

Assessment of knowledge, awareness, attitudes and HTN outcomes in a group of counseled hypertensive patients compared to those who was not counseled

Introduction

Hypertension (HTN) is an important public health challenge because of the associated morbidity and mortality caused by cardiovascular diseases and the cost to society.¹ HTN nearly affects 26% of adult population worldwide. By 2025 it is projected that 29% of the world's population.¹⁻³ These studies indicate that 20% to 50% of patients do not take their medications as prescribed. This indicates that medication non-adherence is the multifaceted problem, responsible for increasing the important medical and public health issues like worsened therapeutic outcome, higher hospitalization rates and increased health care costs.^{1,4}

Patients with HTN may fail to follow their medication, because of a symptomless nature of their condition, long duration of therapy, side effects, complicated drug regimens, lack of understanding about HTN management and risks, problem of economic status and individual differences among medications.⁵ HTN nearly affects 26% of adult population worldwide. By 2025 it is projected that 29% of the world's population.^{1,2} These studies indicate that 20% to 50% of patients do not take their medications as prescribed. This indicates that medication non-adherence is the multifaceted problem, responsible for increasing the important medical and public health issues like worsened therapeutic outcome, higher hospitalization rates and increased health care costs.^{1,4} It involves interaction between a pharmacist and a patient.⁶ Pharmacists can contribute to positive outcomes by educating and counseling patients to prepare and motivate them to follow their pharmaco-therapeutic regimens and monitoring plans.⁷ In this study we aim to assess the HTN outcome among counseled compared to uncounseled hypertensive patients.

Materials and method

This is a cross sectional study which was conducted in Alahsa city at the Kingdom of Saudi Arabia, from June 2015 to March 2016. A self-maintained, structured questionnaire was used to conduct interviews. This questionnaire was distributed through the internet and in the medical clinic at Shuabat Almubaraz primary health care center. 138 hypertensive patients have filled the questionnaire. The questionnaire included demographics, medical history, risk factor status, awareness, attitudes, HTN knowledge and patients' complications due to their HTN. Our primary end-point was to understand the knowledge, awareness, attitudes and HTN outcomes in a group of counseled hypertensive patients compared to those who were not counseled and to have an insight on counseling behavior among the pharmacist at Alahsaa hospitals. We calculated descriptive statistics by using Microsoft Excel 2010.

Results

We interviewed 138 hypertensive patients in our study by the questionnaire during the past 3months. Characteristics of the

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participants who completed the questionnaire are presented in Table 1. There was 34(25%) of patients have receive counseling and 104(75%) was uncounseled. All the counseled patients were at age of less than 35years old. Sex of the patients was 69(50%) male and 69(50%) female 44(32%) of patients was at age less than 35, two of them was pediatric and their parents have filled their questionnaire. 38(28%) of patients was between 35 and 45, 34(25%) was between 46 and 54, 14(10%) was between 55 and 60 and 8(6%) was above age of 60years old. Regarding comorbidities, 47(34%) patients have HTN alone, 44(32%) of them was obese, 36(26%) have dyslipidemia, 27(20%) was diabetic, 13(9%) was smoker and 4(3%) have other complication which sickle cell anemia, migraine headache, vitamin D deficiency and hyper-urecemia. Regarding duration of hypertension, 14(10%) of patients were newly diagnosed with HTN, 23(17%) diagnosed one year ago, 19(14%) had the diagnosis during the last 5years, 35(25%) were diagnosed more than 5years ago while 47(34%) did not remember the time of diagnosis (Table 2).⁸

The assessment of knowledge of participants on their target blood pressure (BP) was shown in table no.2 in which 77(76%) of uncounseled patients have a wrong answer and only 25(24%) of them have answered correctly. All counseled patients were unaware of their target BP. Table 3 is about patient's knowledge on HTN medications specifically asking about the sudden discontinuation of antihypertensive medications can result into what? There were 20(59%) of counseled and 67(64%) of the uncounseled patients thinking that sudden discontinuation of antihypertensive medications. counseled patients and 14(14%) of the uncounseled patients said that sudden discontinuation of antihypertensive medications can result into hypotension.

Others like 11(32%) of counseled patients and 26(25%) of uncounseled patients thinking that cardiovascular complications could be developed due to discontinuation of their HTN medications, Also, 7(7%) of uncounseled patients believing that nothing could happen if they stop their HTN medication suddenly while only 2(6%) of the counseled patients agreed about that as well. Finally 7(21%) of the counseled patients and 20(19%) of uncounseled patients didn't know what would happen if they stop their HTN medication

suddenly. (Table 4) (Table 5) were about hypertension outcome, here we were concerning two parts first one was Hospital admission due to hypertension while the other part was Hypertension complications.

