

Knowledge and Attitude for Hypertensive Elderly Patients Regarding Non-pharmacological Methods

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Abstract

Background: High blood pressure is an important public health problem due to its high prevalence, the difficulty to control it, and its high contribution to morbidity. **Aim of the study:** This study aimed to assess knowledge and attitude for hypertensive elderly patients regarding Non-pharmacological Methods. **Subjects and Methods; Research design:** A descriptive design used to accomplish this study. **Setting:** The study carried at Bany Shiple. **Subject:** The study carried on 200 hypertensive elderlies. **Tools of data collection:** Researcher used a structured interview questionnaire included demographic data, medical history, knowledge, and attitude scale for data collection. **Results:** There is a highly statistically significant relation between the studied elderly patient's total knowledge and their educational level at ($p < 0.01$). In addition, there is a statistically significant relation with their age, monthly income at ($p < 0.05$). Also, there is a highly statistically significant relation between the studied elderly patient's total attitude and their age and educational level at ($p < 0.01$). In addition, there is a statistically significant relation with their marital status and monthly income at ($p < 0.05$). As well, there is no statistically significant relation with their gender and residence at ($p > 0.05$). **Conclusion:** Shows that more than half of the studied elderly patients (58.5%) have unsatisfactory total knowledge about non-pharmacological methods, but more than two fifths of them (41.5%) have satisfactory knowledge. shows that slightly less than two thirds of the studied elderly patients (61.5%) have positive total attitude regarding non-pharmacological methods, but more than one third of them (38.5%) have negative total attitude. **Recommendations:** Further studies to explore the non-pharmacological methods among hypertensive elderly patient and implement an educational program about non-pharmacological method of hypertensive elderly patient with chronic conditions. Implementing awareness programs to improve knowledge, attitude, lifestyle practices and control of elderly hypertension in Egypt.

Keywords: Knowledge, attitude, Non-pharmacological Method, Hypertensive Elderly

Introduction

Aging is a multifactorial dynamic process that is influenced by various external and internal variables, including environmental, demographic and bio psychosocial factors that determine the development and progression of age-related diseases, and is not an exclusively static internal process of cellular changes ⁽¹⁾.

Aging process in the journey of human life is a natural thing. Problems that commonly occur in the elderly related to physical health are susceptible to various diseases, due to reduced body resistance in dealing

with outside influences. About 30% of the elderly have hypertension ⁽²⁾.

Aging is an irreversible multifactorial process that eventually occurs in all living organisms, in which genetics and the environment are usually involved, and can also be defined as deterioration in structure and function; alteration of support and repair systems; increased susceptibility to disease and death, as well as reduced productive and reproductive capacity ⁽³⁾.

High blood pressure is an important public health problem due to its high prevalence, the difficulty to control it, and its high contribution to morbidity. A series of changes may be linked to the aging process, compromising cardiac conduction, and reducing cardiovascular baroreceptor function. Advancing age promotes a decline in heart rate variability and this decrease can increase the probability of cardiovascular disease⁽⁴⁾.

Knowledge is a very important domain in shaping a behavior. Thus, the formation of behavior due to the knowledge that exists in him, especially that which exists in adults begins in the cognitive domain. This knowledge can be obtained through formal education or through non-formal education, such as training and seminars. In addition, knowledge can be obtained from one's work experience. Knowledge is something that is known to be related to the learning process⁽⁵⁾.

Significance of the study:

Patients with hypertension should have knowledge regarding hypertension, especially knowledge about how to manage the disease to achieve optimal health status. With proper treatment or management, high blood pressure can be controlled, and the risk of recurrence can be reduced. Combined with lifestyle changes and anti-hypertensive medication, blood pressure can usually be maintained within a range that does not damage the heart and other organs. Good knowledge is a domain for the formation of good behavior⁽⁶⁾.

Healthy lifestyle choices can lower cardiovascular risk and postpone or prevent the onset of high blood pressure. Additionally, the first line of antihypertensive therapy is lifestyle change. One of the best ways of life adjustments for lowering blood pressure is weight loss. Physical activity on a regular basis can reduce high blood pressure. A diet low in saturated fat, salt, and cholesterol and high in whole grains, fruits, vegetables,

and low-fat dairy products can reduce high blood pressure. Quitting smoking can potentially extend life by lowering blood pressure, lowering the risk of heart disease, and improving general health. The quality of your sleep can affect your blood pressure⁽⁷⁾.

