

Prevalence and Correlates of Complementary and Alternative Medicine (Cam) Use Among Hypertensive Patients in Tamale, Ghana

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Abstract:

When it comes to chronic conditions like hypertension, patient health outcomes are tightly linked to adherence to orthodox care. And Complementary Alternative Medicine (CAM) use may harm patient healthcare outcomes concerning poor antihypertensive medications adherence. The purpose of the study was to assess the use of CAM among hypertensive patients of TTH for management of hypertension. An analytic cross-sectional design was adopted for this study, using the method of survey for quantitative data. Data analysis was done using SPSS version 20. The bivariate analysis was done using Chi-square to determine factors associated with CAM use. And predictors of CAM use were identified using the multiple logistics regression model. A survey was done for 131 participants, the average age of the hypertensive study participants was 56.9 ±15.5 years, and more than half (58.9%) of the respondents were females. The prevalence of CAM use was 24.6%. Factors with significant association with CAM use among the study participants were; Respondents' level of education, age, duration of hypertension illness, and comorbidity condition predicted CAM use. In conclusion, CAM use was high and, this may lead to anti-hypertensive medication non-compliance.

Keywords: prevalence; correlates; complementary; alternative; medicine; hypertensive

Introduction

Hypertension is a cardiovascular disorder that, due to inadequate treatment, has been linked to the premature death of many people around the world. A person with a blood pressure of more than 140/90 mmHg measured twice in a proper environment is classified as hypertensive [1]. Hypertension is a major worldwide issue that ranks third among the leading causes of increased disability-adjusted life years [2]. Heart failure, stroke, chronic renal disease, and occasionally spontaneous sudden death are all caused by hypertension, which is the most common cardiovascular disease in Ghana. Although the incidence of hypertension has decreased in Western nations over the last decade, it has been recorded that it is increasing in Black Africans. [3,4].

According to a meta-analysis report, the prevalence of hypertension in Africa is on the rise, with an average pooled prevalence of 19.7% in 1990, 27.4% in 2000, and 30.8% in 2010.[5]. In Ghana, the prevalence ranges from 19.0% to 32.8% in rural communities and 25.5% to 48.0% in urban communities [6]. A study in the districts of Kintampo north and south revealed

hypertension prevalence of 28.1% among the general population [4]. The existing confirmation is that the prevalence of hypertension is high (55.7%) among diabetics in the Tamale metropoli[7].

Since hypertension has no cure, patients are forced to take drugs for the rest of their lives. Patients who are being treated for hypertension with drugs must take their medications exactly as prescribed, and they must return for a refill after their medications have run out. They should keep their follow-up appointments with doctors and take the necessary preventive measures to reduce their blood pressure [8]. Patient perceptions of the efficacy, availability, affordability, and consistency of their relationship with their healthcare provider all affect patient adherence to antihypertensive medication. If conventional medicine fails to satisfy a patient, he or she is likely to turn to alternative or traditional medicine, which may lead to non-compliance with antihypertensive medication [9].

There are several different types of complementary and alternative medicine (CAM) that can be used. Biological-based (for example, herbs, vitamins); manipulation and body-based (for example, massage, chiropractic); mind-body (for example, hypnosis, prayer); and bio field-based (for example, acupuncture) (example, acupuncture, homeopathy [10]. the use of complementary and alternative medicine (CAM) is motivated by a variety of factors, including the apprehension of side effects from traditional drugs. Some CAM therapies may be considered safer by users because they are more "normal." Recent research suggests that certain complementary and alternative treatments can have serious side effects [11]. Even though CAM has gained more recognition and analysis by modern medicine in recent years, there are little data on its use in the management of hypertension.

Tradition medicine is significant in Ghana's healthcare system, as it is in other developing countries because it reflects the values and socio-religious structure of the indigenous Ghanaian community from which it arose [12]. A study in Tamale revealed that among hospital attendees, the prevalence of CAM use before hospital visit was 25.0%, and up 17.9% concurrently used CAM and orthodox medicine for the management of their sickness[13].

Despite the availability of safe and effective medications, hypertension treatment is still far from ideal, particularly in developing countries [14]. When it comes to chronic conditions like hypertension, patient health outcomes are tightly linked to adherence to orthodox care, and alternative medication use may hurt patient healthcare outcomes (15). Despite the lack of evidence about alternative medicine usage and adherence to antihypertensive medications, hypertensive patients' adherence to antihypertensive care has been low[16].

