KNOWLEDGE, AWARENESS, AND SELF-CARE PRACTICES OF HYPERTENSION AMONG CARDIAC HYPERTENSIVE PATIENTS LIVING IN JALAL-ABAD, KYRGYZSTAN

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Abstract
Introduction. This study investigates the knowledge, awareness, and self-care practices of hypertension among cardiac hypertensive patients living in Jalal-Abad, Kyrgyzstan, and students of Jalal-Abad State University, hypertension is an important global health challenge, leading to high risk of cardiac and chronic kidney diseases causing death and disabilities: obesity, physical inactivity, and inadequate nutrition.

Methodology
Among many hypertensive patients living in Jalal-Abad Kyrgyzstan, we gathered responses from about 120 patients with the help of a questionnaire method. We write a questionnaire of about 40 questions in English as well as in the Russian language. We also informed all the respondents about the ethical information that we will not use their names or other personal information in our study. All the respondents answer our questionnaire with their own knowledge.

Result and discussions
According to the results, some of the respondents know about their family history of hypertension, 55.0% of respondents think that family history plays a role in hypertension,73% respondents think that obesity is the cause of hypertension, many respondents think that smoking, aging, alcohol and junk food is the cause of hypertension.67.5% of respondents acknowledged that physical activity and 75% think that quitting smoking can help treat hypertension.

Conclusion
The study concludes that hypertension prevalence is increasing worldwide and an estimated 972 million people in the world are suffering from HTN. Incidence rates of hypertension range between 3% and 18% depending on the age, gender, ethnicity, and body size of the population. Mortality from stroke and ischemic heart disease doubles with each 20 mm Hg increase in systolic blood pressure from levels as low as 115mm Hg and with each 10 mm Hg increase in diastolic BP from levels as low as 75 mm Hg.

Keywords: Systolic blood pressure, hypertension, cardiac patients, outpatient department

ЗНАНИЯ, ОСВЕДОМЛЕННОСТЬ И ПРАКТИКА САМОПОМОЩИ В ОТНОШЕНИИ ГИПЕРТОНИИ СРЕДИ ПАЦИЕНТОВ С СЕРДЕЧНОЙ ГИПЕРТОНИЕЙ, ПРОЖИВАЮЩИХ В ДЖАЛАЛ-АБАДЕ, КЫРГЫЗСТАН

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Аннотация
Введение. В этом исследовании изучаются знания, осведомленность и практика самопомощи в отношении гипертонии среди пациентов с сердечной гипертонией,

проживающих в Джалал-Абаде, Кыргызстан, и студентов Джалал-Абадского государственного университета. Гипертония является важной глобальной проблемой здравоохранения, приводящей к высокому риску сердечных и хронических заболеваний почек, приводящих к смерти и инвалидности: ожирению, физической неактивности и неадекватному питанию.

Методология
Среди многих пациентов с гипертонией, проживающих в Джалал-Абаде, Кыргызстан, мы собрали ответы примерно у 120 пациентов с помощью метода анкетирования. Мы пишем анкету из примерно 40 вопросов на английском и русском языках. Мы также проинформировали всех респондентов об этической информации о том, что мы не будем использовать их имена или другую личную информацию в нашем исследовании. Все респонденты отвечают на нашу анкету, используя собственные знания.

Результаты и обсуждения
Согласно результатам, некоторые респонденты знают о наличии у них в семье гипертонии, 55,0% респондентов считают, что семейный анамнез играет роль в гипертонии, 73% респондентов считают, что ожирение является причиной гипертонии, многие респонденты считают, что курение, старение, алкоголь и нездоровая пища являются причиной гипертонии. 67,5% респондентов признали, что физическая активность и 75% считают, что отказ от курения может помочь в лечении гипертонии.