Aim of the study:

This study aimed to assess knowledge and attitude for hypertensive elderly patients regarding Non-pharmacological Methods.

Research Questions:

1. What is the level of knowledge related Non-pharmacological Methods among Hypertensive Elderly Patients?
2. What is the level of attitude related Non-pharmacological Methods among Hypertensive Elderly Patients?

Subjects and methods:

Research design:

A descriptive design was used to conduct this study.

Study setting:

The existing study was conducted at bany shiple which was randomly selected from 75 main villages and 64 satellite villages of Zagazig city districts which also was selected from the 21 districts of Sharkia governorate.

Study subjects:

The sample composed of 200 hypertensive elderlies from the above-mentioned setting who fulfilled the following criteria:

▪ **Inclusion criteria:**

1. Age: Patients over ≤ 60 year with hypertension,
2. Able to communicate, and
3. Accept to participate in the study.

▪ **Exclusion criteria:**

1. Elderly who has communication problems as (speech & hearing problems),
2. Elderly who has malignant diseases or last stage diseases , and
3. Elderly patients diagnosed with mental or psychological diseases.

Sample size calculation:

A Purposive sample composed of (200) hypertensive elderly. So, the sample size was calculated by software Epi-info package, assuming a prevalence of hypertension among elderly is 51.0% (**Debalina et al.** ⁽⁸⁾) from 935 elderly were residing in Bany Shepl village, level of confidence 95%, margin of error 5% and power of test were 80% and size effect.

Sampling technique:

A multistage cluster sampling technique was the most appropriate method for the selection of the elderly hypertension to be included in the study as the following:

- **First stage (selection of district):** The study was conducted in Sharkia Governorate, which consists of 75 main villages, and 64 satellite villages. The researcher used simple random sampling technique to pick up district, it was Elenita district, (consists of 75 main village and 64 satellite).
- **Second stage (selection of village):** The researcher picked up one village from the 75 main villages, and 64 satellite villages, (randomly Bany Shiple).
- **Third stage (selection of participants):** The selected village was divided into several clusters. From each cluster five streets were selected randomly and finally building from these streets included (door to another door) to yield the desired purposive sample elderly hypertension which were to be in the study.

Tools of data collection:

Two tools were utilized to collect the required data:

Tool I: A structured interview questionnaire:

It was developed by the researcher after reviewing the related literature to collect the necessary data for the study. It consisted of three parts.

Part 1: Demographic characteristics: This part was used to assess demographic characteristics of the studied elderly hypertension, which included: Age, gender, place of residence, occupation before pension, marital status, educational level, current working, monthly income, living condition, who do you live with, monthly income.

Part 2: Medical history of the studied elderly: That include the present and past medical history and family history of the studied elderly which included how long you have had high blood pressure, do you suffer from any other health problems, your perception of your health.

Part 3: knowledge about hypertension: This part was developed by researcher based on literature review to assess patients' knowledge about hypertension which included 10 questions at multiple choice questions which include, what do you know about high blood pressure?, what are the symptoms of high blood pressure?, what are the causes of high blood pressure?, complications of high blood pressure, what should you do as a blood pressure patient to prevent complications from occurring?, do you go to follow-up with the doctor?, when do you measure your blood pressure?, why do you attend follow-up?, what are the reasons for not attending the follow-up?, what is your source of information about high blood pressure?.

Scoring system:

The Elderly patients' knowledge was checked with a model key answer and accordingly, the Elderly patients' knowledge was categorized into either "correct answer was scored a single point" or "incorrect answer was scored a zero point". These scores were summed up and converted into a percentage score. It was classified into two categories:

- **Satisfactory knowledge** if score > 70%.
- **Unsatisfactory knowledge** if score 70% or less.

Tool II: The Attitude of hypertensive elderly patients regarding non-pharmacological management that include:

Do you think that regular blood pressure checks are important, Do you think that reducing sodium in food to prevent high blood pressure is important, Do you think that follow-up with the doctor is important, Do you think that continuous treatment is important for high blood pressure, Is it necessary to exercise for a patient with high blood pressure, Do you think that relaxation exercise is important for lowering blood pressure, Do you think that eating fast food raises blood pressure, Do you think that obesity plays an important role in high blood pressure, I believe that the social level is related to diseases such as blood pressure, Do you think that rest is necessary for a patient with high blood pressure, Do you think that fast food is harmful to health, Do you think that taking deep breaths and practicing meditation helps lower blood pressure, Do you think checking the body at least once a month for physical changes/risk signs is important, Do you think that blood pressure disease can be cured.