Table 1 Base line characteristics [no. (%)]

	Total (138)	Counseled (34(25%))	Uncounseled (104(75%))
1-Sex			
Male	69(50%)	19(56%)	50(48%)
Female	69(50%)	15(44%)	54(52%)
2-Age			
Less than 35	44(32%)	34(100%)	10(10%)
35 to 45	38(27%)	0(0%)	38(36%)
46 to 54	34(25%)	0(0%)	34(33%)
55 to 60	14(10%)	0(0%)	14(11%)
Above 60	8(6%)	0(0%)	8(8%)
3-Health state			
Diabetic	27(20%)	8(23%)	19(18%)
Obese	44(32%)	7(20%)	37(36%)
Dyslipidemia	36(26%)	10(29%)	26(25%)
Smoker	13(9%)	2(6%)	11(11%)
Only hypertension	47(34%)	13(28%)	34(33%)
Others	4(3%)	0(0%)	4(4%)
4-History of HTN			
Newly diagnosed	14(10%)	2(6%)	12(11%)
One year ago	23(17%)	9(26%)	14(13%)
Last five years	19(14%)	6(18%)	13(12%)
More than five years	35(25%)	10(29%)	25(24%)
I do not remember	47(34%)	7(20%)	40(38%)

Table 2 (Knowledge of participant on target BP) [no. (%)]

	Counseled (34)	Uncounseled (104)
		25(24%) aware
Not aware		77(76%) Not aware

*Right answer was based on target BP of JNC8 based on age and comorbidities⁸

Table 3 (knowledge of participant on HTN medication) [no. (%)]

	Total (138)	Counseled (34)	Uncounseled (104)
Sudden discontinuation of antihypertensive medications can result into			
Rebound hypertension	87	20(59%)	67(64%)
Hypotension	19	5(15%)	14(13%)
Cardiovascular complications	37	11(32%)	26(25%)
Nothing could happen	9	2(6%)	7(7%)
I do not know	27	7(21%)	20(19%)

Table 4 Hypertension outcome [no. (%)]

	Total (138)	Counseled (34)	Uncounseled (104)
Hospital admission due to hypertension			
No. of hospital admission			
Once	11	5(15%)	6(6%)
Two to three times	3	0(0%)	3(3%)
More than three times	3	1(3%)	2(2%)

Table 5 Hypertension complication [no.(%)]

	Total (138)	Counseled (34)	Uncounseled (104)
Hypertension complications	24	5(15%)	19(18%)
Vascular disease	17	5(15%)	12(11%)
Cardiomyopathy	1	0(0%)	1(1%)
Ischemic stroke	5	0(0%)	5(5%)
Heart attack	1	0(0%)	1(1%)

Hospital admission due to hypertension: We can see that there were 6(18%) of counseled patients have been admitted due to their HTN, while 5(15%) of them was admitted only for one time and 1(3%) have admitted for more than 3times. On the other hand 6(6%) patients from uncounseled group have been admitted once due to uncontrolled HTN, 3(3%) patients hospitalized 2 to 3times while 2(2%) were admitted for more than 3times.

The complications of HTN which were assessed as follow

5(15%) patients in the counseled group had complications (all were vascular complications). There were no ischemic stroke, cardiomyopathy or heart attack in the counseled group while from the uncounseled group there were 19(18%) patients had complications distributed as follow 12(11%) had vascular disease, 5(5%) had

ischemic stroke, 1(1%) had cardiac myopathy and 1(1%) had heart attack. Figure 1 is assessing attitude by explaining the frequency of BP monitoring among participants.

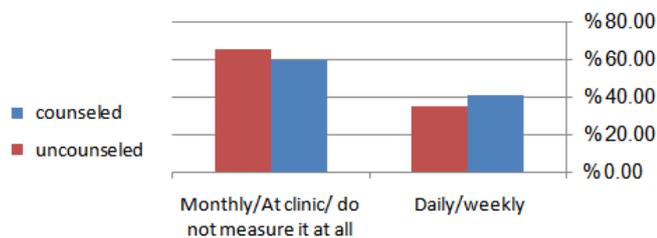


Figure 1 Frequency of BP monitoring.

There were 41% of the counseled patients and only 35% of the uncounseled patients measure their BP daily or weekly. While there were only 59% the counseled patients and 65% of the uncounseled patients measure their BP monthly, only at the clinic or they do not measure it at all. About the counseling behavior of pharmacists in Alahsa. We can see through Figure 2, that only 34(25%) have been counseled by the pharmacists while 104(75%) have not been counseled before. About the counseling method which was shown at Figure 3 there were only 38% of the counseled patients have received their counseling at the counseling room. There were 35% of the patients receive it through brochures, 6% by phone call and 21% receive it by other methods. There were only 38% of the counseled patients have received their counseling at the counseling room. There were 35% of the patients receive it through brochures, 6% by phone call and 21% receive it by other methods.

counseling behavior

■ counseled ■ uncounseled

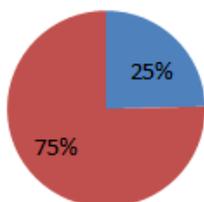


Figure 2 Counseling behavior.

