

Original Research Article
Knowledge and Adherence of Primary Health care Physicians to Hypertension Management Guidelines in Family Health Facilities, Tanta Gharbia

Abstract:

Background: Hypertension is a long-term condition in which the blood pressure in arteries is persistently elevated higher than 130 over 80 millimeters of mercury. Hypertension as an office systolic blood pressure and/or Diastolic Blood Pressure; which is equivalent to a 24-hours average ambulatory blood pressure management (AMBPM \geq 130/80 mmHg) or home blood pressure measurements (HBPM) average \geq 135/85 mmHg

Aim: To assess knowledge of physicians in the family health facilities in Tanta City, Gharbia Governorate regarding hypertension and its management, adherence of family physicians and to detect barriers which interfere with their adherence to the guidelines if any.

Methods: This is a cross sectional study. It was conducted in Family Health Units of the two main health administration sectors in Tanta City (The first administration sector includes 16 units and the second one includes nine units) Tanta, Egypt. The target population of the study was all physicians working in Tanta Family Health Facilities (n=120). This study started from September 2019 and completed in June 2021.

Results: Out of physicians, 47 (39.2%) doctors read and implemented guidelines, 37 (30.8%) of physicians heard about it but never had a copy of guidelines and 36 (30%) of them had one but never read the content. More than two thirds 82 (68.3%) of physicians received training about the guidelines but only 68 (56.7%) used these guidelines for management of the patients. The highest percent of physicians had Fair knowledge level (67.5%) about guidelines. Regarding knowledge sub items, definition of guidelines followed by referral criteria and investigations had the highest rank of knowledge level among physicians while treatment, had the lowest rank level. The highest percent of physicians were partially adherent to guidelines (60%). Regarding adherence sub items, measurement of blood pressure followed by history taking had the highest rank among physicians followed by investigation, while treatment and clinical examination had the lowest rank.

Conclusion: A lack of knowledge about specific HTN management guidelines and inadequately reported practices' adherence were detected among PHC physicians.

Keywords: Family health facilities, knowledge score, primary health physicians.

Introduction:

Hypertension has been termed "the silent killer" because, unlike persons with many other medical conditions, patients with elevated blood pressure can remain asymptomatic for many years and then suddenly suffer a serious adverse event, such as myocardial infarction or stroke.⁽¹⁾

In primary care clinic, the family physicians have important role in controlling hypertension as they can identify those at high risk. Ensure regular monitoring of health status: provide an uninterrupted appropriate and affordable treatment supply, identifying those at high risk by screening.⁽²⁾

Aim of the Work:

The aim of the present study was: 1-To assess knowledge of physicians in-the family health facilities in Tanta City, Gharbia Governorate regarding hypertension and its management according to National Hypertension Guidelines 2014, 2-To assess adherence of family

physicians to The National Hypertension guidelines and 3-To detect barriers which interfere with their adherence to the guidelines if any.

Subjects and Methods:

This is a cross sectional one. Setting in Family Health Units of the two main health administration sectors in Tanta City (The first administration sector includes 16 units and the second one include nine units) Tanta, Egypt. This study started from September 2019 and completed in June 2021.

Tools for data collection:

Tool (I): A predesigned self-administered questionnaire sheet and checklist was quoted from the Egyptian National Hypertension guidelines 2014.

II-The Check list

The practice and adherence of the physicians was assessed by direct observation of the researcher of daily activities during the conduction of outpatient visits, especially if a new hypertension case was detected.

Ethical consideration:

- A written informed consent was obtained from all participants before inclusion in the study, explaining the value of the study, plus the procedures that was commenced.
- Approval from Ethical Committee of Tanta Faculty of Medicine was obtained before starting the study.
- Confidentiality and personal privacy was respected in all levels of the study.
- Participants are free to withdraw from the study at any time without any consequences.
- Collected data were not and will not be used for any purpose.

Statistical analysis of data:

The collected data were organized, tabulated and statistically analyzed using SPSS software (Statistical Package for Social Sciences, version 19, SPSS).