Scoring system:

Each item was evaluated regarding Likert scale as yes "two score", sometimes "one score", no "zero score" for positive items and vice versa for negative one. These scores were summed up and converted into a percentage score. It was classified into two categories:

- **Positive attitude** if score > 60%.
- **Negative attitude** if score 60% or less.

Content validity & Reliability:

The tools were revised by three experts in the field of community health nursing and Obstetrics and

Gynecological Nursing at the faculty of nursing in Zagazig University, where the panel reviewed the tools content for relevance, clarity, comprehensiveness, and understandability. All recommended modifications were done.

The reliability of tools was tested by measuring their internal consistency. It demonstrated a good level of reliability with Cronbach's alpha as follow: Knowledge was 0.870 and Attitude was 0.849

Fieldwork

Once the permission was granted to progress in the study, the researcher started to organize a schedule for collecting the data. The researcher visited study setting to be familiar with work process, time of work and observe elderly attending the study settings to set schedule for data collection. The researcher used to go to the study setting for interviewing the elderly who fulfill the criteria and introduced herself to the patient. The purpose of the study was explained to each elderly individually, and then the elderly was asked to participate in the study. The study tool questions were answered by each patient privately. The time needed to answer the interview questionnaire ranged from 15 to 25 minutes. The fieldwork was executed over six months (the period extended from the beginning of July 2022 up to the end of December 2022); two days per week (Saturday and Thursday) from 9.00 am to 12.00 pm.

Pilot study:

A pilot study was carried out on a sample of 20 elderlies (10% of the calculated sample). The purposes of the pilot study were to test applicability, feasibility, applicability of the study tool and to determine the time needed to fill out the questionnaire. All participants received a clear clarification for the study purpose. Since there was no modification in the data collection tools after conducting the pilot study, the

pilot elderly patients weren't included later in the main studied sample.

Administrative and ethical considerations:

Firstly, the study proposal was approved by the Research Ethics Committee (REC) and Postgraduate Committee of the Faculty of Nursing at Zagazig University. Then, oral informed consent for participation was obtained from each subject after full explanation of the aim of the study. Participants were given the opportunity to refuse participation, and they were notified that they could withdraw at any stage of filling the questionnaire. No names were included in the questionnaire sheet and anonymity of each woman was protected by the allocation of code number for each woman. They were assured that the information would be confidential and used for research purpose only.

Statistical analysis:

Data collected from the studied sample was revised, coded and entered using Personal Computer (PC). Computerized data entry and statistical analysis were fulfilled using the Statistical Package for Social Sciences (SPSS) version 22. Data were presented using descriptive statistics in the form of frequencies, percentages and Mean SD. Chi-square to assess the relations between variables and their characteristics. A correlation coefficient "Pearson correlation" is a numerical measure of some type of correlation, meaning a statistical relationship between two variables. Linear regression is a linear approach for modelling the relationship between a scalar response and one or more explanatory variables.

Significance of the results:

- Highly significant at p-value < 0.01.
- Statistically significant was considered at p-value < 0.05.
- Non-significant at p-value ≥ 0.05.

Results:

Table 1a shows that about three quarters of the studied elderly patients (75.5%) range in age between 60 to 69 years old with mean±S.D 66.84±4.65 years. As well, more than half of them (56.5%) are females. In addition, all of them (100%) live in rural areas. Besides, more than two thirds of them (68.0%) are married. Also, more than one quarter of them (30.5%, 27.5%) are illiterate and have secondary education respectively.

Table 1b indicates that more than half of the studied elderly patients (55.5%) were employees before pension and the majority of them (97.0%) are not working currently. As well, most of them (89.0%) live with their family. In addition, live in rural areas. Besides, more than two thirds of them (67.0%) have not enough monthly income. Also, the current source of income among majority of them (97.5%) is pension.

Table 2a demonstrates that more than half of the studied elderly patients (56.5%) suffered from blood pressure disease up to 9 years ago. In addition, more than three quarters of them (76.5%) suffer from other health problems and about half of them (50.3%) suffer from diabetes. As well, more than two thirds of them (68.5%) have good perception of their health.

