Lifestyle Pattern for Patients with Hypertension

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Abstract

Background: Compliance with antihypertensive treatment and lifestyle pattern plays an essential role in reducing blood pressure and preventing complications of hypertension. **The study aimed to** assess lifestyle pattern among hypertensive patients. **Research design:** A descriptive research design was utilized in this study. **Setting:** The study was conducted at the Medical Outpatient Clinics in Benha University Hospital**. The sample:** A simple random sample was utilized; the sample size was 140 hypertensive patients. **Tools: Two tools were used 1):** An interviewing questionnaire to assess studied patients' socio-demographic characteristics, medical history and knowledge about hypertension **II)** Hypertension evaluation lifestyle and management scale. **Results**: Showed that; 58.6% of studied patients had average total knowledge score about hypertension, while 34.3% had poor total knowledge score and only 7.1% had good total knowledge about hypertension. 79.3% of studied patients had unhealthy lifestyle pattern. **Conclusion**: There was no statistically significant difference between total knowledge of studied hypertensive patients and their lifestyle pattern. **Recommendations:** Health education program should be conducted to improve patients' adherence to a healthy lifestyle pattern.

Keywords: Lifestyle, Hypertension, Management.

Introduction

Hypertension (HTN) is one of the most common non communicable diseases that has been more prevalent nowadays than before. Chronically elevated Blood Pressure (BP) in the systemic arteries is diagnostic of systemic arterial HTN. The standard method of expressing BP is as a ratio between the systolic and diastolic readings. A systolic BP 130-139mmHg and/or a diastolic BP 85-89mmHg identifies people with high-normal BP who would benefit from lifestyle intervention to prevent progression to established HTN. Assessment of cardiovascular disease risk is important in this group during evaluation to decide on optimum management and patients with high-normal BP require follow-up to detect development of HTN **(Elgendy et al., 2022)**.

Hypertension is one of the leading causes of disability and death in both developed and developing countries. Globally, 20% to 40% of mortality is attributed by cardiovascular disease. Globally, 1.5 billion (29%) of adult population are expected to have develop hypertension by the year 2025. About 30.8% and 12.8% of hypertension reports in African and Sub-Saharan Africa respectively **(Smachew et al., 2022)**.

High blood pressure is one of the major risk factors for developing cardiovascular disease, cerebral infarction, heart failure, and kidney failure. Medication is still an important part of HTN disease treatment but also, lifestyle changes known as non-pharmacologic therapy, are often suggested as a first line of HTN treatment. Adherence to healthy lifestyle practices were measured based on respondents who adhere to Dietary Approaches to Stop

Hypertension (DASH) diet they usually or always consumed a diet rich in vegetables, grains, and fruits; rarely or never consumed salt at least 3 times per week, aerobic exercise for > 30 minutes per day; at least three times per week, avoid stressful situations, stop smoking, and stop alcohol intake **(Wakjira et al., 2022).**

Lifestyle modification play a critical role in both hypertensive and non-hypertensive patients. Lifestyle changes can be used in hypertensive patients as an initial treatment before starting pharmacologic therapy and as an adjunct to drug treatment in those already receiving it. These treatments can support medication withdrawal and reduction in hypertensive patients with medication-controlled blood pressure if highly motivated patients successfully implement and maintain lifestyle changes. Lifestyle changes in non-hypertensive patients may prevent hypertension and, more broadly, lower BP **(Charchar et al., 2024).**

Community health nurse is responsible for routinely screening and diagnosing HTN through accurate BP measurement, providing patient education on the importance of HTN prevention and control through heart-healthy lifestyle, routinely screening for and providing early evidence-based interventions for depression and anxiety to control hypertension, screening for other common comorbidities such as diabetes and initiating evidence-based treatment regimens as needed, using motivational interviewing to assist patients with healthy lifestyle behavior change, ensuring adequate treatment, timely follow-up, treatment intensification, and, if needed, referrals to specialists until, regularly assessing for side effects of hypertension medication, adherence to antihypertensive therapy, and lifestyle changes **(Sawyer et al., 2020).**

Significance of the problem:

Hypertension is a highly prevalent health problem in Egypt. In Egypt 17.8 million of the adult population has HTN. Hypertension incidence increases with aging, around 50% of Egyptians have hypertension. It might result from an unhealthy lifestyle and aging. The most recent national survey reported the prevalence of HTN and dyslipidemia at 29.5% and 19.2%, respectively **(Elbialy et al., 2022).**

HTN is the main cause of disability and mortality in the world, it can lead to serious complications. Therefore, compliance with antihypertensive treatment and lifestyle modification is very essential to prevent complications of hypertension, so, the study was conducted to enhance knowledge and modify lifestyle of hypertensive patients.