Recognizing and comprehending CAM use among hypertensive patients can aid in improving the therapeutic benefits, as well as identifying and removing possible risks associated with CAM products. The purpose of this study, therefore, is to evaluate the use of alternative medicine among hypertensive patients of TTH for management of hypertension. Hypertension is a chronic disease that has no cure and would necessitate new management options in the long run. It is also important to investigate the use of complementary and alternative medicine by hypertensive patients at the Tamale Teaching Hospital.

Methodology

Research design

An analytic cross-sectional design was adopted for this study, using the method of survey for quantitative data in Tamale Teaching Hospital, Ghana.

Sample size determination and sampling method

The population for this study refers to the total number of hypertensive patients patronizing the hypertension clinic of TTH. The sample size was calculated using the Yamane formula for calculating sample size which is stated below; where n is the sample size, N is the population size, and e is the level of precision. According to the hospital records for the year 2020 each month, the average number of hypertensive patients patronizing the hypertension clinic of TTH is 181 and the level of precision set for this study was 0.05.

Therefore:

$$n = \frac{N}{1+N(e)^2} \quad n = \frac{181}{1+181(0.05)^2} = 125$$

For non-response 5% of the calculated sample size will be added (5% of 125 = 6.25), thus $125 + 6 = 131$, hence a total of 131 respondents will be sampled for this study. Simple random sampling was used to pick participants.

Inclusion criteria

All hypertensive clients who seek healthcare at the hypertension clinic of TTH.

Exclusion criteria

Those newly diagnosed with hypertension at the time of the data collection and those with hypertensive clinic attendance less than three months were excluded from participation.

Data collection tool and procedure

A survey questionnaire, with both closed and opened, ended questions was used to collect data from the study participants. The questionnaire was divided into three sections, section A is about demographic characteristics of the respondents, B is about anti-hypertensive medication usage among the respondents, and section C is on complementary and alternative medicine.

Data analysis

Data analysis for this study was done using SPSS version 20 (IBM Corp., 2011, and NY). The results of the study were presented using tables and figures. Descriptive statistics was done using frequencies and percentages for categorical data and mean with standard deviation for continuous variables. To assess factors associated with CAM use, the bivariate analysis was performed using Chi-square. Multiple logistics regression was used to identify predictors of CAM use.

Validity and Reliability

To ensure the quality and consistency of the information, the questionnaire was pretested to allow for review and edit before the actual data collection took place. The wording of questions was stated plainly to avoid ambiguity and explanations were provided where possible to get the appropriate response. The validity of the study questionnaire was ensured by face and content validity. These were reviewed and supported by the project supervisor. The outcome of the pre-test of the study questionnaire was also be used to assess the content validity.

Ethical Consideration

Permission to collect data from patients from Tamale Teaching Hospital was obtained from the hospital before data collection. The consent of respondents to complete the questionnaire was obtained, the information provided will be kept confidential, and respondents were assured access to the study's findings. To avoid any kind of plagiarism, all sources for information used in this research were properly acknowledged.

Results

Demographic characteristics of respondents

The average age for the 130 respondents surveyed was 56.9 ± 15.5 years, with minimum and maximum ages of 21 and 98 years respectively. Most (41.0%) of the respondents were within the age group of 61 years and above. More than half (58.9%) of the respondents were females and about 51.5% of them were married. With religious affiliation, most (65.4%) of them were of the Islamic religion. More (49.2%) of the respondents had tertiary education, most (36.7%) of the unemployed, and the majority (52.0%) were with a monthly income of less than 1000 Ghana cedis. The mean years of hypertension disease among the respondents was 5.9 ± 4.9 years, with minimum and maximum years of duration being 1 and 32 years respectively. Most (41.9%) of them had their duration of hypertension between 4 to 6 years. About half (51.9%) of the respondents had a family history of hypertension. At the time of the survey, blood pressure checks revealed that most (84.3%) of the respondent's blood pressures were outside the normal range (140/90 mmHg) (Table 1).