Table 2b illustrates that more than three quarters of the studied elderly patients (76.0%) don't go to follow-up with a doctor. In addition, almost three quarters of them (74.0%) measure their blood pressure when going to the doctor. Furthermore, more than two thirds of them (68.5%) report that they attend follow-up because there is a health problem. Also, more than half of them (53.5%) report that they are not attending the follow-up because of laziness. Moreover, less than half of them (45.5%) their source of information about high blood pressure is the physician.

Figure 1 shows that more than half of the studied elderly patients (58.5%) have unsatisfactory total knowledge about non-pharmacological methods, but more than two fifths of them (41.5%) have satisfactory knowledge.

Figure 2 shows that slightly less than two thirds of the studied elderly patients (61.5%) have positive total attitude regarding non-pharmacological methods, but more than one third of them (38.5%) have negative total attitude.

Table 3 displays that there is a highly statistically significant relation between the studied elderly patient's total knowledge and their educational level at ($p < 0.01$). In addition, there is a statistically significant relation with their age, monthly income at ($p < 0.05$). Moreover, there is no statistically significant relation with their gender, residence and marital status at ($p > 0.05$).

Table 4 reveals that there is a highly statistically significant relation between the studied elderly patient's total attitude and their age and educational level at ($p < 0.01$). In addition, there is a statistically significant relation with their marital status and monthly income at ($p < 0.05$). As well, there is no statistically significant relation with their gender and residence at ($p > 0.05$).

Table 5 stats that high significant model detected through f test 11.498, p value= .000. This explains 57% of the variation at knowledge detected through R^2 0.57. Also, declares that Education level (High) and Time of suffering from blood pressure of the studied elderly patients has high frequency positive effect on knowledge at $p = .000$ and $p = .006$, respectively. As well, their Age, Income, Follow-up with the doctor (Always), and measure your blood pressure (Daily) have slight frequency positive effect on knowledge at p value= .033, .039, .045 and .047, respectively.

Table 6 reveals that high significant model detected through f test 12.400, p value= .000. This explains 58% of the variation at attitude detected through R^2 0.58. As well, it reflects that Age of the studied elderly patients has high frequency negative effect on attitude at $p = .006$. Also, Education level (High), Time of suffering from blood pressure, and Follow-up with the doctor (Always) of the studied elderly patients has high frequency positive effect on attitude at $p = .004$, $p = .002$, and $p = .000$ respectively. Besides, their Income (enough), marital status (married) and measure your blood pressure (Daily) have slight frequency positive effect on attitude at $p = .027$, $p = .023$, and $p = .021$, respectively.

Discussion:

The hypertensive elderly patients need to be educated by more Practices information to improve their Practices on non-pharmacological methods of hypertension such as lifestyle modifications, regular exercises, weight reduction, dietary pattern, measures to reduce stress, avoidance of smoking and alcohol consumption⁽⁶⁾.

Non-pharmacological interventions are mainly lifestyle changes, including a low sodium diet, increased physical activity, weight reduction in obese individuals, and reduction of anxiety and fear. Several meta-analyses have assessed the efficacy of exercise and education for BP reduction in older adults. It is essential to examine the relative efficacy of non-pharmacological interventions for older hypertensive patients⁽⁹⁾.

Therefore, the aim of this study was to assess knowledge and attitude about non-pharmacological methods among hypertensive elderly patients.

Related to Knowledge of hypertension among the studied elderly, the current study illustrated that more than two thirds of them have incorrect knowledge about definition, symptoms, causes and complication of hypertension. This finding might be

due to highest percentage of the studied sample uneducated.

The pervious study results agreed with a study conducted by **Roopa & Rama Devi** ⁽¹⁰⁾ who revealed that most of the studied sample had poor knowledge about definition, symptoms, causes and complication of hypertension. Similarly, study carried out in Nigeria by **Ozoemena et al.** ⁽¹¹⁾ and reported that most of the studied sample had poor knowledge about definition, symptoms, causes and complication of hypertension.

Regarding knowledge of non-pharmacological methods among hypertensive elderly patients, the present study displayed that more than three quarters of the studied elderly patients have correct knowledge about meaning of non-drug methods for high blood pressure.

Concerning on total knowledge about non-pharmacological methods among studied elderly, the present study demonstrated that more than half of the studied elderly patients have unsatisfactory; while more than two fifths of them have satisfactory knowledge. This result in same line with study done in Indonesia by **Kurnia et al.** ⁽¹²⁾ who showed that about one quarter of the studied sample had good total knowledge about non-pharmacological methods for hypertension and rest of them had poor knowledge.