Aim of the study

The aim of this study was to assess lifestyle pattern among hypertensive patients.

Research questions:

- What is the knowledge of studied patients about HTN?
- What are the lifestyle patterns of hypertensive patients?
- Is there a relation between knowledge and lifestyle pattern of studied patients?

Research design:

A descriptive research design was utilized in this study.

Setting:

The study was conducted at the Medical Outpatient Clinics in Benha University Hospital.

Sampling:

A simple random sample was utilized

Sampling size: Sample size was calculated using the following formula

$$n = \frac{N}{1+N(e)2}$$

Where "n" is the sample size. "N" is the total number of hypertensive patients attending to

the Medical Outpatient Clinics in Benha University Hospitals at year 2022
"e" is coefficient factor = 0,05. N= 982.
This study carried on 140 hypertensive patients only.

Tools of data collection: Two tools were used for data collection:

Tool 1: An interviewing questionnaire: It consisted of three parts to assess the following:

First Part: Socio-demographic characteristics of the studied patients. It included 7 items closed ended questions about age, sex, marital status, residence, level of education, occupation and monthly income.

Second Part: Medical history of hypertensive patients consisted of 10 items closed ended questions about presence of chronic diseases , family history of hypertension, duration of disease, discovering of disease by, signs and symptoms before discovering disease, number of hospital admissions due to hypertension, number of visiting the outpatient clinic for follow-up hypertension, number of cigarettes the patient smoked per day, problems result in smoking and current symptoms of disease.

Third part: It was developed to assess the patient's knowledge about hypertension, which included 10 closed ended questions (multiple choice type) about meaning of HTN, types of HTN, meaning of primary HTN, meaning of secondary HTN, causes, signs and symptoms, diagnosis, prevention, treatment, complication of hypertension and question about source of their knowledge**.**

Scoring system for knowledge about hypertension: Knowledge score for each answer was given as follows: 2= Complete & correct answer, and 1= Incomplete & correct answer, while 0 = Don't know

The total score knowledge ranged from 0 to 20. Those who achieved ≥75% from the total score (≥ 15 points), was considered good, while considered average if it equaled 50 - < 75% from the total score (10 - < 15points), and considered poor if it was < 50% from the total score (< 10 points).

Tool II: Hypertension Evaluation Lifestyle and Management (HELM) Scale: That was modified to assess patient's healthy lifestyle which adopted from **(Hill et al., 2000; Schapira et al., 2012).**

The scale was divided into three categories: always (3), sometimes (2) and never (1). It was developed to assess the patients' lifestyle practices, which included 39 questions about **nutrition** and included 9 items. **Treatment and follow up** included 5 items. **Physical activity** included 6 items. **Rest and sleep** included 5 items. **Psychological health** included 10 items. **Finally social activity** included 4 items.

These scores were summed up, converted into percentage and divided into: **Total scores of lifestyle = 117 points - Healthy:** When the total score more than ≥ 60% = ≥ 70.2 points. **Un healthy:** when the total score less than < 60% = < 70.2 points.

Reliability:

All tools for data collection were tested for its reliability using test retest reliability. The reliability of the study instrument was tested using Cronbach Alpha. Reliability knowledge =0.792, lifestyle =0.762 indicating good reliability of the instrument. It was acceptable inters the consistency.

Validity of the tools:

All tools for data collection were tested for its content validity by 5 experts in community health nursing specialty, Faculty of Nursing 2 from Mansoura University and 3 from Benha University who reviewed the tool for clarity, relevance, completeness, applicability and required modification was carried out.

Ethical consideration:

The written approval was taken from research ethical community, Faculty of

Nursing, Benha University. Ethical code **REC.CHN.P69**. The agreements for participation were taken after the purpose of the study was explained to the patients before data collection, the patients were informed about the aim and nature of the study and what would be done with the results. The patients could withdraw at any stage of the study, also they were assured that the information would remain confidential and used for research purpose only. The researchers emphasized that participation in the study is entirely voluntary and anonymity of the patients were assured through data coding.