	Frequency	Percentage
Age group	21 - 40 years	18.5%
	41 - 60 years	40.0%
	61 years and above	41.5%

Sex	Male	53	41.1%
	Female	76	58.9%
Religion	Islam	85	65.4%
	Christianity	43	33.1%
	Traditional	2	1.5%
Marital Status	Married	67	51.5%
	Single	34	26.2%
	Widow/widower	18	13.8%
	Divorced	11	8.5%
Level of education	None	34	26.2%
	Primary	14	10.8%
	Secondary	18	13.8%
	Tertiary	64	49.2%
Employment Status	Unemployed	47	36.7%
	Self-employed	42	32.8%
	Government-employed	39	30.5%
Monthly income	< 1000 GH	66	52.0%
	2000 – 3000 GH	33	26.0%
	> 3000 GH	28	22.0%
Duration of hypertension	1 - 3 years	42	32.6%
	4 - 6 years	54	41.9%
	7 years and above	33	25.6%
Blood pressure	Normal	20	15.7%
	Abnormal	107	84.3%
Presence of family history of hypertension	Yes	67	51.9%
	No	62	48.1%
Do you use CAM for hypertension treatment?	Yes	32	24.6%
	No	98	75.4%
If yes which type (s) CAM do you use?	Faith base	4	12.9%
	Traditional herbal medicine	27	87.1%

Table 1: Demographic characteristics of respondents

Prevalence of CAM use for the management of hypertension among hypertensive patients

The prevalence of CAM use for the management of hypertension among study participants was 24.6%. The average duration of use was 3.0 ±2.6 years, with minimum and maximum duration of use to be 0.4 and 10.0 years respectively. About 87.1% of them were using traditional herbal medicine and the remaining were using faith bases (Table 1).

Factors associated with CAM use for the management of hypertension among hypertensive patients

From the chi-square analysis factors with significant association with CAM use among the study participants were; Respondents level of education ($X^2 = 10.487, P=0.015$), employment status ($X^2 = 6.857, P=0.032$), monthly income ($X^2 = 6.388, P = 0.041$), duration of hypertension illness ($X^2 = 10.208, P=0.006$), and comorbidity condition ($X^2 = 14.967, P= 0.002$). However, the remaining factors such as age, sex, religion, marital status, present blood pressure, and family history of hypertension did not make difference with respondents' CAM use (Table 2).

		CAM use for hypertension treatment		Test Statistics
		Yes	No	
Age group	21 - 40 years	7	17	$X^2=5.966$ P= 0.051
	41 - 60 years	7	45	
	61 years and above	18	36	
Sex	Male	16	37	$X^2=1.397$ P= 0.237
	Female	16	60	
Religion	Islam	25	60	$X^2=4.383$ P= 0.112
	Christianity	6	37	
	Traditional	1	1	

Marital Status	Married	20	47	$X^2=4.659$ P= 0.199
	Single	8	26	
	Widow/widower	4	14	
	Divorced	0	11	
Level of education	None	15	19	$X^2=10.487$ P=0.015
	Primary	4	10	
	Secondary	3	15	
	Tertiary	10	54	
Employment Status	Unemployed	16	31	$X^2=6.857$ P= 0.032
	Self-employed	12	30	
	Government-employed	4	35	
Monthly income	< 1000 GH	22	44	$X^2=6.388$ P= 0.041
	2000 – 3000 GH	6	27	
	> 3000 GH	3	25	
Duration of hypertension	1 - 3 years	8	34	$X^2=10.208$ P= 0.006
	4 - 6 years	9	45	
	7 years and above	15	18	
Blood pressure	Normal	5	15	$X^2=0.000$ P= 0.982
	Abnormal	27	80	
History of hypertension	Yes	16	51	$X^2=0.064$ P= 0.800
	No	16	46	
What are you currently suffering?	Diabetes	4	47	$X^2=14.967$ P= 0.002
	Stroke	5	12	
	Obesity	4	14	
	Heart failure	2	0	

Table 2: Chi-square analysis of factors associated with CAM use for the management of hypertension

Study variables were further modeled with binary logistics to identify predictor factors of CAM use among respondents. Age of the hypertensive patient predicated CAM use, those of the age group, 41 -60 years were less likely about 83% to use CAM for management of hypertension as compared to those of the age group 21-40 years (AOR = 0.17, 95%, C.I. = 0.03 -0.87). Also, those with higher educational levels were less likely to engage in CAM use for hypertension management. Hypertensive patients with secondary educational levels were less likely about 94% to use CAM for hypertension management as compared to those with no education (AOR = 0.06, 95%, C.I. = 0.01-0.47). Hypertensive patients with tertiary educational levels were

less likely about 87% to engage in CAM use for the management of hypertension as compared to those with zero educational level (AOR= 0.13, 95%, C.I. = 0.02-0.85). Again, duration of hypertension condition had predication for CAM use, those with hypertension condition of the duration of 4-6 years were less likely about 75% to engage in CAM use for hypertension management as when compared to those with the condition of the duration of 7 years and above (AOR= 0.25, 95%, C.I. = 0.07-0.94). Finally, those with comorbidities were less likely about 86% to use CAM for hypertension management (AOR = 0.14, 95%, C.I. = 0.04-0.49) (Table 3).