Regarding to attitude among the studied elderly patients, the present study demonstrated that most of the studied elderly patients think that regular blood pressure checks are important. In addition, more than two fifths of them sometimes think that rest is necessary for a patient with high blood pressure and think that taking deep breaths and practicing meditation helps to lower blood pressure. Moreover, most of them don't think that blood pressure disease can be cured.

The previous result is in the same line with **Bashaar et al.** ⁽¹³⁾ in Kabul and showed that most of the respondents said that check their blood pressure is important, three fifths of them mentioned they performed rest and exercise to reduce stress.

Regarding to total attitude of hypertensive elderly patients regarding nonpharmacological methods, the present study demonstrated that less than two thirds of them have positive total attitude regarding non-pharmacological methods, but more than one third of them have negative total attitude. This finding was agreed with study carried out in Iran by **Rashidi et al.** ⁽¹⁴⁾ and showed that most of the studied sample had positive attitude about hypertension. On other hand, this finding disagreed with study done in Malaysia by **Machalani et al.** ⁽¹⁵⁾ and reported that two fifths of the studied sample had positive attitude toward hypertension. This difference between studies might be due to using different approaches in evaluating the attitude level of respondents and differences in available education programs in different countries.

The current study results showed that, there is a highly statistically significant relation between the studied elderly patient's total knowledge and their educational level. In addition, there is a statistically significant relation with their age, monthly income. Moreover, there is no statistically significant relation with their gender, residence, and marital status.

This finding consistent with a study in Malaysia by **Machalani et al.** ⁽¹⁵⁾ and reported that there statistically significant relation between the studied sample total knowledge and their educational level and age, monthly income. Also, a study conducted in China by **Yuan et al.** ⁽¹⁶⁾ showed that no variation in the level of knowledge between the rural and urban participants.

On other hand, this finding disagreed with study by **Thompson et al.** ⁽¹⁷⁾ and showed that men have generally lower level of knowledge in comparison with women; this may be because female patients tend to portray better health-seeking habits than males.

Regarding Relationship between socio-demographic characteristics of studied elderly patients and their total attitude of hypertensive elderly patients related to nonpharmacological methods, the present study revealed that there is a highly statistically significant relation between the studied elderly patient's total attitude and their age and educational level. In addition, there is a statistically significant relation with their marital status and monthly income. As well, there is no statistically significant relation with their gender and residence. This finding might be due to that educated patients, when being diagnosed with hypertension, became frustrated and started to read, ask about, and collect information about their condition.

This finding agreed with study done in Lebanon by **Machalani et al.** ⁽¹⁵⁾ who found that there statistically significant relation with studied sample attitude and their age, education, and monthly income.

The current study demonstrated that Education level (High) and Time of suffering from blood pressure of the studied elderly patients has high frequency positive effect on knowledge. As well, their Age, Income, Follow-up with the doctor (Always), and measure your blood pressure (Daily) has slight frequency positive effect on knowledge. Possible explanations for such outcomes were emphasizing the importance of education as a tool of enlightening the public on issues which affect their livelihood.

Likewise, the finding of study conducted in Malaysia by **Mohammed et al.** ⁽¹⁸⁾ and reported that the factors associated with the level of hypertension knowledge. Education

Level have displayed the most significant score among the respondents then age. As well as this finding in same line with study done in India by **Gupta et al.** ⁽¹⁹⁾ and showed that access to health care usage is prevalent factor which affects hypertension awareness.

The current study had also examined the Multiple Linear regression model for total attitude. The current study revealed that high significant model reflects that Age of the studied elderly patients has high frequency negative effect on attitude. Also, Education level (High), Time of suffering from blood pressure, and Follow-up with the doctor (Always) of the studied elderly patients has high frequency positive effect on attitude. Besides, their Income (enough), marital status (married) and measure your blood pressure (Daily) has slight frequency positive effect on attitude. The preceding results of the study were consistent with **Bacha & Abera** ⁽²⁰⁾ who found that age factor negative effect on attitude while education level positive effect.

Conclusion:

In conclusion, shows that more than half of the studied elderly patients had unsatisfactory total knowledge about non-pharmacological methods, but more than two fifths of them have satisfactory knowledge. shows that slightly less than two thirds of the studied elderly patients have positive total attitude regarding non-pharmacological methods, but more than one third of them have negative total attitude.

