; 3:1-5. Available from: URL:http://ww w.jhrr. org/text.asp?2016/3/1/1/173558
10. Shakya S, Bajracharya S. Hypertension and Its Determinants Among School Going Adolescents: A Cross Sectional Study in Nepal. Journal of Nepal Paediatric Society 2019;39 (2):87-94. https://doi. org/10.3126/jnps.v39i2.25377.
11. http://dx.doi.org/10.1016/j.cegh.2017.08.005 2213-3984/© 2017 Published by Elsevier, a division of RELX India, Pvt. Ltd on behalf of INDIACLEN.
12. Ghosh S, Kumar M Prevalence and associated risk factors of hypertension among persons aged 15–49 in India: a cross-sectional study BMJ Open 2019;9:e029714. doi: 10.1136/ bmjopen-2019-029714.
13. Shaikh RB, Mathew E, Sreedharan J, Muttappallymyalil J, Al Sharbatti S, Basha SA. Knowledge regarding risk factors of hypertension among entry year students of a medical university. J Fam Community Med 2011;18:124-9
14. Grad I, Migas M, Pstrusińska K K. Factors associated with knowledge of hypertension among adolescents: implications for preventive education programs in primary care. BMC Public Health 2015;15(463):1-8 https://doi.org/10.1 186/s12889-015-1773-7.
15. Akter R, Assadi R ,Singh H, Abaszadhezouri M G, Lamichhane S, Ahadi H, et al. Sources of information and level of knowledge on Hypertension among entry level university students in Ajman, UAE. American Journal of Research Communication 2014; 2(5),16-27.
16. Lahoti S, Pachori R, Maral S, Joshi A. Studies on