Evaluation of Knowledge Level, Perceptions and Attitudes of Families About Childhood Hypertension

Çocukluk Çağı Hipertansiyonu İle İlgili Ailelerin Bilgi Düzeyi, Algı ve Tutumlarının Değerlendirilmesi

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ABSTRACT

Objective: This study is carried out to evaluate the knowledge levels, perceptions and attitudes of families about childhood hypertension and to identify the sources that are effective in creating knowledge and awareness of childhood hypertension.

Material and Methods: This cross-sectional study was carried out with the families of children who applied to our children hospitals' outpatient clinics between January 15, 2018 and June 15, 2018.

Results: The participants who live in the city center compared to those living in other places ($p = 0.002$); health professionals compared to other occupational groups ($p < 0.001$); those with an income level of 5001 TL and above, compared to other income levels ($p < 0.001$); university graduates compared to other education categories ($p < 0.001$); those who had high blood pressure in their family or relatives compared to others ($p = 0.015$) and participants who had measured blood pressures compared to those who did not ($p < 0.001$) had higher number of correct answers and knowledge levels.

Conclusion: In this study it was determined that knowledge level of the families about childhood hypertension was found to be moderate to low. It has been determined that as the education levels of the individuals increase, their knowledge level generally increases. Considering that hypertension, which is an important public health problem in our country, is becoming more common in childhood and its morbidity is reflected in adulthood; there is a need for community-accepted and applicable community-based conservation and education projects. Family physicians, who have an extremely important role in informing the society, are thought to be the most effective, accessible and able to present scientific and updated information at this point

Key Words: Awareness, Childhood, Hypertension

ÖZ

Amaç: Bu çalışmada birincil olarak ailelerin çocukluk çağı hipertansiyonu konusundaki bilgi düzeyleri, algı ve tutumlarını değerlendirmeyi amaçladık. İkincil olarak ise çocukluk çağı hipertansiyonu bilgi ve farkındalığını oluşturmada etkili olan kaynakları belirlemeye çalıştık.

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Ethics Committee Approval / *Etik Kurul Onayı*: This study was conducted in accordance with the Helsinki Declaration Principles. Permission for this study was obtained from the Clinical Research Ethics Committee of YBU Yenimahalle Training and Research Hospital (Protocol code: 2017/70; Date: 09/01/2018 Decision no: 2018/01/05). Written informed consent was obtained from all participants.

Contribution of the Authors / Yazarların katkısı: BAGCI H: Constructing the hypothesis or idea of research and/or article, Taking responsibility in patient follow-up, collection of relevant biological materials, data management and reporting, execution of the experiments, Taking responsibility in logical interpretation and conclusion of the results, Taking responsibility in necessary literature review for the study, Taking responsibility in the writing of the whole or important parts of the study. ***GULER SONMEZ T:*** Taking responsibility in patient follow-up, collection of relevant biological materials, data management and reporting, execution of the experiments, Taking responsibility in necessary literature review for the study. ***YUKSEL S:*** Planning methodology to reach the Conclusions, Organizing, supervising the course of progress and taking the responsibility of the research/study, Taking responsibility in logical interpretation and conclusion of the results. ***OZLU SG:*** Constructing the hypothesis or idea of research and/or article, Planning methodology to reach the Conclusions, Organizing, supervising the course of progress and taking the responsibility of the research/study, Taking responsibility in necessary literature review for the study, Taking responsibility in the writing of the whole or important parts of the study, Reviewing the article before submission scientifically besides spelling and grammar.

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Gereç ve Yöntemler: Araştırmamız 15 Ocak-15 Haziran 2018 tarihleri arasında hastanemiz Çocuk Sağlığı ve Hastalıkları polikliniklerine başvuran ailelerle gönüllülük esas alınarak, yüz yüze anket çalışması şeklinde gerçekleştirildi.

Bulgular: Çalışmaya yaş ortalaması 37.6 ± 9.5 yıl olan 736 (%75.1) kadın, 244 (%24.9) erkek toplam 980 kişi dahil edildi. Katılımcıların %55'inin çocukluk çağında hipertansiyon olabilir mi sorusuna evet cevabı verdiği saptandı. Hipertansiyon ile ilişkili 8 bilgi sorusuna ise katılımcılar tarafından verilen doğru cevapların ortanca değerinin 5 olduğu tespit edildiİl merkezinde yaşama, sağlık çalışanı olma, gelir seviyesinin 5001 TL ve üzeri olması, üniversite mezunu olma, ailesinde veya yakınlarında hipertansiyon varlığı, daha önce tansiyon ölçtürme durumu ile katılımcıların cevapladıkları doğru soru sayısı arasında anlamlı ilişki saptandı. Katılımcıların bilgi edinme kaynakları açısından değerlendirildiğinde aile hekimlerinin katkısının %17 ile %31 arasında değiştiği saptandı.