Вывод
Исследование пришло к выводу, что распространенность гипертонии растет во всем мире, и, по оценкам, 972 миллиона человек в мире страдают от гипертонии. Показатели заболеваемости гипертонией колеблются от 3% до 18% в зависимости от возраста, пола, этнической принадлежности и размеров тела населения. Смертность от инсульта и ишемической болезни сердца удваивается с каждым повышением систолического артериального давления на 20 мм рт. ст. с уровня всего 115 мм рт. ст. и с каждым повышением диастолического артериального давления на 10 мм рт. ст. с уровня всего 75 мм рт. ст.

Ключевыеслова:Систолическоеартериальноедавление,гипертония,кардиологические больные, амбулаторное отделение

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Introduction

Hypertension is an important global health challenge because of its high prevalence and resulting cardiovascular disease and chronic kidney disease. Hypertension is the leading preventable risk factor for premature death and disability worldwide [1]. Hypertension prevalence was decreasing; however, recent data suggest that it is again on the rise. In 1999–2002, 28.6% of the U.S. population had hypertension [2] Hypertension prevalence has also been increasing in other countries, and an estimated 972 million people in the world are suffering from this problem. Incidence rates of hypertension range between 3% and 18%, depending on the age, gender, ethnicity, and body size of the population studied [2]. Hypertension (HTN) is a prevalent condition worldwide and a major risk factor for cardiovascular disease. Mortality

from stroke and ischemic heart disease doubles with each 20-mm Hg increase in systolic blood pressure (SBP) from levels as low as 115 mm Hg and with each 10-mm Hg increase in diastolic BP (DBP) from levels as low as 75 mm Hg [3].

Some risk factors for cardiovascular disease such as hypertension have been increasingly prevalent among adolescents and follow the growing trend of cases of overweight, physical inactivity, and inadequate nutrition in this population. Hypertension is a disease related to different causes, in which blood pressure levels remain high for a certain period.

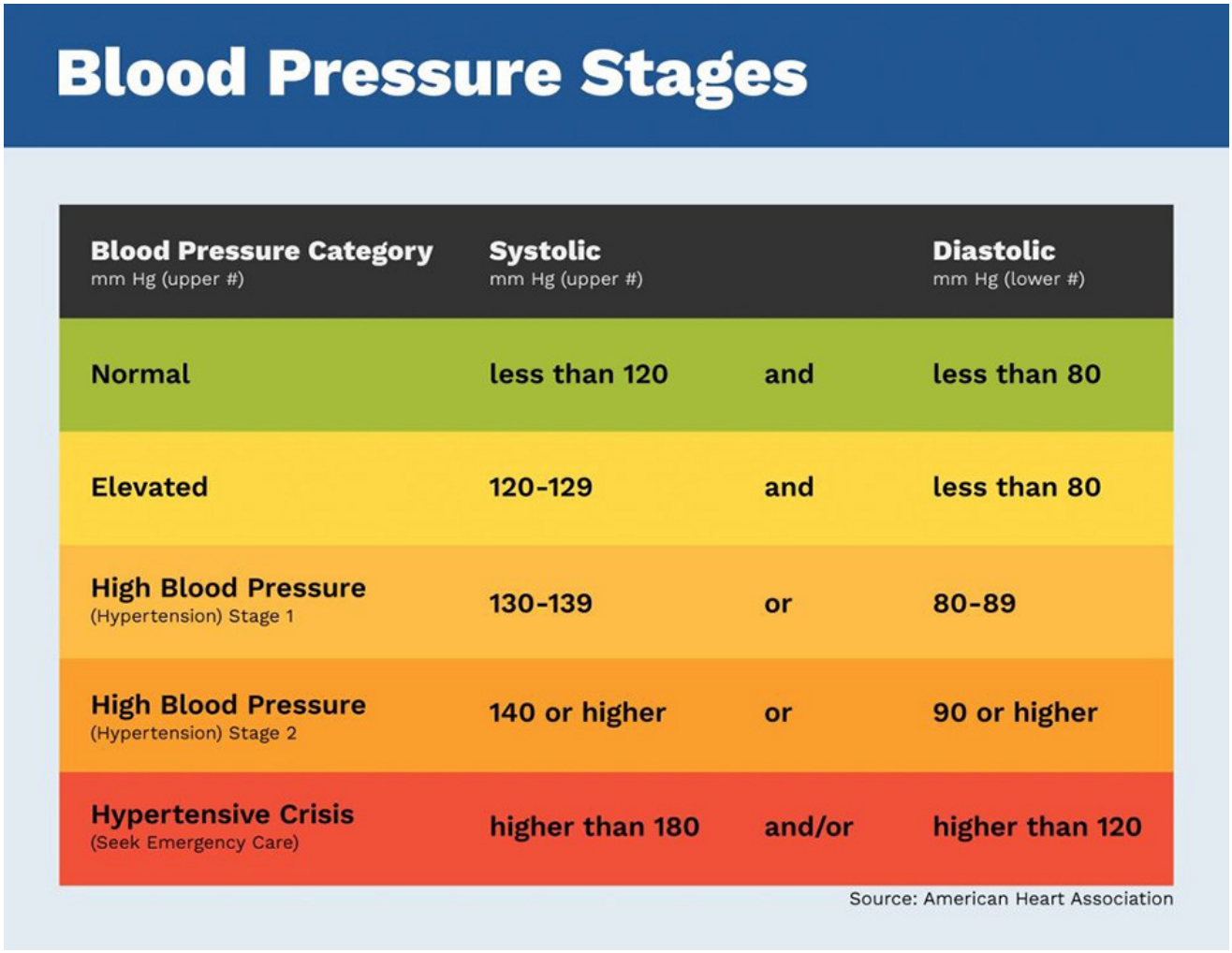
Organs such as the heart, brain, kidneys, and blood vessels are usually affected and undergo changes that may compromise their functions. This condition is also often related to metabolic changes and is one of the most common risk factors for cardiovascular disease. [4] Previous studies have shown that individuals with high blood pressure (BP) in childhood tend to have high BP in adulthood. Understanding the prevalence and risk factors of adolescent hypertension is important. The proportion of children and adolescents with hypertension has increased in the past few decades [5].