Pilot study:

The pilot study was conducted on 10% of the studied sample size represented 14 patients. The pilot study was aimed to test the feasibility, clarity, applicability of the tools and time needed to fill each sheet, completing the sheet consuming time about 10 to 15 minutes. No modifications were done, so the pilot study sample was included to the total sample.

Field work:

The study was conducted by researchers for the hypertensive patients from Medical Outpatient Clinics in Benha University Hospital after taking the legal aspect of ethics in research and getting the necessary official permission. The actual field work was carried out over a period of six months from the beginning of May 2024 up to the end of October 2024 3 days/week from 9am to 1pm. The average number of interviewed hypertensive patients was between 3-4 patients /day.

Statistical Analysis:

The collected data were organized, tabulated and analyzed using appropriate statistical test. The data were analyzed by using the Statistical Package for Social Science (SPSS), version 21, that was used to calculate frequencies and percentages mean and standard deviation, also statistical significance and associations by using correlation (r) to detect the association between the variables (p value).

The observation difference and associations were considered as following: Highly statistically significance ($p \leq 0.001$)**. Statistically significance ($p < 0.005$)*. Not statistically significant ($p > 0.005$).

Results:

Table (1): Shows that; 35.0% of studied patients aged from 35-40 years old with the mean ±SD 40.19±5.64 years. 50.7% of studied patients were males. 40% of them had above average education.

Table (2): Shows that; 65.7% of studied patients didn't suffer from any chronic diseases. 72.9% of them had family history of hypertension from first degree and 90.0 % of them had hypertension from less than 5 years.

Table (3): Shows that; 86.4% of studied patients had incomplete and correct answer about meaning of hypertension. 67.9% didn't know meaning of secondary hypertension. 7.1% had complete and correct answer about signs and symptoms and complications.

Figure (1): Represents that; 7.1% of studied patients had good knowledge about hypertension. 58.6% of them had average knowledge, while 34.3% of them had poor knowledge about hypertension

Table (4): Shows that; 32.9% of studied patients had satisfactory nutritional practices, while 87.9% had unsatisfactory practices of rest and sleep

Figure (2): Represents that; 20.7% of studied patients had satisfactory total lifestyle.

Table (5): Shows that, there was no statistically significant difference between total knowledge about hypertension and their total lifestyle pattern **($p > 0.005$).**

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Table (1): Socio-demographic characteristics of studied patients (n=140).

Socio-demographic characteristics	No	%
Age		
30->35	33	23.6
35- >40	49	**35.0**
40->45	14	10.0
45 – 50	44	31.4
Mean ±SD	40.19±5.64	
Sex		
Male	69	50.7
Female	71	49.3
marital status		
Single	20	14.3
Married	61	**43.6**
Divorced	33	23.6
Widowed	26	18.6
Residence		
Urban	68	51.4
Rural	72	48.6
Level of education		
Secondary	37	26.4
Above average	56	**40.0**
University	37	26.4
Postgraduate	10	7.1
Occupation		
Works	89	**63.6**
Not worked	51	36.4
Income		
Enough only	23	16.4
Not enough	117	83.6

Table (2): Medical history of studied patients (n= 140)

Medical history	No	%
Presence of chronic diseases		
Arthritis	48	34.3
None	92	**65.7**
Family history of hypertension		
First degree	102	**72.9**
Second degree	22	15.7
None	16	11.4
Duration of disease\ years		
<5years	126	**90.0**
5-10 years	14	10.0
Discovering disease by		
Measuring blood pressure	88	62.9
Feeling signs and symptoms of disease	24	17.1
Visiting the doctor	28	20.0
Signs &symptoms before discovering disease		
Headache	38	27.1
Chest pain	37	26.4
Nosebleeds	31	22.1
Nothing	34	24.3

Table (3): Knowledge of studied patients about hypertension (n=140).

