

# To Study the Awareness and Significance of Blood Pressure Measurement of Children Among Parents

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## Abstract

Hypertension is a common disease associated with high mortality and morbidity. With globalization bringing more lifestyle modifications, adolescents are exposed to multiple risk factors like obesity, diet, academic stress, inactive lifestyle combined with hereditary risk factors. Early diagnosis of hypertension is an important strategy in its control, effective treatment and prevention of complications.

**Keywords:** Hypertension; Prehypertension; Parents; Blood Pressure.

## Introduction

Hypertension and Prehypertension are one of the commonest diseases with worldwide prevalence of 1 billion. 3<sup>rd</sup> National Health and Nutritional Assessment Survey revealed that in United States America, one-third of people were unknown of hypertension.<sup>1</sup> Epidemiological transition with increasing burden of cardiovascular risk factors is evident in adults and children both.<sup>2</sup> The data on the prevalence of prehypertension and hypertension in children show large regional differences in India.

Early diagnosis of hypertension and Prehypertension is an important strategy in its control. Previous studies have documented that hypertension may begin in adolescence, perhaps even in childhood. Elevated blood pressure, systolic or diastolic at any age, in either sex is a contributor for all forms of cardiovascular disease.<sup>4</sup> Identifying

and modifying risk factors reduces the incidence and complications in young and adult. Prevalence of hypertension varies across countries and states. Hypertension - multifactorial disease, is influenced by genetics, race, geography, cultural and dietary patterns.

Paediatrics hypertension is seen in 2% to 5% of all Paediatrics patients. It is one of the top five chronic diseases in children and adolescents. Pediatric hypertension affects approximately 65 children per million.<sup>5</sup>

Hypertension is a common disease associated with high mortality and morbidity. With globalization bringing more lifestyle modifications, adolescents are exposed to multiple risk factors<sup>6</sup> like obesity, diet, academic stress, inactive lifestyle combined with hereditary risk factors. Early diagnosis of hypertension is an important strategy

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**Table 1:** Criteria for diagnosis of Childhood hypertension<sup>7</sup>.

Age	Normal	Prehypertension	Stage I Hypertension	Stage II Hypertension
3-11 years	<90th percentile	90th- <95th Percentile	95th-99th percentile + 5mm Hg	>99th percentile + 5 mm Hg
12-17 years	<90th percentile	90th- <95th percentile or > 120/80 mm Hg	95th-99th percentile + 5 mm Hg.	>99th percentile + 5 mm Hg.

in its control, effective treatment and prevention of complications.

For many children, hypertension is only diagnosed when it is severe, or once they reach adulthood. However, the importance of early and accurate diagnosis cannot be overstated, given the long-term health consequences of untreated hypertension and the fact that pediatric hypertension is a diagnostic indicator for some serious underlying medical conditions.

For the Children Aged 3-11 and 12-17 Yrs of Age (Table 1.1).

1. 90<sup>th</sup> percentile indicates a healthy child.
2. 90<sup>th</sup> - 95<sup>th</sup> percentile indicates a prehypertension stage.
3. 95<sup>th</sup> -99<sup>th</sup> percentile +5mm hg indicates stage 1 hypertension.
4. > 99<sup>th</sup> percentile + 5mm hg indicates stage 2 hypertension.

The prevalence of childhood obesity, the risk of developing left ventricular hypertrophy, and evidence of the early development of atherosclerosis in children would make the detection of childhood prehypertension and hypertension important to reduce long-term health risks.<sup>8</sup> Guidelines for the screening for and diagnosis, evaluation, and management of hypertension in children have been available for 40 years.<sup>9</sup> Unfortunately, clinicians consistently fail to recognize the problem, and the majority of hypertensive children remain undiagnosed. Several reasons for this have been documented including lack of knowledge of the problem and the complexity of blood pressure standards among children, Parents and Pediatricians.

**Aim and Objectives**

- To study the awareness of blood pressure measurements of children amongst parents.

- To create importance of Hypertension in children and Parents.
- To make aware of Prehypertension is an emerging disease in adolescents and Parents.

**Material and Methods**

A Google doc questionnaire was created and was circulated to all Parents on WhatsApp. The questionnaire included simple questions like education of parents, awareness of Hypertension and Prehypertension, importance of measurements of their Childs blood pressure etc.