Results:

Table (1): Knowledge sub items scores and ranks of the studied physicians regarding HTN guidelines in Family Health Units

Knowledge subitems (Each item was scored 0-1)	Number of questions Score	Range Mean \pm SD	Mean \pm SD/ Number of questions	Rank
A- Definition	24 (0-24)	(12-24) 19.35 \pm 4.11	0.81 \pm 0.17	1
B- Investigations	2 (0-2)	(0-2) 1.46 \pm 0.67	0.73 \pm 0.34	3
C- Treatment	13 (0-13)	(4-12) 8.52 \pm 2.18	0.66 \pm 0.17	4
D- Referral criteria	2 (0-2)	(0-2) 1.54 \pm 0.44	0.77 \pm 0.22	2
Total	41 (0-41)	(16-41) 25.10 \pm 7.73		

Table (1) show definition followed by referral criteria and investigation had the highest rank of Knowledge among physicians while treatment, had the lowest rank.

Table (2): Adherence sub items scores and ranks of the studied physicians regarding HTN guidelines in family health facilities

Adherence subitems (Each item was scored 0-2)	Number of questions score	Range Mean \pm SD	Mean \pm SD/ Number of questions	Rank
E- History taking	4 (0-8)	(3-8) 5.04 \pm 1.1	1.26 \pm 0.28	2
F- Clinical examination G-	5 (0-10)	(2-10) 5.8 \pm 1.12	1.16 \pm 0.22	4
H- Measurement of blood pressure	8 (0-16)	(6-16) 11.51 \pm 2.88	1.44 \pm 0.36	1
I- Investigations	4 (0-8)	(2-8) 4.93 \pm 0.57	1.23 \pm 0.14	3
J- Treatment	2 (0-4)	(0-4) 1.96 \pm 0.72	0.98 \pm 0.36	6
K- Follow up	2 (0-4)	(0-4) 2.08 \pm 0.66	1.04 \pm 0.33	5
Total	25 (0-50)	(9-48) 22.70 \pm 5.48	0.91 \pm 0.22	

Table (2) show measurement of blood pressure followed by history taking had the highest rank among physicians followed by investigation while treatment and clinical examination had the lowest rank.

Table (3): Relationship between knowledge level of the studied physicians regarding HTN guidelines in family health facilities and response to HTN guidelines

Hypertension guide lines	Total knowledge level (n= 120)			X ² Test P
	Poor Knowledge (n=17)	Fair Knowledge (n=81)	Good Knowledge (n=22)	
Awareness about guidelines				
Heard but never had a copy	2 (5.4%)	31 (83.7%)	4 (10.8%)	33.7 [#] 0.0001*
Had one but never read the content	13 (36.1%)	22 (61.1%)	1 (2.7%)	
Has read and implemented it	2 (4.2%)	28 (59.5%)	17 (36.1%)	
Received training about the guidelines				
No	13 (34.2%)	23 (60.5%)	2 (5.2%)	21.35 [#] 0.0001*
Yes	4 (4.8%)	58 (70.7%)	20 (24.3%)	

* Significant

Monte Carlo test (MC)

Table (3) show relationship between total knowledge level of the studied physicians regarding HTN guidelines in family health facilities and response to HTN guidelines. There was high statistically significant relationship between total knowledge level and awareness about guidelines ($p < 0.001$) and received training about the guidelines ($p < 0.001$). Good knowledge level represented the highest percentage out of those read and implement guidelines (36.1%) in comparison to others, ($P = 0.0001$), good knowledge level represented the highest percentage out of those received training about guidelines (24.3%), ($p = 0.0001$).