Knowledge about hypertension	Complete correct answer		Incomplete correct answer		Don't know	
	No	%	No	%	No	%
Meaning	3	2.1	121	86.4	16	11.4
Types	27	19.3	27	19.3	86	61.4
Meaning of primary hypertension	5	3.6	59	42.1	76	54.3
Meaning of secondary hypertension	9	6.4	36	25.7	95	67.9
Causes	7	5.0	48	34.3	85	60.7
Signs and symptoms	10	7.1	88	62.9	42	30.0
Diagnosis	8	5.7	116	82.9	16	11.4
Prevention	13	9.3	77	55.0	50	35.7
Treatment	13	9.3	94	67.1	33	23.6
Complication	10	7.1	85	60.7	45	32.1

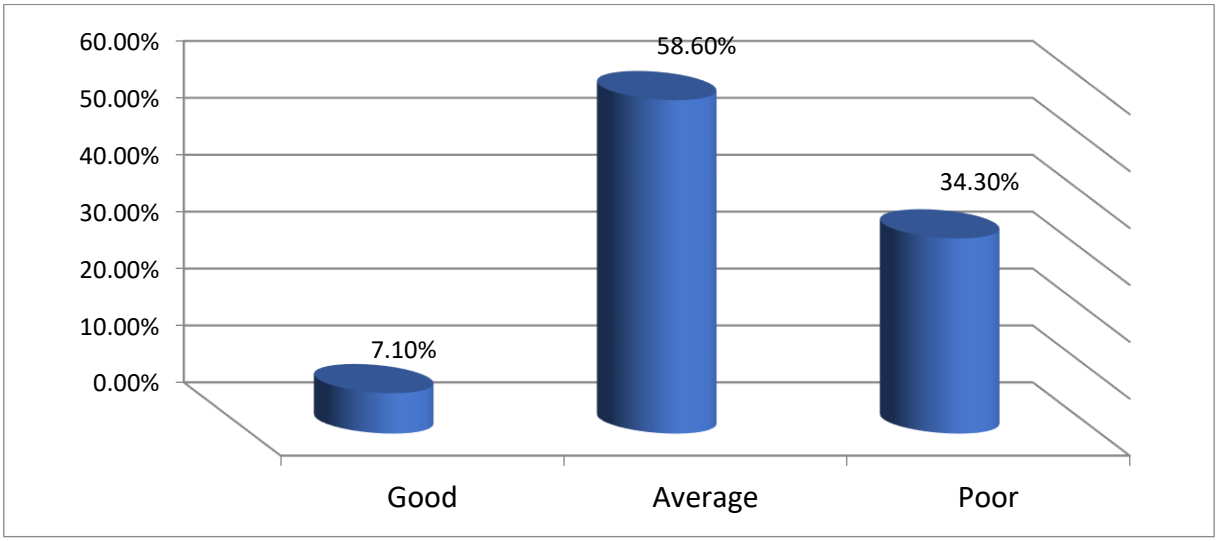

Figure (1): Percentage distribution of studied patients regarding total knowledge score about hypertension (n=140)

Table (4): Total lifestyle pattern of studied patients (n=140).

Total lifestyle about hypertension	Healthy		Unhealthy	
	No	%	No	%
Nutrition	46	32.9	94	67.1
Treatment & follow up	19	13.6	121	86.4
Exercise & physical effort	21	15.0	119	85.0
Rest & sleep	17	12.1	123	87.9
Psychological level	18	12.9	122	87.1
Social activities	35	25.0	105	75.0

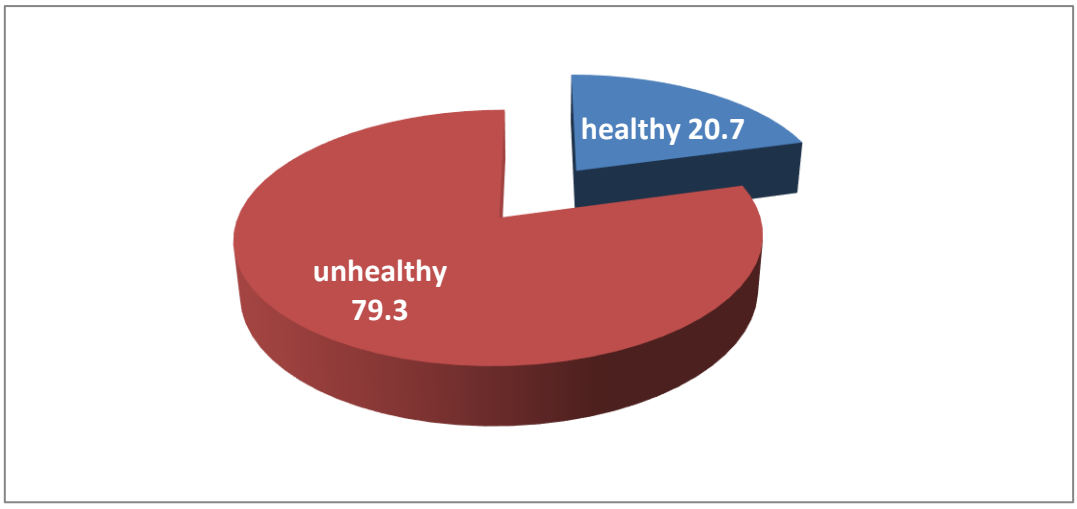

Figure (2): Percentage distribution of studied patients regarding their total lifestyle pattern (n=140).

