Effectiveness of a multi component intervention programme on blood pressure of children and their knowledge, attitude and practice regarding prevention of hypertension in selected schools of Kerala

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ABSTRACT

Background: Hypertension is a major public health problem worldwide and is one of the major risk factors for coronary artery disease and cerebro vascular disease. Elevated BP in children and adolescents may be an early expression of essential hypertension in adulthood. It was estimated that around 1 billion of the world’s adult population was found to have hypertension in the year 2000 and this is expected to increase 1.56 billion by 2025. Though hypertension is mostly a problem of adults, its etiologic process starts in childhood. Studies have documented a 1-2% prevalence of childhood hypertension in the developed countries and 5-10% in the developing countries. Various Indian studies have also shown a prevalence which ranges from 0.96% to 11.4%. The long-term health risks for hypertensive children and adolescents can be substantial; therefore, it is important that clinical measures be taken to reduce these risks and optimize health outcomes. Early detection and prompt intervention are the two important strategies of reducing the morbidity and mortality rates of any disease conditions as well as in reducing the complications. Same is applicable to childhood hypertension also. The present study aims to assess the blood pressure, knowledge, attitude and practice of school children regarding prevention of hypertension and to find out the effectiveness of a multi component intervention programme on these variables.

Methodology: The purpose of the present study was to find out the effectiveness of a multi component intervention programme on blood pressure, knowledge, attitude and practice of school children on prevention of hypertension. In view of the nature of problem selected for the study and the objectives to be accomplished, Evaluative research approach was considered as an appropriate research approach for the study. The research design used was pre-test post-test control group design. 220 school children with pre hypertension in the age group of 13-16 years studying in 8th and 9th standards were included in the study after screening 1328 children. One hundred and ten children each were included in the control and experimental groups respectively. Considering the sample attrition, 210 children were considered for the final analysis. The pre-test knowledge, attitude and practice of school children were assessed. A multi component intervention programme aimed at diet, exercise and lifestyle modifications of school children was then implemented and the effectiveness was analysed after one year. Follow up visits also were made at 4th and 8th months.

Results: The prevalence of pre systolic hypertension and pre diastolic hypertension among the study population was 265/1000 and 226/1000 respectively. The mean systolic blood pressure in the experimental group was significantly reduced after the multi component intervention programme (117.23 ± 5.36) compared to pre-test (119.25 ± 4.90) whereas there was an increase in the mean systolic blood pressure of the control group (119.32 ± 3.92) when compared to the pretest level (118.85 ± 5.37). The diastolic blood pressure in the control and experimental groups were almost same before (76.19 ± 5.61 and 77.50 ± 4.48 respectively) and after (76.21 ± 5.09 and 77.12 ± 4.48 respectively) the multi component intervention programme. There was a significant association of systolic blood pressure of school children only with their class of study ($\chi^2$= 4.98, p=0.026). No significant associations
were found between systolic blood pressure and age, gender, type of school, location of school, type of family, education of father, education of mother, occupation of father, occupation of mother, type of food intake and family history of hypertension. There were no associations found between diastolic blood pressure of school children and all the socio demographic variables under study. The overall mean post-test knowledge score on hypertension was 15.63 ± 5.04 (49.8%) in the control group and 21.94± 3.13 (70.8%) in the experimental group.

There was a significant correlation between knowledge & attitude and knowledge & practice. There was a significant association between the knowledge of school children and their class of study (x²= 7.89, p=0.019), location of school (x²= 12.24, p=0.002) and family history of hypertension (x²= 23.44, p=<0.000). Attitude of school children was significantly improved in the experimental group after the multi component intervention programme (87.96 ± 10.17) compared to pre-test (76.10 ± 18.01). There was a significant association between the attitude of school children and their type of school (x²= 10.28, p=0.006). There was a significant correlation between attitude and practice. Practice of school children towards prevention of hypertension was significantly improved in the experimental group after multi component intervention programme (14.65 ± 2.59) compared to the pre-test (12.06 ±4.75). There was a significant association between the practice of school children and their type of school (x²= 27.23, p=<0.000), location of school (x²= 9.03, p=0.011) and education of mother(x²= 12.81, p=0.044).

**Conclusion:** Multi component intervention programme was effective in improving the knowledge, attitude and practice of school children on prevention of hypertension as well as in reducing their blood pressure. The results of the present study is very much encouraging that similar programmes can definitely help in controlling life style diseases among children which is an emerging public health problem.

**Key words:** Hypertension, multi component intervention programme, knowledge, attitude and practice.