Assessment of Egyptian Adult's Knowledge and Perspectives on Hypertension and the Role of Capsicum, Turmeric & Garlic to Control It: A Cross-Sectional Study

***Sara A Heikal[1]; Mona AA Hussein[2]; Safaa A Tawfik[3] and Shereen E Hussein [1]**

1. Lecturer of Public Health and Community Medicine, Cairo University.
2. Fellow of internal medicine National Institute of Diabetes and Endocrinology.
3. Branch consultant, Assistant Professor of Childhood Studies -National Nutrition Institute

***Corresponding author: Sara A Heikal, Mobile: 01005222145, Email: Dr_s.HeiKal@yahoo.CA**

ABSTRACT

Hypertension is one of the avoidable diseases, prevention can be done by adopting healthy eating habits. There is growing interest in using alternative plants and herbal as medicines to treat and prevent hypertension. The study aims to explore the knowledge of Egyptian adults about hypertension and their perspectives to control it by consumption of capsicum, garlic, and turmeric. ***Methods: a*** *cross-sectional study. The 1008 participants need to fill anonymous questionnaire (Google form). They answer questions related to sociodemographic characteristics, history of hypertension, dietary habits, and use of turmeric, capsicum, and garlic to control hypertension. The study revealed (76.1 %) had a positive family history of hypertension. The prevalence of hypertension was (18.9%) in the studied group as perceived. Their knowledge about hypertension was from reading (39.3%) and social media (30.4%). (31 %) reported a reduction of salt intake to control hypertension. (30.9%) of the studied group trusted natural remedies to control BP. Participants who consume chili, garlic, and turmeric regularly noticed changes in their blood pressure (25 %, 35 %, 37.5 %) respectively. There was a significant association between the frequency of garlic, chili, and turmeric consumed and a change in blood pressure* $P \leq 0.05$. ***Conclusion:*** *knowledge about hypertension was from reading and social media, changing dietary habits such as decreasing salt intake, and trust in herbs such as chili, garlic, and turmeric to control hypertension. Regular consumption of herbs may have a potential effect in lowering blood pressure, further studies are recommended.*

Keywords: *Hypertension, Garlic, Capsicum, Turmeric, Dietary habits.*

INTRODUCTION

The National Institutes of Health classify hypertension as systolic blood pressure greater than 140 mmHg or diastolic blood pressure greater than 90 mmHg (**Loyd-Sherlock et al., 2014).** High-normal blood pressure previously known as pre-hypertension and borderline hypertension is a state of elevated blood pressure not reaching the cutoff for a diagnosis of hypertension, and One-third of cardiovascular diseases (CVDs) are attributed to HNBP, irrespective of associated comorbidity (**Egan and Stevens-Fabry, 2015).** The global prevalence of hypertension is projected to increase from 26% in 2000 to 29.2% by 2025, which will be approximately 29% of the world's population (**Lim et al., 2012)**.

In Egypt, a semi-systematic review was conducted and reported that the prevalence of hypertension among Egyptian adults appeared to be from 26 to 29.5%, and near to one-fourth (24%) of them received treatment. Few of the hypertensive patients only (8%) reported control of their blood pressure (**Reda et al., 2021)**. Moreover, near of half of the population (43.9%) was aware of their hypertensive status according to data obtained from the most recent Egyptian Health Issues Survey (EHIS) population (**Soliman et al., 2020).**

In 2019 guidelines of the American College of Cardiology (ACC) and the American Heart Association (AHA) reported that hypertension leads to athero-sclerotic cardiovascular disease (ASCVD) death more than any other modifiable ASCVD risk factor (**Soliman et al., 2019)**.
Prevention and managing hypertension can be done in different ways, in which it is possible to work on modifiable risk factors, such as changing Lifestyle as weight loss, physical exercise, decreased salt intake, reduced alcohol intake, and adopting healthy eating habits (**NHFA, 2018)**.