Obesity has been posited as the cause of hypertension, but the fact that there are metabolically obese normal-weight (MONW) people, as well as overweight and obese people who are metabolically normal, would argue that there may not be a simple cause-and-effect relationship between them. Moreover, the obesity and hypertension epidemics have arisen concurrently with significant changes in family structures that have resulted in increased consumption of fast foods and prepared foods, and therefore sodium, trans-fats, and high-fructose corn syrup, as well as more automation of activities that formerly required physical labour to accomplish, and a more fast-paced and deadline-driven environment in almost every facet of life [6].

Essential systemic arterial hypertension is a multi-factor disease, in which several different mechanisms are involved, leading to an increase in cardiac output and peripheral vascular resistance. Obesity is the principal risk factor for arterial hypertension. Reducing body mass index (BMI) results in significant reductions in blood pressure levels, and this is one of the pillars of non-pharmacological management of the disease. The prevalence of obesity and overweight has been increasing over the years among adolescents in many parts of the world.

Systemic arterial hypertension is considered a global public health problem, causing 9.4 million deaths every year worldwide. This disorder has a multifactorial aetiology, characterized by a persistent elevation of blood pressure and metabolic alterations, leading to the risk of cardiovascular complications. In adolescence, arterial pressure alterations constitute an important risk factor for the development of arterial hypertension. Moreover, young adults who manifest high-pressure levels tend to keep this condition as adults. Hence, it is important to evaluate the factors contributing to this situation and to promote subsidies for interventions. The investigation of risk factors for cardiovascular diseases, without involving laboratory analyses, can represent a useful method, mainly as an alternative in places with few resources. In this context, the early identification of altered pressure levels is found as an essential tool for reducing the development of these diseases [7].