■ at counseling room ■ brochures
■ phone call ■ other

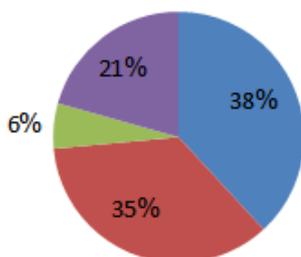


Figure 3 Method of counseling.

About the time of that counseling which was shown at Figure 4, we see 41% of this counseling was at the pharmacy during medication dispensing process, 38% was at the clinic, 15% have been counseled upon hospital admission and 6% choosing others. Through Figure 5, we can see the information that pharmacist have provide it to the patients regarding their HTN medications.

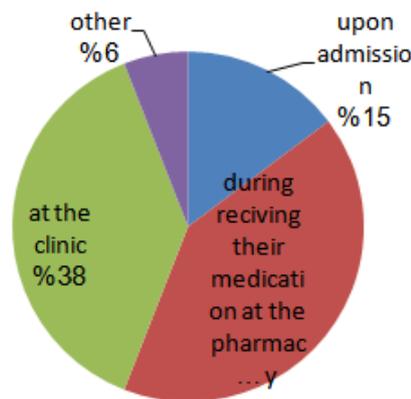


Figure 4 Time of counseling.

■ information received from the pharmacist

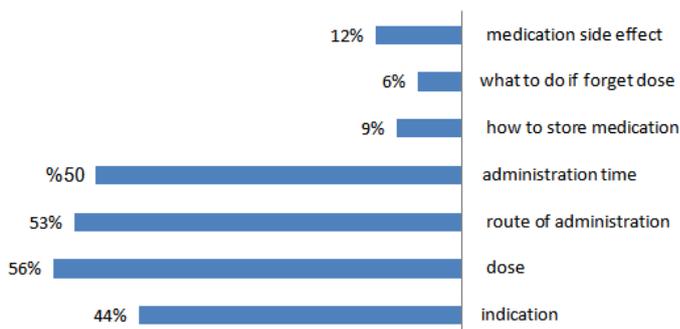


Figure 5 Information received from the pharmacist regarding medication.

Pharmacist was giving information regarding dose, route, time and indication of their medications in 56%, 53%, 50%, 44% of patients respectively while only 12% of the patients got information regarding side effects of their medications. There was also 9% and 6% of patients educated by pharmacist about how to store their medications and what to do if they forget a dose respectively.

We also have assessed information received from pharmacist regarding HTN disease itself and it was shown at the Figure 6. Most of the patients 62% received counseling on how to monitor their BP and 53% of them were informed about the importance of adhering to their physician plan, but only 21% of them know when they have to seek medical emergency. Also we asked the patients if they have received any new information from the pharmacist and their response was shown at Figure 7. On which we see 56% of the patients thinking that pharmacist have providing them information they did not know it before and result was clarified through. Also we assessed the patients' satisfactions of the counseling room and result was clarified through Figure 8. 35% of patients finding the counseling room was private, 32% see it a good place for counseling, 6% see it not suitable for counseling, 6% find it crowded, 3% said there was a lot of noise and 32% does not have counseling room at their hospitals at all.

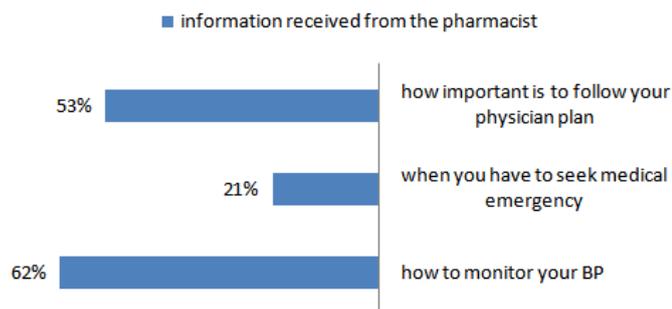


Figure 6 Information received from the pharmacist regarding HTN.

did you receive any new information from pharmacist

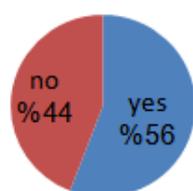


Figure 7 General information received from the pharmacist.