Prolonged intake of antihypertensive medications is associated with undesired side effects, so the researcher tried to find alternative treatments with minimal adverse effects and have comparable efficacy, and

affordable cost (**Driscoll, et al., 2019).**

Previous research has reported the benefit of herbs and spices in lowering high blood pressure, as they are rich sources of phytochemicals, and some have the value of health-promoting properties such as antioxidant, anti-inflammatory, and antihypertensive roles (**Rubio´ et al., 2013)**. The mechanisms of action of organo-sulfur compounds (in garlic) in lowering BP have been granted, mediation of intracellular nitric oxide and hydrogen sulfide production as well as blockage of angiotensin-II production, which in turn promotes vasodilation and thus reduces the (**Shouk et al., 2014).**

Evidence presented in many systematic literature reviews, that herbs and spices do not affect a normotensive population as turmeric and red pepper, Cinnamon, and other spices such as nigella sativa seeds powder, Korean red ginseng, and Dichrostachys glomerata spice; however, there was an effect on blood pressure especially noticed in high normal blood pressure population at their upper ranges (**Jung et al., 2016).**

This study aims to explore the knowledge of Egyptian adults regarding hypertension and their perspectives to control it by consumption of natural alternative plants and /or herbs such as capsicum, garlic, and turmeric.

METHODS

Study design:

This study is an analytical cross-sectional design.

Study setting and population:

The study was conducted among the adult Egyptian population to explore their knowledge of hypertension disease and their perspectives regarding the consumption of capsicum, turmeric, and garlic in the control of hypertension. The data collection period was from 30 May to 3 July 2021. During the study period, 1440 adult Egyptian individuals were invited to participate in the study to fulfill the questionnaire and 1008 out of them fulfilled the questionnaire with a

response rate of 70 %. The study was implemented in Egypt.

Sample type

Non-random snowball sampling was applied through emails and social communication tools such as Facebook and what's-App groups using Google form.

- Inclusion criteria:

a- Age: 18 – 65 years.
b- Both sexes.

- Exclusion criteria:

a- Age below 18 or above 65 years.
b- Chronic disease rather than hypertension, diabetes, or ischemic heart disease.

Sample size calculation:

The sample size was calculated according to an Open Epi program version 3 assuming a confidence interval of 95% and a margin of error of 5% with the power of the test of 90% and three pairwise comparisons and according to the prevalence of hypertension among Egyptian adult population around 20%, The sample size needed was 246 participants. The sample size was increased above the calculated to avoid a shortage of data or incomplete data. The total sample collected was 1008.

Pilot test:

The questionnaire was tested on 10 individuals to check the questions' validity and clarity and estimate the time needed to complete the questionnaire. The questionnaires of the pilot study were not included in the analysis.

Data collection tool:

A structured self-administered anonymous questionnaire was used to collect data which was developed by the researchers based on questions extracted from previous studies. The questionnaire was prepared to be in Google form and was distributed to the participants through emails and social communication tools such as Facebook and what's-App groups after explaining the objectives of the study to the participants.

***The questionnaire includes the following sections*:**

1. Section for socio-demographic characteristics includes Age, sex, occupation, and marital status.
2. Section for medical history, History of chronic diseases.

3. Section for dietary habits as eating fruit, vegetables, and frequency of salt and fat intake.
4. Section for hypertension knowledge, causes, and methods used to control it.
5. Section for knowledge about the use of natural alternatives such as capsicum, turmeric, and garlic to control hypertension.

Statistical analysis

The completeness and logical consistency of the collected questionnaires were revised. The data were pre-coded and entered into Microsoft Office Excel program for Windows, 365. Data were transferred to the Statistical Package for the Social Sciences version 21 (SPSS-V 21) for data analysis. Quantitative variables were described as mean, SD, and median while qualitative variables were expressed as number and percentage. The chi-square test and fissure exact test were used to compare qualitative variables between groups, we compare the frequency of the species used after regular consumption with a noticeable change in blood pressure. Fisher's exact test was used when expected cells are <5, $p \leq 0.05$ significant and $p < 0.01$ highly significant.