Numerical findings of blood pressure ranges are given below in the table [8]



Blood Pressure Stages

Blood Pressure Category mm Hg (upper #)	Systolic mm Hg (upper #)		Diastolic mm Hg (lower #)
Normal	less than 120	and	less than 80
Elevated	120-129	and	less than 80
High Blood Pressure (Hypertension) Stage 1	130-139	or	80-89
High Blood Pressure (Hypertension) Stage 2	140 or higher	or	90 or higher
Hypertensive Crisis (Seek Emergency Care)	higher than 180	and/or	higher than 120

Source: American Heart Association

The rise in the prevalence of overweight children and the increased survival rate of subjects with a very low birth weight may predict that the progression of hypertension prevalence in paediatric subjects will continue to aggravate. In 2009 the European Society of Hypertension published recommendations for the management of hypertension in children and adolescents. Prevalence and new diagnoses of hypertension in children and adolescents are increasing. Numerous population studies indicate that a hypertensive condition in childhood raises the probability of being hypertensive in adulthood. In the first years of childhood secondary forms prevail whereas with increasing age primary forms of hypertension become most frequent. Blood pressure values increase progressively until the age of 17–18 years when adult values are reached. This increase is most rapid during the first weeks of life and puberty. Blood pressure values are correlated with gender, height, and body mass. Obesity represents a strong risk factor for the development of child hypertension [9].

Non-contagious diseases including cardiovascular diseases, brain attack, diabetes, cancer, and chronic respiratory diseases are the main causes of death and the burden of diseases in the world. Out of 58,000,000 deaths annually, nearly 35,000,000 cases are because of the mentioned diseases [10]. Among the non-contagious diseases, cardiovascular diseases are the most common ones, and they account for one-fourth of the deaths in the world. Today,

hypertension and its complications comprise a significant health problem in the modern world and are considered precursors to many diseases such as myocardial infarction, stroke, congestive heart failure, advanced chronic kidney disease, and peripheral vascular diseases.

Hypertension is caused by different factors; however, poor nutritional behaviours are among the main factors contributing to this condition. Furthermore, behavioural characteristics such as poor nutrition patterns formed in adolescence cause many complications, such as adulthood mortality. In other words, many healthy and unhealthy behaviours established during this stage manifest themselves as fixed patterns into adulthood. As an adolescent, the individual is now responsible for his nutrition patterns, attitudes, and behaviours, and attitudes tend to play a key role in maintaining a wide range of nutrition habits and behaviours. The physical and psychological changes developed in adolescence make up the adolescent's nutritional health; if these changes are ignored, they will cause adverse consequences such as anorexia and overeating, and the adolescent will become underweight or overweight as a result [10].

Methodology

In our research, we used a questionnaire to collect patient data. Our questionnaire contains various questions related to Socio-demographic characteristics, variables related to Hypertension, medical and family history, and knowledge about hypertension. Researchers visited respondents personally and handed over the questionnaire and they filled it by themselves. After collecting all whole data and responses from the patients, we gathered all the responses with the help of a software SPSS version 26 per analysis, frequencies, means, and standard deviations. We obtained ethical approval from administrative staff before conducting the study. The respondents were informed that their participation was voluntary and that they could stop their participation at any stage in case they felt uncomfortable. The confidentiality of the information obtained was kept and respondent names were not recorded.

Result

1: Information related to socio-demographic characteristics

-	Total Responces (N=120)	Percentages
Age Groups		
15-20	18	10-15%
20-25	23	15-20%
25-30	12	5-10%
30-35	56	40-50%
More than 35	11	5-10%
Marital Status		
Married	45	37.39%
Single	72	60.87%
Others	3	1.74%
Educational Status		
Illiterate	15	12.50%

Medium	54	45%
Literate	51	42.50%
Family Size		
Self	6	5-10%
2-3	12	10-15%
3-4	63	50-60%
More than 5	39	30-40%
Gender		
Male	75	62.50%
Female	44	36.70%
Other	1	0.80%

The age group study participants are 10-15% of 15-20 years, 15-20% of 20-25 years, 5-10% are 25-30 years, 40-50% are 30-35 years and 5-10% are above 35 years of age group. The majority of the participants are male (62.5%) and the rest are females (36.7%) and others (0.8%). According to marital status, 37.39% are married, 60.87% are single and 1.74% are others (widows or widowers). According to educational status, 12.5% are illiterate, 45% have education of middle standard and 42.5% are literate. According to family size, 5-10% are living alone, 10-15% have 2-3 family members, 50-60% have 3-4 family members and 30-40% have more than 5 family members as shown in Table 1.