Table (5): Relation between total knowledge and lifestyle about hypertension among studied patients

Variables	Total Knowledge	
	r	p-value
Total lifestyle practices	0.489	0.29

Not significant p > 0.005

Discussion:

The first line of intervention for all patients with hypertension is lifestyle modification, but pharmacological is still the cornerstone for the disease treatment to reduce the high blood pressure and to prevent complications **(Kappes et al., 2023).**

As regards socio-demographic characteristics of studied patients the findings of the present study revealed that, more than one third of studied patients were aged ranged from 35 to 40 years old with the mean ±SD 40.19±5.64 years.

Regarding level of education the present study showed that, two fifths of studied patients had above average education. As regards patient knowledge about hypertension disease, less than tenth of studied patients had complete and correct answer about meaning of hypertension. This finding disagreed with **Firdaus et al. (2022),** who studied "Online health education's influence on productive-age's population knowledge, attitude and practice towards hypertension" in Indonesia (n=13 patients), and found that near third (30.8%) of studied group had complete and correct answer.

Regarding presence of chronic disease, the result of this study revealed that more than two thirds of studied patients didn't have any other chronic disease. This finding agreed with **Mahdi &Al-Humairi, (2022)**, they mentioned that near three fifths (58.7%) hadn't any other chronic disease. However, disagreed with **Modey Amoah et al., (2020)**, who studied " The role of lifestyle factors in controlling blood pressure among hypertensive patients in two health facilities

in Urban Ghana" (n =360 patients), and found that more than two thirds (68%) had history of associated diseases.

Regarding family history, the result of this study revealed that near three quarters of studied patients had family history of hypertension from first degree. This finding agreed with **Modey Amoah et al., (2022)**, who reported that near two thirds (61.4%) of studied group had family history of hypertension. However, disagreed with **Sadeghi-Gandomani et al., (2021)**, who studied "Impact of tele-nursing on blood pressure and body mass index of people with pre-hypertension: A randomized controlled clinical trial" in Iran (n = 81 patients), and mentioned that more than three fifths of both groups (61% & 62.5%) hadn't family history of hypertension.

As regards duration of disease, the present study revealed most of studied patients had hypertension from less than 5 years. This finding agreed with **Ayanaw et al., (2022)**, who studied "Sleep quality and associated factors among adult hypertensive patients attending a chronic follow up care clinic in northwest Amhara regional state referral hospitals, Northwest Ethiopia" (n= 563patients), and found that more than three fifths (61.9%) of studied group had hypertension from less than or equal 5 years. However, disagreed with **Modey Amoah et al., (2020)**, who found that more than two fifths (43.9%) had hypertension from more than 5 years.

Concerning types of hypertension, the present study revealed that more than three fifths of studied patients didn't knew types of HTN preprogram. Less than fifth of them had complete and correct answer about types of HTN. This finding disagreed with **Ayanaw et al., (2022),** who studied "Sleep quality and associated factors among adult hypertensive patients attending a chronic follow up care clinic in northwest Amhara regional state referral hospitals, Northwest Ethiopia " (n= 563 patients), and found that near three fifths (55.8%) of studied group know types of hypertension.

Concerning causes of hypertension the present study revealed that less than one tenth of studied patients had complete and correct answer about causes of hypertension. This finding agreed with **El Said et al., (2023**), who found more than tenth (14.3%) of studied group had complete and correct answer about causes of hypertension.

Concerning of signs and symptoms of HTN the present study revealed that less than one tenth of studied patients had complete and correct answer about signs and symptoms of HTN. This finding disagreed with **Firdaus et al., (2022),** and found that more than third (38.5%) of studied group had complete and correct answer about symptoms of HTN.