Ethical consideration

The informed consent was sent electronically and obtained from all participants before recruitment to the study after explaining the goals of the study. Confidentiality was guaranteed in handling the database and questionnaire forms according to the revised Helsinki Deceleration of biomedical ethics.

RESULTS

Table 1 shows that nearly three-quarters 76.3% of the study group were females, more than half of the study group their age was more than 35 years, and three-quarters of them 75.4 % were married. Unfortunately, three-quarters of 76.1 % of the study group had a positive family history of hypertension and nearly one-third 31 % of the study group had chronic diseases, the most prevalent chronic disease was hypertension followed by DM (38.78% &10.25 % respectively). The total number of hypertensive

individuals in the studied group (n=1008) was 191(18.9%).

Table 2 shows that more than half of the study group reported eating fruits and vegetables regularly (59.7% & 65.3 % respectively), and the majority reported eating fruits and vegetables more than three times/week (81.7 % &89.8 % respectively), and nearly two-thirds reported using clarified butter and vegetable oil for processing of food (62.8 % & 64.8 % respectively) while nearly half 49.3 % prefer to add salt on the table during eating.

Table 3 shows that more than one-third of the hypertensive group in our study 39.3 % reported that the main source of information regarding hypertension is reading, and 38.7% reported that stress is the main cause of their hypertension status from their perspectives. Nearly one third31% reported that reduction of salt intake is the main method to prevent or control hypertension. Among hypertensive patients, the majority 89.2 % reported that they are on antihypertensive medications on regular bases, and 72.7% reported that their BP is often controlled.

Table 4 shows that one-third of the hypertensive group 30.9% reported that they trust that natural remedies help in controlling their blood pressure, also they reported that they consume chili, garlic, and turmeric regularly (10.47 %, 20.9 %,8.4 %) respectively. Moreover, from their perspectives, the consumption of chili, garlic, and turmeric regularly helps to change their blood pressure (25 %, 35%, 37.5 %) respectively.

Table 5 shows that there was a significant association between daily consumption of spices and a noticeable change in blood pressure from the participants' perspectives with $P \leq 0.05$.

DISCUSSION:

The current study was carried out among the Egyptian population, and it showed that more than half of the participants were from 35-55 years (57%), and only (14.2%) of the participants were above 55 years as presented in Table 1, the opposite has

appeared in a study carried in Palestine as the majority of participants were above 50 years (**Ali-Shtayeh, 2013)**.

The females represent more than three-quarters (76.3%) of our study participants with (13%) housewives, which is quite similar to the Jordian study which showed female participation (69.6%) and (14%) of them were housewives (**El-Dahiyat, et al., 2020).**

The present study found that three-quarters of participants (76.1%) had a positive family history of HTN and the prevalence of comorbidities is (31%) in the studied group, more than one-third of the associated comorbidities was hypertension (38.78%), DM was (10.25%), cardiovascular diseases were (4.5%), and the cases who had DM and HTN together was (14.4%). 2 cross-sectional studies were implemented to study the prevalence of the DM and HTN and the **El-Dahiyat, et al., (2020)** found that the prevalence of DM was (9.5%) and cardiovascular diseases were (2.1%) which was quite similar to our results, but HTN was (5.6%) only. The other study was carried out in an outpatient clinic at a teaching hospital in the UK in which the hypertensives were (11%) and diabetics were (15.7%) (**El-Dahiyat et al., 2020; Gohar et al., 2008)**.

Regarding dietary habits, as it is the main modulator of hypertension status, the search found that more than half of the participants consume fruits (59,7%) and vegetables (65.3%) on regular bases in their meals as presented in Table 2. As well as one-third of the studied group (31%) prefer to decrease salt and (22.5%) decrease fat in their meals to control hypertension. Moreover, the majority (67.5%) last measure of their blood pressure was in less than a month as presented in Table 3. This reflected the knowledge and awareness of the studied group about healthy diet, healthy lifestyle, and the importance of follow-up of blood pressure.