Sonuç: Bu çalışmada çocukluk çağı hipertansiyonu konusunda ailelerin bilgi düzeylerinin orta-düşük düzeyde olduğu saptanmıştır. Bireylerin eğitim düzeyleri arttıkça genel olarak bilgi düzeylerinin de arttığı tespit edilmiştir. Ülkemizde önemli bir halk sağlığı sorunu olan hipertansiyonun çocukluk çağında da giderek yaygınlaştığı ve erişkin döneme yansıyan morbiditesi olduğu göz önüne alındığında; toplumca kabul görmüş ve uygulanabilir toplum tabanlı koruma ve eğitim projelerine ihtiyaç olduğu ortaya çıkmaktadır. Toplumun bilgilendirilmesi noktasında son derece önemli role sahip olan aile hekimlerinin bu noktada en etkin, ulaşılabilir, bilimsel ve güncel bilgileri sunabilecekleri düşünülmektedir.

Anahtar Sözcükler: Farkındalık, Çocukluk çağı, Hipertansiyon

INTRODUCTION

In recent years, incidence of childhood hypertension is gradually increasing; although there are differences between countries, its incidence is reported to be approximately 3-4% (1). It is a well-known and modifiable risk factor for atherosclerosis and cardiovascular disease in adults (1). Despite this increasing incidence; little attention has been paid to childhood hypertension and its long-term consequences (1,2) .

There are studies in the literature showing that the precursors of adult hypertension can also be observed in childhood. There is also evidence that hypertension in childhood and adolescence contributes to the early development of atherosclerosis and cardiovascular diseases in adulthood. Therefore, detecting and treating children with hypertension will make an important contribution in the follow-up of adulthood cardiovascular diseases (2,3).

Awareness is an important factor in health behavior to detect the diseases. Increasing awareness plays an important role especially in primary prevention. At the same time, having accurate and reliable information is a crucial step in creating behavioral changes. In the literature, there are few studies related with awareness and knowledge level about childhood hypertension reporting that the level of awareness is not high enough (4,5). In a study with adult patients in the United States, it was found that as the level of knowledge of individuals about hypertension increases, the awareness of the society, the treatment and control of the disease increase (6).

Childhood hypertension is an important public health problem due to the increasing frequency and being the basis of atherosclerotic and cardiac diseases in adulthood. In this regard, it is suggested, in this study, that the awareness and knowledge levels of families and general practitioner who take place in primary care should be increased. In order to achieve this, first information level of the families should be identified on the subject, and then solution suggestions should be provided to overcome the lack of information.

We aimed to determine parents' awareness of and knowledge about childhood hypertension and their main information sources, in an urban district of Ankara, the capital city of Turkey.

MATERIAL and METHODS

Permission for this study was obtained from the Clinical Research Ethics Committee of YBU Yenimahalle Training and Research Hospital (Protocol code: 2017/70; Date: 09/01/2018 Decision no: 2018/01/05). Written informed consent was obtained from all participants.

A cross-sectional survey was administered to families who attended outpatient pediatric clinics at our institute between January 15, 2018 and June 15, 2018. In total, we included 980 parents or guardians aged over 18-years, who had at least one child, and agreed to complete our survey.

Data collection was carried out as face to face questionnare with the parents of the children applied to our pediatric out patient clinics. A three-section, 29-item questionnaire was designed by the authors based on a review of the literature. In the first section, demographic characteristics were included (gender, marital status, number of children, place of residence, and occupation) and in the second section, knowledge of childhood hypertension was assessed through a series of "yes," "no/I have no idea" questions (Table I and II). After each knowledge question, the participants were asked to indicate the source of their information. In the third part of the questionnaire, four questions determined the participants' awareness of childhood hypertension.