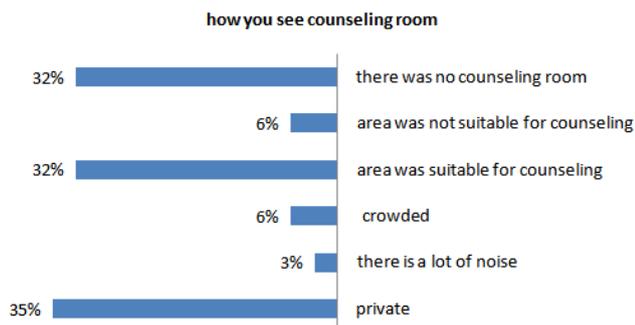


Figure 8 Counseling room.

Discussion

We conducted this descriptive survey to understand the knowledge, awareness, attitudes and HTN outcomes in a group of counseled hypertensive patients compared to those who were not counseled. Through Table 3 we can see that patients were unaware of their target BP even in the counseled group. Which suggest that counseling did not improve awareness of patients at this area. At the part of HTN medications knowledge (Table 3), there were no large difference between counseled and the uncounseled group as both percentage almost the same and this is means that counseling does not have a large effect on the patients knowledge of HTN medications.

Counseling also affects number of hospitalization which was shown in Table 4, in which there were higher frequencies of hospital admission at the uncounseled group. About the HTN complications which was assessed through Table 5. We can see that, at the counseled group there was only 5 complication and all of them was vascular diseases while the uncounseled group had 19 cases of complications 12 of them had vascular diseases, 5 had an ischemic stroke, one had cardio myopathy and one had a heart attack. This again can explain to us that how hypertensive patients were saved from life threatening

complications like ischemic stroke, cardio myopathy and heart attack through counseling.

Unfortunately, we couldn't able to say this less frequent hospital admissions and less sever HTN complications found at the counseled group compared to the uncounseled were contributed to the counseling because we collected these data from patients not from their records. At Figure 1, we can see that counseled patients have better HTN attitude almost of them measuring their BP daily or weekly while most of the uncounseled patients measure it once a month, only at the clinic or they did not measure it at all.

However this measurement wasn't effective as the result in Table 2 showed that all counseled patients weren't aware of their target BP. This could be explained by either participants have misunderstood the question or they used to measure their HTN just to record values without any awareness regarding its level. For the secondary end point we can see how worse is the counseling behavior among pharmacists at Alahsa through Figure 2, as only one third of these patients had receive counseling on such a common, chronic and progressive disease like HTN. Although, most of these patients have their HTN for more than 5years, suggesting that even though these patients have had this condition for a long duration they did not have a chance to be counseled.

At Figure 3, as we can see only 38% of the patients have received their counseling in a private area (counseling room) while the 35% receive it through brochures and 6% by phone calls. This result may suggest that many of the patients weren't knowledgeable enough on HTN because of the counseling method was brochures and as it was known that, brochures are not clear enough and not specific for each patient. Also patients may misunderstand some information on it or apply it inappropriately. This might be one of the reasons behind not encountering large difference between the two groups. Through Figure 4 we see that most of the patients have been counseled at the time of the dispensing process and to less extent at the clinic. Smaller number of patients was counseled upon admission. This was good as that mean counseling occurred at early phase of the disease before the hospitalization has happened.

Regarding information received from pharmacist we can see it at Figure 5, there was large number of patients their pharmacist had educate them about dose, route and time of administration and the indication of their medications while a small number of patients have received information regarding medication side effects, how to store their medication and what to do if they miss a dose. These reasons behind not encountering large difference between the two groups. As only small number of patients have been educated on the medication side effects.

Figure 6 was showing information received from pharmacist regarding HTN itself. It was shown that most of the patients educated on how to monitor their BP and half of them know how it is important to follow their physician plan while only a low percentage of them know when to seek medical emergency, but as the result at the Table 2 showing all counseled patients were not aware of their target BP that means this counseling was not effective at all.

At Figure 7, on which we see 56% of the patients thinking that pharmacist have educate them regarding diet, exercise, medication side effect and how HTN is a progressive disease. Regarding the counseling room (Figure 8), there was 35% of patients thinking their counseling room was private and 32% see it suitable place for counseling however 32% of the patients do not have counseling room

at their hospitals and 15% of patients were not satisfied with the counseling they had receive from pharmacists. Which could explain why some counseled patients were not knowledgeable enough as the counseling room was not suitable enough for all the patients.

Limitations

The original idea was to give counseling and then follow those patients after period of time and see the effect of counseling, but we couldn't receive the approval so we only assess the knowledge and outcome of HTN through a questionnaire. Also, we have got a small sample size on which there was 3:1 comparsion.

Recommendations

This study conclude that there were poor counseling behavior of the pharmacist at Alahsaa city since only 25%of our sample have received counseling, so we need to emphasize on the importance of patient education by pharmacist. At the same time we need to improve the quality and content of patient education as the majority of counseled patients were un-able to give correct answer especially in certain areas like blood pressure goal.

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Conflict of interest

Author declares that there is no conflict of interest.

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