Among the hypertensive group which was (18.9%) of the studied population, there were many causes of hypertension as perceived by them, presented as (38.7%) of the hypertension was due to stress, (22%) due to family history followed by (21.5%) was related to the obesity as presented

in table 1 &3. The current result was in agreement with **Mohammed et al, (2016)** in which they found in an across-section study conducted in 2 peri-urban communities in Accra, Ghana that (28%) of the subjects were hypertensive and (55.5%) of the hypertension status was due to chronic stress.

Moreover, this study found that (92.1%) of the hypertensive group was on antihypertensive medication, and most of them (89.2%) were adherent to the treatment as shown in Table 3 which reflects their awareness about the importance of the treatment to control the hypertension. This was greater than results found in a study conducted UK in which 196 patients attended the hypertension clinic, half of them only (56%.7 of the males and 50,7% of the females) were adherent to the antihypertension treatment. The author of the study concluded that the use of alternative medicine was significantly associated with reduced adherence to anti-hypertensive medication for females (**Gohar, et al., 2008)**.

On the other hand, one-third (30.9%) of the hypertensive group in the present study trust natural remedies and spices to control their hypertension status as presented in Table 4, and this is quite similar to the figure found in the study in the UK in which (26.1%) using alternative medicine (**Gohar, et al., 2008)**. Furthermore, a study was conducted in Singapore in which the prevalence of complementary and alternative medicine users was (14.5%) (**Lee et al., 2004)**.

The current study noticed that the hypertensive group consumes natural remedies such as chili, garlic, and turmeric on regular bases to control their hypertension (10.47%, 20.9%, 8.4%) respectively as shown in Table 4. They notice a change in hypertension from their perspectives while on regular use of chili, garlic, and turmeric (25%, 35%, 37.5) respectively.

This study found a significant association between daily consumption of garlic, chili, and turmeric and a noticeable change in blood pressure from the perspective of our hypertensive studied group (P <0.001) as

mentioned in Table 5. On the other hand, **Lawson and Hunsaker, (2018)** reported that the effect of garlic may be dose-dependent and affected by oral bioavailability and rapid metabolism so more randomized studies are needed to confirm present results for the role of these spices on hypertension status among Egyptian population.

Previous studies were conducted to explore the effect of using herbs and spices to control hypertension. A systematic review found that the garlic group's systolic blood pressure was lower (**Mulawarman, et al., 2021)**. Also, a meta-analysis study was done by 553 adults with uncontrolled hypertension to prove the effect of garlic in reducing blood pressure by 8-10 mmHg systolic and by 5-6 mmHg diastolic (**Ried 2019).** Another systematic review study for randomized clinical trials was applied to assess the effect of turmeric on systolic and diastolic blood pressure and reported a significant reduction only in systolic BP levels in long duration of turmeric supplementation with no effect on diastolic BP (**Hadi, et al., 2019)**.

CONCLUSION

This study has shown that 18.9% of the studied group were hypertensive, and the cause of their hypertension status was mainly due to stress. Their knowledge about hypertension was from reading and social media. Among the hypertensive group, the majority are on antihypertension treatment, at the same time they change their dietary habits to control hypertension by decreasing salt and fat intake and trusting in spices and herbs such as chili, garlic, and turmeric to control hypertension. Frequency of use of herbs and spices may have a potential effect in lowering blood pressure, further clinical trial studies are recommended to confirm the efficacy of garlic, chili pepper & turmeric on the hypertensive population. Also, combine the herbs/ spices (quantity and duration of consumption) with other antihypertensive drugs to investigate their possible synergistic effects as well as their pharmacological properties in reducing blood pressure. Moreover, future clinical trials could explore the effect of genetic

factors and nutritional status on the individual's responsiveness to garlic therapy with different doses and duration for hypertension.