Recommendations:

1. Explore the non-pharmacological methods among hypertensive elderly patient.
2. Implement an educational program about non-pharmacological method of hypertensive elderly patient with chronic conditions.
3. Implementing awareness programs to improve knowledge, attitude, lifestyle practices and control of elderly hypertension in Egypt.

Table (1a): Number and percentage distribution of the studied elderly patients according to their personal information (n= 200)

Personal information	N	%
Age		
60-69 year	151	75.5
70-79 year	45	22.5
≥80 year	4	2.0
Mean±SD	66.84±4.65	
Gender		
Male	87	43.5
Female	113	56.5
Residence		
Rural	200	100.0
Urban	0	0
Marital status		
Single	5	2.5
Married	136	68.0
Divorced	8	4.0
Widowed	51	25.5
Educational level		
Illiterate	61	30.5
Reads and writes	8	4.0
Primary education	30	15.0
Preparatory education	19	9.5
Secondary Education	55	27.5
University Education/Postgraduate Studies	27	13.5

Table (1b): Number and percentage distribution of the studied elderly patients according to their personal information (n= 200)

Personal information	N	%
Occupation before pension		
Craftsman	2	1.0
Farmer	19	9.5
Merchant	1	0.5
Employee	111	55.5
Housewife	67	33.5
Current work		
Working	6	3.0
Not working	194	97.0
Live with		
With the family	178	89.0
On my own	22	11.0
Monthly Income		
Not enough	134	67.0
Enough	66	33.0
Current source of income		
Pension	195	97.5
Children's assistance	3	1.5
Income of property	2	1.0

Table (2a): Number and percentage distribution of the studied elderly patients according to their medical history (n= 200)

Items	N	%
Time of suffering from blood pressure disease:		
0-9 year	113	56.5
10-19 year	57	28.5
≥20 year	30	15.0
Suffer from any other health problems		
Yes	153	76.5
No	47	23.5
*If yes, what is it (n=153)		
Chronic kidney disease	4	2.6
Diabetes	77	50.3
Respiratory system disease	41	26.8
Heart disease	21	13.7
Digestive system disease	13	8.5
Osteoporosis	10	6.5
Anemia	3	2.0
Perception of your health		
Very good	22	11.0
Good	137	68.5
Moderate	3	1.5
Bad	38	19.0
*more than one answer		

Table (2b): Number and percentage distribution of the studied elderly patients according to their medical history (n= 200)

Items	N	%
Go to follow-up with the doctor		
Always	19	9.5
Sometimes	29	14.5
No	152	76.0
Measure your blood pressure		
Daily	8	4.0
Weekly	32	16.0
When going to the doctor	148	74.0
No	12	6.0
Reasons for attend follow-up		
Because there is a health problem	137	68.5
To take treatment	24	12.0
To measure pressure	39	19.5
Reasons for not attending the follow-up		
Laziness	107	53.5
Difficulty in transportation	17	8.5
Need for help	9	4.5
Financial problems	67	33.5
Source of information about high blood pressure		
Physician	91	45.5
Nurse	9	4.5
Pharmacist	49	24.5
Friends and relatives	30	15.0
The media	21	10.5