2. Information Related To Causes, Risk factors, and Prevention of Hypertension

,	Total Responses (N=120)	Percentages
History of HTN		
Yes	38	30.80%
No	82	70.20%
Smoking Status		
Yes	28	23.50%
No	92	76.50%
Current Smoking Status		
Current smoker	10	8.30%
Former smoker	21	17.50%
Doesn't smoke	89	74.20%
History of Kidney disease		
Yes	17	14.20%
No	103	85.80%
Eating habit		
Healthy food	34	28.30%
Junk/ Fast food	10	8.30%

Mixed	76	63.30%
Alcohol use		
No	97	80.83%
Daily	2	1.67%
Sometime	10	8.33%
2-3 times per week	11	9.17%
Medication Routine		
Yes	36	30%
No	64	53.30%
Sometime	20	16.70%
Advancing age as a risk factor for HTN		
Yes	43	35.83%
No	77	64.17%

According to respondents' information related to causes, risk factors, and prevention of HTN, 30.8% of respondents said family history is a cause and risk factor of HTN and 70.2% of respondents said family history doesn't play any role in HTN. In this study, 23.5% of respondents are a smoker 76.5% of participants are non-smokers, 14.2% of participants have a history of kidney disease and 85.8% don't have any kind of history of kidney disease. According to the eating habits of respondents, 28.3% of participants take healthy food in their diet, 8.3% of respondents take fast/junk food in their daily meals and 63.3% of respondents take mixed food in their daily meals. 80.83% of our respondents don't take alcohol, 1.67% of respondents take alcohol daily, 8.33% of participants take alcohol sometime on some occasion and 9.17% of participants take alcohol 2-3 times per week. According to medication routine 30% of our respondents takes medicines daily, 53.3% of participants don't take any kind of medicines daily and 16.7% of participants takes medicines sometime in an emergency situation. According to respondents knowledge about advancing age as a risk factor or a cause og HTN, 35.83% of particopants said yes advancing age can cause HTN and 64.17% of respondents said no advancing age is not a risk factor or a cause of HTN as shown in Table 2.

3. Information Related To Information and Communication To Hypertension

,	Total Responses (N=120)	Percentages
Role of family history in HTN		
Yes	66	55%
No	54	45%
Role of obesity in HTN		
Yes	88	73.30%
No	32	26.70%
Role of smoking in HTN		
Yes	78	65%

No	42	35%
Role of stress in HTN		
Yes	93	77.50%
No	27	22.50%

As a result of respondents about information and communication to HTN, 55% of respondents said family history plays a role in HTN and 45% of participants said family history don't play any role in HTN. Now according to their knowledge about role of obesity in HTN, 73.3% respondents said obesity plays role in cause of HTN and 26.7% respondents said obesity don't play any role in HTN. 65% and 77.5% of respondents said smoking and taking stress respectively plays role in HTN but 35% and 22.5% of participants said smoking and taking stress don't play any role in HTN respectively as shown in Table 3.

4. Information Related To Attitude and Behaviour Towards Examination and Medications

,	Total Responses (N=120)	Percentages
Quitting Smoking		
Yes	90	75%
No	30	25%
Physical Exercise		
Yes	81	67.50%
No	39	32.50%
Good Mental Health		
Yes	83	69.17%
No	37	32.83%
Doctor's Guidance		
Yes	103	85.80%
No	17	14.20%

This study gives information related to attitude and behaviour towards examination and medication of HTN. 75% of respondents said quitting smoking is helpful in treating HTN but 25% of the respondents said quitting smoking is not helpful in treating HTN. 67.5% and 69.17% of respondents said physical exercise and good mental health plays role in treating HTN respectively and 32.5% and 32.83% of respondents said physical exercise and good mental health don't play any role in treating HTN respectively. In the end, 85.8% of respondents said Doctor's guidance is helpful in treating HTN and 14.2% respondents said Doctor's guidance is not helpful in treating HTN as shown in Table 4.