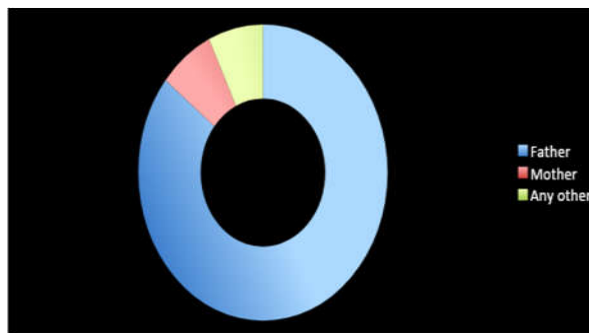
The results were interpreted according to their responses.

*Observations*

Total 280 parents responded in these questionnaires. The following observations were made from their responses.

**Table 2:** In These Questionnaires Out of 240 Participants 85.7% Were Father of Children.

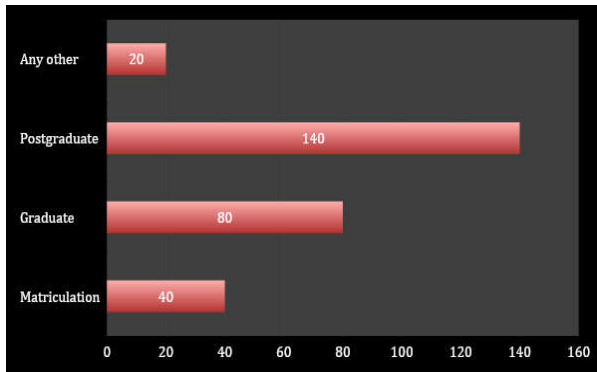
Respondents	Number	Percentage
Father	240	85.7
Mother	20	7.15
Any other	20	7.15
Total	280	



**Fig. 1:** Out of the 280 Members that Answered, Fathers of Children Were 240 in Number and 20 Were Mothers of Children, 20 Were Others.

**Table 3:** Qualification of Respondents.

Qualification	Number	Percentage
Matriculations	40	14.3
Graduates	80	28.6
Postgraduates	140	50
Any other	20	7.15
Total	280	



**Fig. 2:** Educational Qualification of the 280 members was as follows.

Educational Qualification of the 280 members was as follows (Table3, Fig. 2).

Post graduates -50%

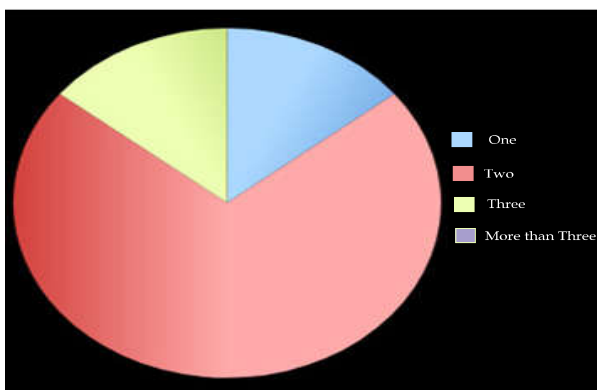
Graduates -28.6%

Matriculation -14.3 %

And remaining participants that did not complete matriculations were 7.5%

**Table 4:** Number of Children.

Number	Number	Percentage
One	40	14.3
Two	200	71.4
Three	40	14.3
More than three	00	00
Total-	280	



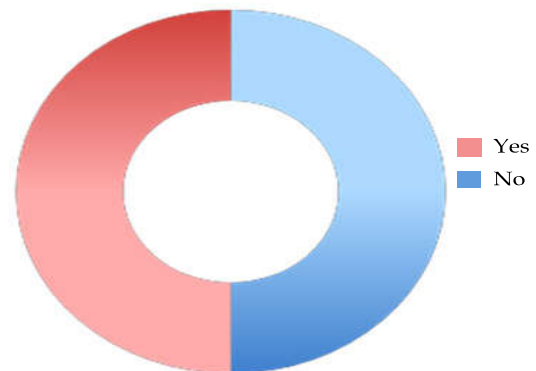
**Fig. 3:** Above graph shows 14.3% Parent had a Single Child , 14.3% had 3 Children and 71.4% had 2 Children.