Table (4): Correlation between total knowledge score and total adherence score

Adherence score	Total knowledge score	
Adherence sub-items	R	P

History taking	0.426	0.0001*
Clinical examination	0.243	0.056
Measurement of blood pressure	0.541	0.0001*
Investigations	0.381	0.001*
Treatment	0.276	0.019*
Follow up	0.248	0.031*
Total Adherence score	0.365	0.001*

r = Pearson's correlation coefficient

Table (4) show correlation between total knowledge score and adherence scores. There was a statistically significant correlation between total knowledge score and all Adherence sub items score as history taking ($r= 0.426$, $p<0.001$), measurement of blood pressure ($r= 0.541$, $p<0.001$), Investigations ($r= 0.381$, $p=0.001$), treatment ($r= 0.276$, $p=0.019$) and follow up ($r= 0.248$, $p=0.031$) except clinical examination that showed non statistical significant correlation ($r= 0.243$, $p=0.056$) There was high statistically significant correlation between total knowledge score and total adherence score ($r= 0.365$, $p=0.001$).

Discussion:

Hypertension (HTN) is a major global public health concern and is the leading cause of global death or disability. About 30–40% of the adult population in the developed world suffer from this condition. Despite the availability of many safe, effective, and tolerable medications, the treatment of HTN remains suboptimal. In Egypt, it was estimated that the prevalence of hypertensive patients among Egyptian adults (≥ 25 years old) was 26.3%. In 60% of patients, HTN is complicated by the presence of other cardiovascular risk factors, leading to increased cardiovascular morbidity and mortality⁽³⁾.

The present study results were supported by study of Shnaimer & Gosadi, 2020 as they reported that the number of correct answers measuring knowledge on various topics is between 18% and 94%, with an average total score of 7.9/16. However, regarding the frequency and percentage of correct answers about different topics adopted from the Suadia Hypertension Management Guidelines (SHMGs) and mean score for knowledge; topics with the highest number of correct answers included the frequency of screening for HTN among adults aged 40 and above, safe HTN management options during pregnancy and follow-up frequency for HTN patients. Questions with the lowest number of correct answers were related to HTN management after surgery, normal blood pressure levels among children and the effect of weight reduction on controlling blood pressure.⁽⁴⁾

Studies on the prescribing patterns of health care physicians revealed that most physicians lack detailed knowledge of hypertension guidelines and tend to prescribe more expensive drugs without evidence of efficacy⁽⁵⁾.

In the study of Ahmad et al, 2018, the mean number of correct answers was 7.96 ± 1.82 (range 5–11). On the basis of criterion used for adequate awareness, 19 (73.07%) doctors had adequate knowledge of CPG (Clinical Practice Guidelines on Management of Hypertension) 2008 recommendations. Only three doctors correctly answered all 11 questions.⁽⁶⁾

Also, Alfaleh et al, 2015 revealed that all the participated physicians were aware that hypertension is a common health problem and 85% of physicians in PHC centers were capable of managing hypertension, and most of them thought that they were trained adequately to manage patients with hypertension. 83% reported that hypertension leads to patient's excessive anxiety and concern.⁽⁷⁾

The current study results were supported by study of Adedeji et al, 2015 conducted in Bojanala district, North-West Province, South Africa where they found adherence to measurement aspects of the guidelines of hypertension was high (99.8%).⁽⁸⁾

In the study of Shnaimer and Gosadi, 2020, practices with high adherence levels were related to the management of hypertension during pregnancy and measurement of blood pressure for adult patients attending a clinic. Nonetheless, only seven physicians [2%] reported adherence to the interval for reassessing patients with uncontrolled blood pressure. Similarly, only 18 physicians [6%] were adherent to the SHMG's recommendation concerning sharing lifestyle advice to limit salt intake.⁽⁴⁾

However, in the study of Al-Ali et al, 2013 conducted in Egypt, indicated that FPs (family physicians) did not fully adhere to all hypertension guidelines despite that 92.1% of them agreed to apply. Only 49.1% of the participants were very familiar with WHO/ISH guidelines and only 23.7% always follow them. In agreement with that, in a survey (2002) done by Burnnier on Canadian physicians, only 52% reported that they used guidelines at least once a month, and more than 25% expressed concerns about the source of the guidelines, their rigidity, and the fear that physicians might lose their sense of professional autonomy if they followed the guidelines^(8,9).