REFERENCES:

Ali-Shtayeh MS (2013):
Complementary and alternative medicine (CAM) use among hypertensive patients in Palestine. *Complement The Clin Pract*; 19: 256–263.

Arnett DK; Blumenthal RS; Albert MA; Buroker AB; Goldberger ZD; Hahn EJ; Himmelfarb CD; Khera A; Lloyd-Jones D; McEvoy JW; Michos ED; Miedema MD; Muñoz D; Smith SC Jr; Virani SS; Williams KA Sr; Yeboah J and Ziaeian B (2019):
ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease: A Report of the American College of Cardiology / American Heart Association Task Force on Clinical Practice Guidelines. *J. Am. Coll. Cardiol.* 10; 140 (11): e 596 -e646.

Driscoll KS; Appathurai A; Jois M and Radcliffe JE (2019):
Effects of herbs and spices on blood pressure: a systematic literature review of randomized controlled trials. *Journal of hypertension*, 37(4), 671-679.

Egan BM and Stevens-Fabry S (2015):
Prehypertension—prevalence, health risks, and management strategies. *Nat Rev Cardiol.* May; 12 (5):289.

El-Dahiyat F; Rashrash M; Abuhamdah S; Farha R; and Badar Z (2020):
Herbal medicines: a cross-sectional study to evaluate the prevalence and predictors of use among Jordanian adults. *J of Pharm Policy and Pract.*; 13, 2.

Gohar F; Greenfield SM; Beevers DG; Lip GY and Jolly K (2008):
Self-care and adherence to medication: a survey in the hypertension outpatient clinic. *BMC Complement Altern Med.* 8; 8:4.

Hadi A; Pourmasoumi M; Ghaedi E and Sahebkar A (2019):
The effect of Curcumin / Turmeric on blood pressure modulation: A systematic review and meta-analysis, *Pharm-acological Research*: 104505.

Jung DH; Lee YJ; Kim CB; Kim JY; Shin SH and Park JK (2016):
Effects of ginseng on peripheral blood mito-chondrial DNA copy number and hormones in men with metabolic syndrome: a randomized clinical and pilot study. *Complement Their Med.* 2016; 24:40–46.

Lawson LD and Hunsaker SM (2018):
Allicin Bioavailability and Bioequivalence from Garlic Supplements and Garlic Foods. *Nutrients.* 24;10 (7):812.

Lee GBW; Charn TC; Chew ZH and Ng TP (2004):
Complementary and alternative medicine use in patients with chronic diseases in primary care is associated with perceived quality of care and cultural beliefs. *Fam. Pract.*; **21: 654** –660.

Lim SS; Vos T; Flaxman AD; Danaei G; Shibuya K; Adair-Rohani H; et al (2012):
A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* (London, England).; 380:2224–60.

Loyd-Sherlock P; Beard J; Minicuci N; Ebrahim S and Chatterji S (2014):

Hypertension among older adults in low- and middle-income countries: prevalence, awareness, and control. *Int J Epidemiol*.; 43:116–28.

Mohammed H; Ghosh S; Vuvor F; Mensah-Armah S and Steiner-Asiedu M (2016):
Dietary intake and the dynamics of stress, hypertension and obesity in a peri-urban community in Accra. *Ghana. Med J*.;50 (1):16-21.

Mulawarman R; Trifitriana M; Felani; Muhammad R; Mulawarman; T and Alexander E (2021):
Garlic Effect on Reduce Blood Pressure and Cholesterol in Patients with and Without Hypertension: A Systematic Review and Meta-Analysis of Randomized Controlled Trials, *Journal of Hypertension:* Volume 39 - Issue - p e4

"NHFA" National Heart Foundation of Australia and Cardiac Society (2018):
High blood pressure statistics; 2018. http:// heart foundation. org. au/about-us/what-we-do/ heart - disease-in-Australia/ high-blood- pressure-statistics.