**Table 5:** Age of Children.

	First child	Second child	Percentage
Below 10	14.3 % (40)	21.6% (60)	14.3
11-19	71.4 % (200)	71.4% (200)	71.4
More than 20	14.3% (40)	7.3%. (20)	14.3
Total-		280	

**Table 6:** Are You Aware of Hypertension (Raised Blood Pressure) in Children?

	Response	Percentage
Yes	140	50
No	140	50
Total	280	



**Fig. 4:** Of the 280 People that Answered 50% of Them Knew About the Prevalence of Hypertension in Children.

**Table 7:** Are You Aware of Prehypertension (Phase Of Higher Blood Pressure Than Normal) in Children?

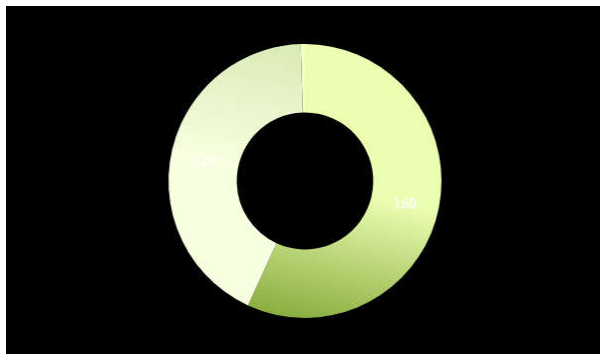
	Response	Percentage
Yes	120	42.9
No	160	57.1
Total	280	



**Fig. 5:** Out of the 280 People that Answered, 42.9% Knew About Prevalence of Pre Hypertension in Children and 57.1% Had No Knowledge of it.

**Table 8:** Have you Checked your Child’s Blood Pressure any Time?

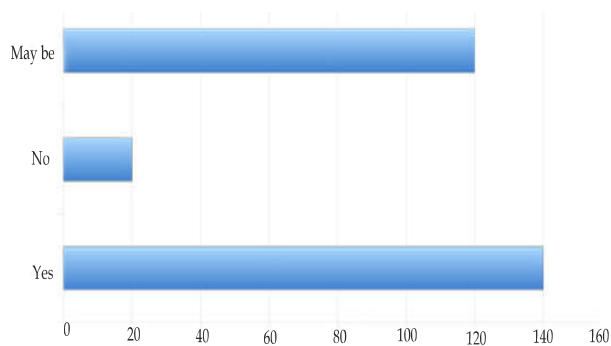
	Response	Percentage
Yes	160	61.5
No	120	38.5
Total	280	



**Fig. 6:** Out of total 280 parents reviewed, 160 actually have checked BP of their child & 120 did not check it.

**Table 9:** Are you aware of effect of Junk food, overweight, school stress on blood pressure of child?

	Response	Percentage
Yes	140	50
No	20	7.1
May be	120	42.9
Total-	280	



**Fig. 7:** Depicts the Awareness Among Parents About the Epidemiology of Pre Hypertension and Hypertension, Findings Revealed that 50% of Them Were Aware of the Effect of Junk Food, Overweight, School Stress on Blood Pressure of Child.

7.1% were not aware and 42.9 % gave the answer as maybe.

**Discussion**

- Collect an accurate family history to identify primary and secondary forms of hypertension.

- Use standardized methods and suitable instruments for a correct measurement of blood pressure in the child and interpret the values according to the most extensive and updated tables.
- Monitor blood pressure during annual control visits from the age of three.
- Repeat the blood pressure measurement on at least three different occasions when values are observed that could indicate hypertension or high normal blood pressure.
- Learn to make a first differential diagnosis between primary and secondary forms of hypertension on the basis of clinical history, physical examination, targeted examinations.
- Send patients with suspect secondary hypertension to referral centers.
- Apply the principles of the dietary and behavioral interventions in the treatment of the primary forms.
- Send patients with suspect secondary hypertension and cases of primary hypertension who do not respond to dietary and behavioral therapy to specialist centers.
- Cooperate with the specialist centers in the follow-up of the hypertensive child.

**Conclusion**

Hypertension among the adolescent age group was alarmingly high; there was no difference in prevalence among government and private schools and among various types of curriculum. Awareness of hypertension was very low. There was no association with socio economic status. Periodic surveys should be done in schools to identify the “at risk” groups.

*Conflicts of interests:* No

*Funding:* No

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