In the study of Gosadi, 2020 the majority of the recruited physicians were misinformed about several components related to screening for hypertension and dietary needs for lowering blood pressure levels. This was reflected in their reported adherence to recommended guidelines where the majority of the physicians were not adherent to recommended SHMGs for prevention of the disease.⁽¹⁰⁾ A similar study conducted by Alfaleh et al, 2015 in Al-Jouf region, in the north of Saudi Arabia measured 59 PHCs physicians' adherence to the Joint National Committee's Seventh Report (JNC-7) on hypertension guidelines. The study by Alfaleh did not measure adherence to prevention of the disease. However, they asked the physicians for their opinion concerning establishing screening programs for hypertension and offering lifestyle modifications to the patients. The majority of the physicians had favorable responses, indicating their appreciation for the importance of early detection and reducing blood pressure via non-pharmacological agents. This notion can be compared to their findings where the majority of the physicians reported screening and offering lifestyle modification interventions to their patients. However, a minority of the physicians in their sample were actually adherent to the recommended guidelines.⁽⁷⁾

Michak et al, 2004 conducted a review of studies measuring adherence to practice guidelines through assessing prescription patterns, reviewing patients' medical records and patients' and physicians' surveys in studies published between 1980 and 2004. The authors concluded that there is wide variability in the reported levels of physicians' adherence to hypertension guidelines and more emphasis is put on pharmacological therapy to measure the level of adherence.⁽¹¹⁾

However, in the study of Gosadi, 2020 they described assessment of the association between measured demographics and level of knowledge and practice adherence and found none of higher knowledge or practice adherence were statistically significant. This may be due to the low level of knowledge about prevention of hypertension or low level of adherence to the guidelines concerning screening for the disease or provision of lifestyle counselling.⁽¹⁰⁾

Also, in Al-Ali et al, 2013 study, about two third of FPs defined correctly the BP value as hypertensive for elderly after repeated measures. This is in agreement with data available from other studies using the definition of high BP according to WHO/ISH guidelines report. The information obtained appeared to be highly relevant, as it documents that a large proportion of FPs has limited familiarity with the fundamental issues dealt within the 1999 WHO/ISH guidelines: The low or limited rate of correct answers concerning a question such as the definition of the upper normality value of self-measured BP is related to different normalcy thresholds reported in the major hypertension guidelines^(9,12).

According to Ahmad et al, 2018, they divided doctors into two groups, medical officers and others (specialists and consultants). The results of Mann–Whitney test showed a significant

difference (p , value < 0.001) between knowledge possessed by two groups. Group composed of specialists and consultants was identified to be more knowledgeable (mean rank = 18.25) as compared to medical officers' group (mean rank = 7.96).⁽⁶⁾

Furthermore, Shnaimer & Gosadi, 2020 revealed that age, gender, nationality, specialty, level of education and years of practice showed no statistical association with either the level of knowledge or adherence to practice (P values $>.05$). However, physicians who reported receiving HTN management guidelines via official channels from the Directory of Health scored higher for the level of knowledge about the SMHGs in comparison to those who did not. However, whether they received any guidelines from the Directory of Health did not seem to be associated with their adherence level, which may indicate the presence of other factors influencing practice adherence. The number of patients seen by the physicians on a daily basis seemed to influence reported adherence in our sample as those physicians who saw more than 35 patients daily reported lower adherence (P value =015). Additionally, those physicians who reported attending training sessions for hypertension management during the last 2 years were more likely to report higher adherence to guidelines compared to those who did not (P value .02).⁽⁴⁾

Recommendations:

- Raising awareness of family physicians about HTN guidelines by making the copy about it available to all physicians and motivating them to read and use it in their work.
- Updating the National guidelines in order to be easier and not take time to increase adherence.
- Workshops about guidelines for more clearance and motivate them to more adherence to guidelines.
- Increase training opportunities for physicians and increase their knowledge about national guidelines.

Conclusion: A lack of knowledge about specific HTN management guidelines and inadequately reported practices' adherence were detected among PHC physicians.

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