Discussion

By the result of all our study, we got data from 120 participants in which 62.5% are male, 36.7% are female and 0.8% others, but the study done by Muhammad Bilal, et al, 2015, they got data from 664 participants out of which 422 are male and 242 are female. The age group of our respondents are 10-15% of 15-20 years, 15-20% of 20-25 years, 5-10% of 25-30 years,

40-50% of 30-35 years an 5-10% of age more than 35 years, whereas, the study done by Muhammad Bilal, et al, 2015, the mean age of participants was 54.4±12.5 years. In our study, the educational status of the respondents is 12.5% are illiterate, 45% have education status of middle standard and 42.5% are literate, whereas, the study done by Muhammad Bilal, et al, 2015, 54.7% patients were either illiterate or with level of education less than Matriculation and 20% are labour by profession [11].

In our study, the family size of respondents is, 5-10% live alone, 10-15% have family size of 2-3 members, 50-60% have family size of 3-4 members and 30-40% have family size of more than 5 members while the study done by Geeta K Satyal, et al, 2020, 50.9% respondents have joint family and 49.1% respondents lives in a house with only one family. In our research, 30.8% respondents have history of HTN and 70.2% respondents don't have any history of HTN, while according to study done by Geeta K Satyal, et al, 2002, 48% of patients have family history of HTN and 53.3% respondents don't have any history of HTN. In our research, 23.5% of respondents are smokers in which 8.3% are current smokers, 17.5% are former smokers and 19.17% of respondent's intake alcohol daily or 2-3 times per week or only on some occasions, while the study done by Geeta K Satyal, et al, 2020, 29.2% of respondents are smokers, 30.7% of respondents uses alcohol [12].

In our study, 14.2% of the respondents have some kidney diseases associated with HTN and 85.8% of participants don't have any kidney disease associated with HTN. But according to the study done by Rmeya Kazancioglu, et al, 2013, 37.3% of their respondents have kidney diseases related to HTN and 72.7% don't have any kidney diseases associated by HTN. In our study, many respondents are obese due to their eating habit, 28.3% of the respondents take healthy food in their diet, 8.3% of respondents take junk/fast food in their meal and 63.3% take mixed (healthy/junk food) in their meal, but by the study of Rumeyza Kazancioglu, et al, 2013, two-third of respondents are obese and rest have normal BMI [13].

In our study, 55% of respondents have point of view that family history plays role in HTN, 73.3% respondents said obesity also plays a role in HTN, 65% of respondents said smoking and 77.5% said stress are the risk factors for HTN, but by the study done by Selladurai Pirasath, et al, 2021, 70.6% of respondents said obesity is a risk factor for HTN, 69.9% said smoking is a risk factor for HTN and 62.7% said stress also takes part in risk factor for HTN [14].

In our study, 75% of respondents have knowledge that quitting smoking can help to cure HTN, 67.5% have point of view that doing physical exercise regularly can help to cure HTN, 69.17% have opinion that good mental health can also cure HTN and 85.8% said Doctor's guidance can cure HTN, but from the study of Qianfeng Yang, et al, 2024, 77.4% of respondents said quitting smoking can help to reduce HTN, 89.3% of respondents have point of view that doing physical exercise daily can cure HTN, 94.5% said good mental health and almost all respondents said Doctor's guidance can help to cure HTN [15].

Conclusion

Study concludes that hypertension prevalence is increasing worldwide and an estimated 972 million people in the world are suffering from HTN. Incidence rates of hypertension range between 3% and 18% depending on the age, gender, ethnicity and body size of the population. Mortality from stroke and ischemic heart disease doubles with each 20 mm Hg increase in systolic blood pressure from levels as low as 115mm Hg, and with each 10 mm Hg increase in diastolic BP from levels as low as 75 mm Hg.

In our point of view, by doing physical exercise, eating healthy food, quitting smoking and alcohol can help many people to deal with HTN. Good and healthy environment helps to get rid of HTN.

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