Reda A; Ragy H; Saeed K and Alhussaini MA (2021):
A semi-systematic review on hypertension and dyslipidemia care in Egypt highlighting evidence gaps and recommendations for better patient outcomes. *J Egypt Public Health Assoc.* 1; 96 (1): 32.

Ried K (2019):
Garlic lowers blood pressure in hypertensive subjects, improves arterial stiffness and gut microbiota: A review and meta-analysis. *Exp Their Med.*;19(2):1472-1478.

Rubio´ L; Motilva M-J and Romero M-P (2013):
Recent advances in biologically active compounds in herbs and

spices: a review of the most effective antioxidant and anti-inflammatory active principles. *Crit Rev Food Sci Nutr*.; 53:943–953.

Shouk R; Abdou A; Shetty K; Sarkar D; Eid A (2014):
Mechanisms underlying the antihypertensive effects of garlic bioactive. Nutr Res; 34:106–115.

Soliman SS; Guseman EH; Haile ZT; Ice GH (2020):
Prevalence and determinants of hypertension unawareness in Egyptian adults: a cross-sectional study of data from the 2015 Egyptian Health Issues Study. *Lancet Glob Heal.* ;8: S20.

Table (1): Distribution of the study population according to their socio-demographic characteristics and medical history (n=1008):

Socio-demographic characteristics and medical history	N (%)
Gender	
Male	239 (23.7)
Female	769 (76.3)
Age	
18-25	79 (7.8)
26-35	200(19.8)
36-45	369(36.6)
46-55	217(21.5)
› 55	143 (14.2)
Marital status	
Single	158 (15.7)
Married	760(75.4)
Divorced	90 (8.9)
Occupation	
Unemployed	66(6.55)
Professional	705 (69.9)
Student	65 (6.45)
Housewife	135 (13.4)
Retired	37 (3.7)
Smoking status	
Ever smoked (n=1008)	
Yes	217 (21.53)
No	791 (78.47)
Current smoker (n= 217)	
Yes	86 (39.6)
No	131 (60.4)
Type of smoking (n=217)	
Cigarette	47 (21.7)
Shisha	25 (11.5)
Both	145 (66.8)
Perform exercise	153(15.2)
Family history of hypertension	767(76.1)
Comorbidity	312 (31)

Con. Table 1

Type of comorbidity (n=312)	
DM	**32 (10.25)**
HTN	**121(38.78)**
DM & HTN	**45 (14.4)**
CVS	**14 (4.5)**
HTN &CVS	**10 (3.2)**
DM, HTN & CVS	**15 (4.8)**
Others	**75 (24)**

Table (2): Distribution of the study population according to their dietary habits (n =1008):

Dietary habits	N (%)
Eating fruits regularly	**602 (59.7)**
Frequency of eating fruits/week (n=602)	
Once	**6 (1)**
Twice	**24 (4)**
Three times	**80 (13.3)**
› Three times	**492 (81.7)**
Eating vegetables regularly	**658 (65.3)**
Frequency of vegetables/week (n=658)	
Once	**4 (0.6)**
Twice	**15 (2.3)**
Three times	**48 (7.3)**
› Three times	**591 (89.8)**
Prefer to add salt on the table during the eating	**497 (49.3)**
Type of fat used for processing of food.	
Butter	**487 (48.3)**
Clarified butter.	**633 (62.8)**
Margarine	**205 (20.3)**
Vegetable oil	**653 (64.8)**
All types	**172 (17.1)**

Table (3): Distribution of the study population according to their knowledge concerning hypertension and their hypertensive status (n=191):