Concerning complications of HTN the present study revealed that less than one tenth of studied patients had complete and correct answer about complications of HTN. This finding disagreed with **Ralapanawa et al ., (2020),** who studied " Hypertension knowledge, attitude, and practice in adult hypertensive patients at a tertiary care hospital in Sri Lanka" (n =371 patients), and reported that more than three quarters (77%) of the study population knew of the complications of HTN.

According the research question (No.1), what is the knowledge of studied patients about HTN? The current study revealed that less than tenth of studied patients had good total knowledge about hypertension. This finding agreed with **Olfah et al., (2023),** who studied "Education about hypertension management by tele-nursing during the covid 19 pandemic" at Indonesian, n= 44 patients, they found that

less than one third of experiment group were good knowledge, and also agreed with **Firdaus et al., (2022),** who found that less than tenth (7.7%) of studied group had good total knowledge about hypertension.

The current study revealed that, near one third of studied patients had satisfactory nutritional practices. This finding agreed with **Geremew et al., (2023),** who found that, less than half (47.7%) of participants used weight management practices to control high blood pressure by modifying their lifestyle practices about nutrition.

The current study revealed that more than one tenth of studied patients had satisfactory lifestyle adherence of treatment and follow up. This finding disagreed with **Weheida et al., (2022),** who studied "Effect of tele-nursing about lifestyle modification on health outcomes of patients with rheumatic heart disease during COVID-19 pandemic" in Egypt (n =60 patients), and found that more than two thirds (68.2%) of both groups adherence to treatment.

The current study revealed that, near one fifth of studied patients had satisfactory adherence of exercise and physical effort. This finding disagreed with **Geremew et al., (2023),** who found that near one half (46.2%) of participants adhered to regular physical exercise activity.

The current study revealed that , more than one tenth of studied patients had satisfactory practices of rest and sleep, while majority of them were unsatisfactory about rest and sleep This finding disagreed with **Jamilah, (2022),** who studied "Sleep quality of hypertensive patients can be influenced by the effectiveness of back massage " at Indonesia (n = 20 patients), who reported that majority (85%) of respondents were quite satisfaction regarding sleep.

According the research question (No.2), what are lifestyle patterns of hypertensive patients? The current study revealed that, more than fifth studied patients had healthy lifestyle. This finding agreed with **Geremew et al., (2023),** who found that only third (30%) of the participants had adhered to the recommended lifestyle modifications .

According the research question (No.3), is there a relation between hypertensive patients' knowledge and lifestyle patterns? the current study revealed that, there was no statistically significant difference between total knowledge about hypertension and their total lifestyle patterns **(p > 0.005).** This finding disagreed with **Elbialy, et al., (2022),** who studied "Effect of implementing tele-nursing versus traditional nursing program on knowledge, life style modification and blood pressure control for hypertensive patients" in Egypt (n= 200 patients), and found that there was significant positive relation between total score of healthy lifestyle practices and their total knowledge score for traditional group (p=0.003*) (p <0.005).

Conclusion:

Less than tenth of studied patients had good total knowledge about hypertension, more than fifths of studied patients had healthy lifestyle pattern, and there was no statistically significant difference between total knowledge of studied patients regrading hypertension and their lifestyle pattern.

Recommendations:

- Health education programs should be conducted to improve patient's adherence to a healthy lifestyle pattern.
- Suggested guideline to improve patient's knowledge and medical health team should provide patients with needed information about hypertension and lifestyle pattern.

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نمط الحياة لمرضي ارتفاع ضغط الدم

هدى السعيد مصطفى –هناء عبد الجواد عبد المجيد – هدية فتحى محى الدين

يساعد تعديل نمط الحياة على خفض مستوي ضغط الدم المرتفع .وهدفت هذه الدراسة إلى تقييم نمط الحياة بين مرضى ارتفاع ضغط الدم. وقد أجريت هذة الدراسة على ١٤٠ عينة عشوائية من مرضى ارتفاع ضغط الدم المترددين على العيادات الخارجية بمستشفيات جامعة بنها. حيث كشفت النتائج عن 7.1% فقط من المرضى يمتلكون معرفة جيدة حول ارتفاع ضغط الدم و 20.7%منهم لديهم ممارسات نمط حياة صحية .كما اظهرت انه لا يوجد علاقة ذات دلالة إحصائية بين المعرفة ونمط الحياة وأوصت الدراسة بتنفيذ برنامج تثقيف صحى لتحسين نمط الحياة لمرضى ارتفاع ضغط الدم.