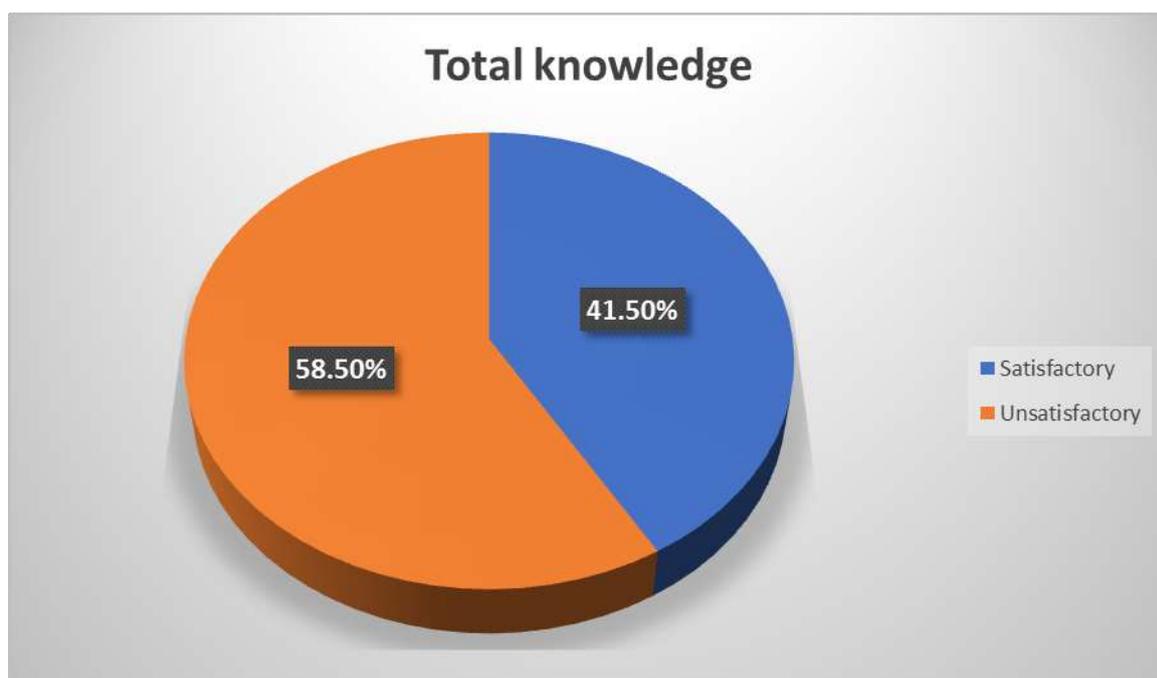


Figure (1): Percentage distribution of the studied elderly patients according to their total knowledge (n= 200)

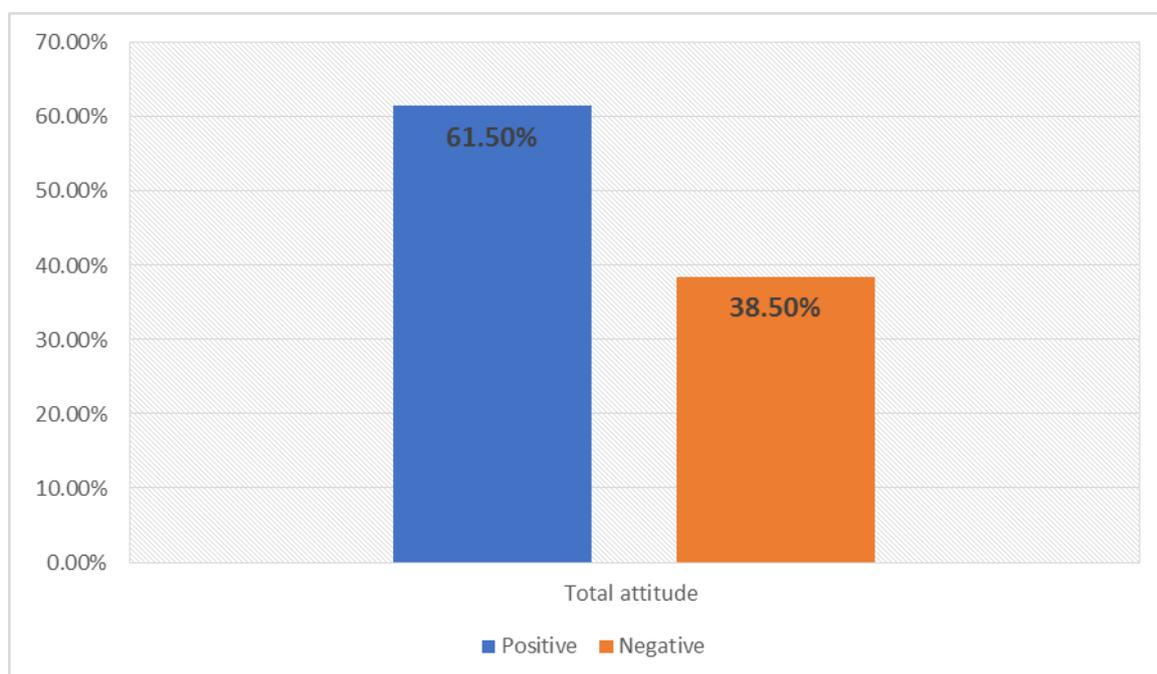


Figure (2): Percentage distribution of the studied elderly patients according to their total attitude of hypertensive elderly patients related to nonpharmacological methods (n= 200)

Table (3): Relationship between socio-demographic characteristics of studied elderly patients and their total knowledge (n=200)