Medical history of hypertension	**N (%)**
Source of information regarding hypertension	
Personal readings	**75 (39.3)**
Internet & social media	**58 (30.4)**
private clinic	**40 (20.9)**
General hospitals	**15 (7.8)**
Health education	**3 (1.6)**
Causes of hypertension status from their perspectives	
Stress-related.	**74 (38.7)**
Hereditary	**42 (22)**
Obesity	**41 (21.5)**
Age	**28(14.7)**
Medication	**15 (7.8)**
All	**60 (31.4)**
Methods used to prevent / control hypertension.	
Decrease salt intake.	**59 (31)**
Decrease fat intake.	**43 (22.5)**
Medicine	**42 (22)**
Physical exercise	**19 (10)**
Alternative medicine	**15 (7.8)**
Quit smoking.	**6 (3.1)**
Spices	**5(2.6)**
Nothing	**2 (1)**
Use of antihypertension medication	**176 (92.1)**
Use of the antihypertension medication on regular bases (n= 176)	**157 (89.2)**
Last time measured blood pressure (n=191)	
‹ Month	**129 (67.53)**
2-4 months	**42 (22)**
› 4 months	**20 (10.47)**
Blood pressure is often controlled (n=191)	**139 (72.7)**

Table (4): Distribution of the hypertensive group according to their responses regarding trust in using spices, chili, garlic, and turmeric in controlling blood pressure (n=191):

Responses regarding trust of spices, chili, garlic, and turmeric in controlling blood pressure	**N (%)**
Using natural remedies helps to control blood pressure	**59 (30.9)**
The most commonly used spices (n=59)	
Garlic	**37 (62.7)**
Chili	**26 (44)**
Turmeric	**16 (27.1)**
others	**17 (28.8)**
Frequency of using these remedies (n =59)	
Daily	**12 (20.3)**
weekly	**11 (18.6)**
monthly	**2 (3.4)**
on demand	**34 (57.6)**
Consume chili on regular bases (n= 191)	**20 (10.47)**
Frequency of eating chili (n = 20)	
Daily	**7 (35)**
weekly	**4 (20)**
Monthly	**1 (5)**
On-demand	**8 (40)**
The quantity used from chili (n= 20)	
1/4 tsp	**12 (60)**
1/2 tsp	**4 (20)**
3/4 tsp	**1 (5)**
1 tsp	**1 (5)**
› 1 tsp	**2 (10)**
Noticeable change in blood pressure from their perspectives while using chili (n =20)	**5 (25)**

Con. Table 4

Consume garlic on regular bases (n = 191)	**40 (20.9)**
Frequency of eating garlic powder, minced or cloves (n = 40)	
Daily	**23 (57.5)**
weekly	**5 (12.5)**
Monthly	**1 (2.5)**
On-demand	**11 (27.5)**
Quantity of garlic powder or minced used (n= 22)	
1/4 tsp	**2 (9.1)**
1/2 tsp	**7 (31.8)**
3/4 tsp	**4 (18.2)**
1 tsp	**3 (13.6)**
› 1 tsp	**6 (27.3)**
Quantity of garlic cloves used (n=18)	
½ average clove	**2 (11.1)**
1 average clove	**8 (44.4)**
2 average cloves	**6 (33.3)**
>2 average clove	**2 (11.1)**
Noticeable change in blood pressure from their perspectives while using garlic (n =40)	**14 (35)**
Consume turmeric regularly (n =191)	**16 (8.4)**
Frequency of eating turmeric (n= 16)	
Daily	**8 (50)**
weekly	**4 (25)**
Monthly	**0 (0)**
On-demand	**4 (25)**
Quantity of turmeric used (n = 16)	
1/4 tsp	**8 (50)**
1/2 tsp	**4 (25)**
3/4 tsp	**1 (6.25)**
1 tsp	**1 (6.25)**
› 1 tsp	**2 (12.5)**
Noticeable change in blood pressure from their perspectives while using turmeric (n = 16)	**6 (37.5)**

Table (5): Association between frequency of consumed spices and the perception of change in blood pressure.