The questionnaire was first pretested on ten volunteers in order to confirm its clarity and certainty. The median values of the knowledge questions were calculated for each demographic characteristic and compared with each other. The knowledge of parents whose scores were above the median value was considered "sufficient," whereas knowledge below the median value was determined "insufficient."

Statistical Analyses

Categorical variables are described using frequencies and percentages. Since the continuous variables were derived from a questionnaire, non-parametric statistics were used to describe the data and compare groups without testing for data distribution. That is, median (minimum–maximum) values are used to describe continuous variables. The Chi-square test was used to assess the relationship between two categorical variables.

For knowledge questions, we compared total scores of two and more than two groups using the Mann–Whitney U and Kruskal–Wallis tests, respectively. For hypothesis testing, the type I error rate was taken as 0.05.

RESULTS

This study included 980 people, of which 736 (75.1%) were women and 244 (24.9%) were men. The mean age was 37.6 ± 9.5 years, 94.5% were married, 25.7% had one child, 49.5%, 20.1%, and 4.7% had two, three, and four or more children, respectively. Altogether, 68% of the participants had a history of high blood pressure in their families or relatives, whereas 90.5% of the participants had had their blood pressure measured at least once previously. Other socio-demographic characteristics of the participants are summarized in Table I.

Table I: Distribution of Sociodemographic Characteristics of the Participants.

	Frequency (n)	Percent (%)
Gender		
Female	736	75.1
Male	244	24.9
Place of residence		
City Center	665	68.1
District	299	30.6
Village-Town	12	1.2
Occupation		
Health employee	48	4.9
Officer	103	10.5
Retired	39	4
Worker	107	10.9
Housewife	505	51.6
Others*	180	21.4
Monthly income		
0-1000 TL	178	18.4
1001-2500 TL	428	44.3
2501-5000 TL	295	30.5
5001 TL and over	66	6.8
Education Level		
Primary school	210	21.5
Secondary school	167	17.1
High School	321	32.7
University	281	28.7

**Lawyer; manager. self-employment etc.*

Table II: Descriptive Statistics of the Participants' Answers.

Information Questions	Frequency (n)	Percent (%)
Do you think hypertension or high blood pressure can be seen at any age?		
Yes	771	79
No /No idea	205	21
At which age will hypertension be detected?		
From Birth	224	22.9
Age 6 and Over	66	6.7
Age 12 and Over	112	11.5
Age 18 and Over	95	9.7
Age 40 and Over	113	11.6
No idea	368	37.6
Should blood pressure be measured in childhood?		
Yes	668	68.7
No/No idea	304	31.3
Is hypertension symptomatic in children ?		
Yes	427	43.9
No/No idea	546	56.1
Does measuring blood pressure harm children?		
Yes	277	28.6
No/No idea	700	71.4
Does hypertension improves spontaneously as the child grows up?		
Yes	634	64.8
No/No idea	344	35.2
Should hypertension be treated in children?		
Yes	809	83.1
No	165	16.9

Whereas 694 (71.2%) of the participants stated that hypertension can be seen in children with a family history of hypertension, only 668 (68.7%) stated that blood pressure measurement should be done in childhood. In total, 83.4% participants had children aged over 3 years, and among these only 219 (25.6%) stated that their child's blood pressure was measured during routine childhood examinations.

The median value for the correct answers to the information questions about childhood hypertension was found to be five. In total, 367 (37.4%) participants answered correctly six or more questions indicating that these participants had a higher awareness of childhood hypertension. Participants who previously had their child's blood pressure measured were more likely to answer information questions correctly than participants whose children did not have/or were not remembered as having their blood pressure measured ($p < 0.001$).

Altogether, 534 (55.0%) participants answered "yes" to the question, "Will children be hypertensive?"; while 427 (43.9%) answered "yes" to the question, "Will the children be

Table III: Comparison of demographic characteristics categories according to information questionnaire correct answer total score.