Items		Total knowledge				X ²	P-Value
		Satisfactory N=83		Unsatisfactory N=117			
		N	%	N	%		
Age	60-69	70	84.3	81	69.2	4.36	.012*
	70-79	13	15.7	32	27.4	8	
	≥80	0	0	4	3.4		
Gender	Male	34	41.0	53	45.3	1.69	.053
	Female	49	59.0	64	54.7	2	
Residence	Rural	83	100.0	117	100.0	1.19	.089
	Urban	0	0	0	0	6	
Marital status	Single	1	1.2	4	3.4	1.36	.061
	Married	59	71.1	77	65.8	8	
	Divorced	3	3.6	5	4.3		
	Widowed	20	24.1	31	26.5		
Educational level	Illiterate	2	2.4	59	50.4	9.62	.003**
	Reads and writes	3	3.6	5	4.3	1	
	Primary education	2	2.4	28	23.9		
	Preparatory education	4	4.8	15	12.8		
	Secondary Education	47	56.6	8	6.8		
	University Education/ Postgraduate Studies	25	30.2	2	1.8		
Monthly income	Not enough	24	28.9	110	94.0	4.65	.021*
	Enough	59	71.1	7	6.0	8	

*Significant at p <0.05.

**Highly significant at p <0.01.

Not significant at p>0.05

Table (4): Relationship between socio-demographic characteristics of studied elderly patients and their total attitude of hypertensive elderly patients related to nonpharmacological methods (n= 200)

Items		Total attitude				X ²	P-Value
		Positive N=123		Negative N=77			
		N	%	N	%		
Age	60-69	115	93.5	36	46.8	9.504	.005**
	70-79	7	5.7	38	49.3		
	≥80	1	0.8	3	3.9		
Gender	Male	45	36.6	42	54.5	1.578	.073
	Female	78	63.4	35	45.5		
Residence	Rural	123	100.0	77	100.0	1.763	.081
	Urban	0	0	0	0		
Marital status	Single	3	2.4	2	2.6		.035*
	Married	84	68.3	52	67.5		
	Divorced	5	4.1	3	3.9	3.960	
	Widowed	31	25.2	20	26.0		
Educational level	Illiterate	4	3.2	57	74.0	8.972	.000**
	Reads and writes	3	2.4	5	6.5		
	Primary education	24	19.5	6	7.8		
	Preparatory education	18	14.6	1	1.3		
	Secondary Education	53	43.1	2	2.6		
	University Education/ Postgraduate Studies	21	17.2	6	7.8		
Monthly income	Not enough	71	57.7	63	81.8	3.946	.039*
	Enough	52	42.3	14	18.2		

*Significant at p <0.05.

**Highly significant at p <0.01.

Not significant at p>0.05

Table (5): Multiple Linear regression model for total knowledge

	Unstandardized Coefficients		standardized Coefficients	
	B		B	T P. value
Age	.200		.142	2.765 .033*
Education level (High)	.367		.324	6.987 .000**
Income (enough)	.199		.136	2.765 .039*
Time of suffering from blood pressure	.279		.224	4.977 .006**
Follow-up with the doctor (Always)	.165		.104	2.201 .045*
Measure your blood pressure (Daily)	.152		.100	2.187 .047*
Model	R²	Df.	F	P. value
Regression	0.57	5	11.498	.000**

a. Dependent Variable: Total knowledge

b. Predictors: (constant): Age, Education level (High), Income, Time of suffering from blood pressure, Follow-up with the doctor (Always), Measure your blood pressure (Daily)

Table (6): Multiple Linear regression model for total attitude

	Unstandardized Coefficients		standardized Coefficients	
	B		B	T P. value
Age	-.239		.169	4.232 .006**
Education level (High)	.280		.216	5.116 .004**
Income (enough)	.154		.103	2.400 .027*
Marital status (Married)	.167		.114	2.760 .023*
Time of suffering from blood pressure	.317		.281	5.987 .002**
Follow-up with the doctor (Always)	.349		.301	6.543 .000**
Measure your blood pressure (Daily)	.201		.154	2.912 .021*
Model	R²	Df.	F	P. value
Regression	0.58	6	12.400	.000**

a. Dependent Variable: Total attitude

b. Predictors: (constant): Age, Education level (High), Income, Marital status (Married), Time of suffering from blood pressure, Follow-up with the doctor (Always), Measure your blood pressure (Daily)

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