Frequency of consumption	Frequency of eating chili & Noticeable change in BP (n=5)	*P*-value*	Frequency of eating turmeric &Noticeable change in BP (n=6)	*P*-value*	Frequency of eating garlic & Noticeable change in BP (n=14)	*P* -value*
Daily	4 (80%)	**<0.001**	4 (66.7%)	**<0.001**	10 (71.4%)	**<0.001**
Weekly	0 (0%)		1 (16.7%)		2 (14.3%)	
Monthly	0 (0%)		0 (0%)		0 (0%)	
On-demand	1 (20%)		1 (16.7%)		2 (14.3%)	

*: Fisher's exact test.

تقييم معرفة ووجهات نظر البالغين المصريين حول ارتفاع ضغط الدم ودور الفليفلة والكركم والثوم للسيطرة عليه: دراسة مقطعية

ساره احمد هيكل1، منى عبد المطلب عبد الفتاح حسين2، صفاء الحسيني توفيق3 و شرين عصمت حسين1

1 مدرس الصحة العامة وطب المجتمع، جامعة القاهرة
2 زميل باطنه عامه، معهد السكر والغدد الصماء
3 أستاذ مساعد متفرغ في دراسات الطفولة: المعهد القومي للتغذية

الملخص العربي

ارتفاع ضغط الدم هو أحد الأمراض التي يمكن تجنبها، ويمكن الوقاية منه من خلال اتباع عادات الأكل الصحية. هناك اهتمام متزايد باستخدام الأعشاب والنباتات البديلة كأدوية في علاج ارتفاع ضغط الدم والوقاية منه. ***هدف الدراسة:*** *استكشاف معرفة البالغين المصريين عن ارتفاع ضغط الدم ووجهات نظرهم للسيطرة عليه عن طريق استهلاك الفليفلة والثوم والكركم.* ***منهج البحث:*** *دراسة مقطعية. يحتاج المشاركونوهم(١٠٠٨) إلى ملء استبيان بدون اسم (نموذج Google). يجيبون فيه على الأسئلة المتعلقة بالخصائص الاجتماعية والديموغرافية، وتاريخ ارتفاع ضغط الدم، والعادات الغذائية واستخدام الكركم والفليفلة والثوم للسيطرة على ارتفاع ضغط الدم. كشفت الدراسة أن (١ .٧٦٪) لديهم تاريخ عائلي إيجابي لارتفاع ضغط الدم. و بلغ معدل انتشار ارتفاع ضغط الدم في المجموعة المدروسة كما هو متصور لديهم(٩ .١٨٪) . كانت معرفتهم عن ارتفاع ضغط الدم من القراءة (٣ .٣٩٪) ووسائل التواصل الاجتماعي (٤ .٣٠٪). أوضحت الدراسة ان هناك (٣١٪) انخفاض في تناول الملح للسيطرة على ارتفاع ضغط الدم. و(٩ .٣٠٪) من المجموعة المدروسة يثقون بالعلاجات الطبيعية للسيطرة على ارتفاع ضغط الدم. لاحظ المشاركون الذين تناولوا الفلفل الحار والثوم والكركمين بانتظام تغيرًا في ضغط الدم (٢٥٪،٣٥٪ ،٥ .٣٧٪) على التوالي. كان هناك ارتباط معنوي بين تكرار تناول الثوم والفلفل الحار والكركمين والتغير في ضغط الدم، P اقل من ٠.٠٥ .* ***الخلاصة:*** *كانت المعرفة حول ارتفاع ضغط الدم من خلال القراءة ووسائل التواصل الاجتماعي، تغيير العادات الغذائية مثل تقليل تناول الملح والثقة في الأعشاب مثل الفلفل الحار والثوم والكركمين للسيطرة على ارتفاع ضغط الدم. قد يكون للاستهلاك المنتظم للأعشاب تأثير محتمل في خفض ضغط الدم، ويوصى بإجراء مزيد من الدراسات..*

الكلمات المفتاحية: *ارتفاع ضغط الدم،الثوم،الفليفلة، الكركم، العادات الغذائية.*