	n	Median	Min.	Max.	p
Gender					
Male	244	5	0	8	0.283
Female	736	5	0	8	
Total	980	5	0	8	
Marital Status					
Married	926	5	0	8	0.294
Single	54	6	0	8	
Total	980	5	0	8	
Number of Children					
1	252	5	0	8	0.709
2	485	5	0	8	
3	197	5	0	8	
4	46	5	0	8	
Total	980	5	0	8	
Place of Residence					
City Center	665	5	0	8	0.002
District	299	4	0	8	
Town-Village	12	4	0	7	
Total	976	5	0	8	
Occupation					
Health Worker	48	7	2	8	<0.001
Officer	103	5	1	8	
Retired	39	4	0	7	
Worker	107	5	0	8	
Self-employment	73	5	0	8	
Housewife	505	4	0	8	
Other	102	5	0	8	
Total	977	5	0	8	
Monthhly Income (TL)					
0-1000	178	5	0	8	<0.001
1001-2500	428	4	0	8	
2501- 5000	295	5	0	8	
5000 -	66	6	1	8	
Total	967	5	0	8	
Educational Status					
Primary school	210	4	0	8	<0.001
Secondary School	167	4	0	7	
High school	321	5	0	8	
University	281	5	0	8	
Total	979	5	0	8	
Are there any hypertensive patients among your family or relatives?					
Yes	667	5	0	8	0.015
No	235	4	0	8	
No Idea	78	5	0	8	
Total	980	5	0	8	
Have you had your blood pressure measured by now?					
Yes	886	5	0	8	<0.001
No	92	4	0	8	
Total	978	5	0	8	

Min: *Minimum,* ***Max:*** *Maxsimum*

symptomatic?" and 373 (77.7%) answered "headache" to the question, "What could this symptom be?" The distribution of answers given to the information questions is shown in Table 2 and the distribution of the number of questions answered correctly is shown in Figure 1.

It was found that the participants with greater childhood hypertension knowledge were more likely to live in the city center compared to those living in other areas (p=0.002); were more likely to be health professionals compared to other occupational groups (p<0.001); had an income of ≥5001 Turkish lira compared to lower income groups (p< 0.001); were more likely to be university graduates than other educational categories (p<0.001); were more likely to have high blood pressure in their family or relatives compared to others (p= 0.015), and were more likely to have had their blood pressure measured compared to those who did not (p<0.001) (Table III). Gender, marital status, and number of children did not affect parents' knowledge (p=0.283, p=0.294, and p=0.709, respectively) (Table III).

Descriptive statistics regarding the source of parents' information are given in Table IV. Parents were able to choose more than one option while specifying sources.

DISCUSSION

In this study, knowledge and awarenesss of parents about childhood hypertension were evaluated in an urban area of Ankara the capital city of Turkey. We have highlighted that parents are insufficiently aware of childhood hypertension and that the source of this information mainly comes from written or visual media rather than from healthcare professionals. Significant relationships were found between parents' knowledge and the following: living in the city center, being a healthcare professional, income of ≥5001 Turkish lira, being a university graduate, presence of hypertension in family or relatives, and those who had had previous blood pressure measurement. No significant differences were found between the gender and age of participants and their knowledge.

Hypertension is an important health problem of childhood and may occur as early as the first day of postnatal life. There is mounting evidence that hypertension in childhood may precede hypertension in adulthood and may be a precursor of adulthood atherosclerosis; an important risk factor for cardiovascular disease (7,8). Effective steps to diagnose and manage adulthood hypertension have been taken globally, but little attention has been paid to this problem in childhood (7). Although there are many studies addressing awareness of adulthood hypertension, there are few studies dealing with awareness of childhood hypertension (7). One of the few studies exploring adults' awareness of childhood hypertension was carried out by Odely et al.(8) in Cameroon. They discovered that there was insufficient knowledge of the presence, diagnosis,

Table IV: Sources of Information Regarding Childhood Hypertension.

Information	Sources					
	Relatives - Friends*	General Practitioners*	Written Press*	TV*	Internet*	Other*
Hypertension can be detected at any age	386 (49.2)	140 (17.9)	175 (22.3)	217 (27.9)	207 (26.4)	112 (14.2)
Blood pressure should be measured in childhood	245 (36.1)	165 (24)	137 (20.2)	162 (23.9)	172 (25.4)	131 (19.3)
Children may have hypertension	205 (6.8)	130 (23.3)	139 (25)	174 (31.2)	175 (31.4)	97 (17.4)
If children have hypertension, they will be symptomatic	140 (30.9)	134 (29.6)	98 (21.6)	124 (27.4)	116 (25.6)	107 (23.6)
Hypertension in children improves spontaneously as the child grows up	48 (24.1)	62 (31.2)	39 (18.6)	44 (21.6)	48 (24.1)	54 (26.6)
Hypertension must be treated in children	199 (26.2)	215 (28.3)	161 (21.2)	203 (26.7)	227 (29.9)	199 (26.2)

**n(%)*

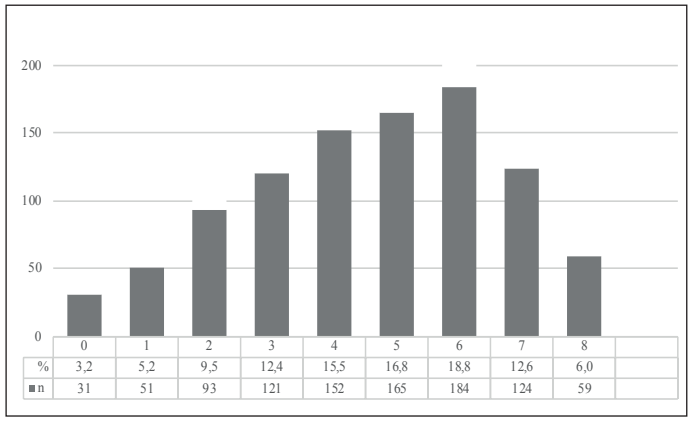

Figure 1: Distribution of Information Questionnaire Correct Answer Total Score.

and management of childhood hypertension (8). In agreement with these findings, we found only 367 (37.4%) of participants answered knowledge questions sufficiently indicating that knowledge was low among our study population. When evaluated according to demographic features, living in the city center was associated with increasing knowledge compared with living in other areas. Yao et al. (9) similarly found that knowledge of adulthood hypertension in people living in rural areas was lower than in those living in city centers and towns. This difference is explained by the reduced ability of rural residents to access educational tools (9). Studies performed in developing countries have consistently found that those with higher incomes have better awareness of hypertension compared with those with lower incomes (10). This was similarly observed in our study and may be explained by those with a higher income having better access to healthcare and treatment, as well as having better control of disease.

University graduates in our study had greater awareness and knowledge of childhood hypertension than other educational grades. These findings were corroborated by Viera et al. (6) who found that individuals with a low level of education had a low level of hypertension knowledge. However, Grad et al.(11) found that there was no significant relationship between the educational background of adolescents and their knowledge of hypertension. Although it was determined in our study that the level of knowledge of the participants increased as the level of education increased, it should be noted that this study was performed in adults. We suggest that people should be informed about hypertension during secondary education in order to increase the awareness of the society based on the data in our study and the literature.

Previous studies in adults have demonstrated that smokers and overweight people are more aware of the diagnosis, management, and consequences of hypertension (12). Physicians pay more attention to patients with hypertension who are overweight (12). In our study, in addition to these previous findings in literature, we noted that those who had their blood pressure measured previously and who had hypertensive relatives had a higher awareness of childhood hypertension.

We explored the sources of our participants' information on childhood hypertension. We demonstrated that the social environment (relatives, friends, neighbors etc.), written and visual media, and the internet were the most common information sources. Oskay et al. (13) found that the most common source of hypertension knowledge in those who attended family medicine outpatient clinics was health professionals (52.2%); however knowledge was still not at the desired level. In addition, relatives were found to be an important and active source of information, although they may also be a source of unreliable and pseudoscientific information (13). In recent years, with an increasing focus on disease prevention and maintaining a healthy lifestyle, health communication and education has gained increasing importance. Promoting and improving health is based on health education, and health information is the basis for this. The authority of the information source is important; the more reliable the source and the stronger its authority the greater likelihood of behavior change. Family physicians have an important role in informing their patients and may provide effective, accessible, scientific, and up-to-date information.

The main limitation of this study is that it was conducted in a single center. Therefore, we are aware that it may not reflect the national data. Another limitation of our study is that while applying the questionnare we did not discriminate the presence of hypertension in the family according to the ages of the patients. Presence of a hypertensive child or adolescent in the family or among relatives could have effect the knowledge of the parents. Despite these limitations ,since there are not many studies on the level of parental knowledge about childhood hypertension, we think that our study will still give an important preliminary idea.

In conclusion, hypertension is an important public health problem in Turkey, as in other parts of the world. It is becoming more prevalent in childhood and can cause morbidity in adulthood; there appears to be a need for community-based prevention and education campaigns. Above all, we suggest that healthcare professionals should be informed more effectively about childhood hypertension in conjunction with an effective healthcare education program involving the all aspects of news media to raise public awareness.

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