The model predicted yes for CAM use

		B	Sig.	AOR	95% C.I. for AOR	
					Lower	Upper
Age group	21 - 40 years		.087			
	41 - 60 years	-1.786	.033	.168	.032	.867
	61 years and above	-.969	.314	.380	.057	2.507
Sex	Male					
	Female	-.955	.107	.385	.121	1.229
Religion	Islam					
	Christianity	.348	.624	1.416	.353	5.682
Marital Status	Married					
	Single	-.768	.197	.464	.145	1.490

Level of education	None		.033			
	Primary	-.966	.296	.381	.062	2.330
	Secondary	-2.861	.007	.057	.007	.466
	Tertiary	-2.053	.033	.128	.019	.846
Employment Status	Unemployed		.105			
	Self-employed	1.576	.056	4.834	.959	24.366
	Government-employed	.492	.673	1.635	.167	16.008
Monthly income	< 1000 GH		.343			
	2000 – 3000 GH	-.668	.460	.513	.087	3.008
	> 3000 GH	-1.799	.145	.165	.015	1.865
Duration of hypertension	7 years and above		.101			
	1 - 3 years	-1.119	.146	.326	.072	1.477
	4 - 6 years	-1.383	.040	.251	.067	.937
Blood pressure	Normal					
	Abnormal	.575	.394	1.778	.473	6.676
Presence of family history of hypertension	Yes					
	No	-.493	.373	.611	.207	1.807
Comorbidities	No					
	Yes	-1.952	.002	.142	.042	.485

Table 3: Binary logistics regression for predictors of CAM use for the management of hypertension

Discussion

The term "early-onset hypertension" refers to hypertension that manifests itself before the age of 55 years [17]. In this present study, the average age of the hypertensive study participants was 56.9 years, and most of the respondents were within the age group of 61 years and above. In terms of sex more than half of the respondents were females. Meanwhile, literature has it that men have a higher risk of cardiovascular and renal illness than women of the same age [18]. About half of the respondents had a family history of hypertension. Literature also has it that hypertension is more likely in people with a family history of hypertension [19].

CAM use in hypertensive patients has been studied in South Africa [20], and the United States of America [21], among other places. According to these studies, CAM use for hypertension treatment appears to be common among the studied hypertensive patients. This present study recorded the prevalence of CAM use for management hypertension among study participants to be 24.6% and most of them were using traditional herbal medicine. In a similar Ghana study, the prevalence of CAM use among hypertensive was rather low (19.5%) and most of them were also using biological base herbs [22]. Also, a study in Congo did reveal that the most use CAM for hypertension management was traditional herbal medicine [23]. However, the prevalence of use was very high (67.8%) in a study done in Ethiopia [24].

Age of the hypertensive patient predicated CAM use, those of the age group, 41 -60 years were less likely to use CAM for management of hypertension as compared to those of the age group 21-40 years. Also, in another study age was found to have a stronger link with the usage of CAM [25].

In an earlier study, educational level and duration of illness were associated with CAM use [26]. In this present study CAM use was more among those without education when compared to those with education with two variable analysis and at the multivariable analysis stage this was confirmed, higher educational level predicted CAM use. In an Ethiopian study, those with secondary and university educational levels predicted less CAM use hypertension management [24]. Duration of hypertension condition had predication for CAM use, those with hypertension condition of the duration of 4-6 years were less likely to engage in CAM use for hypertension management as when compared to those with the condition of the duration of 7 years and above. Meanwhile, in another study, these factors were not associated with CAM use [23].

In a study existence of comorbidity was found to have a stronger link with the usage of CAM [25]. Also in this current study, the existence of comorbidity was as well associated with CAM use. Those with comorbidities were less likely to use CAM for hypertension management.

The current study's two-variable analysis revealed that those unemployed were using CAM than those employed and as the respondent's monthly income increases the rate of CAM use decreases. The similarity of this study finding to an earlier study is the association of educational level and lower monthly income to the use of CAM for the management of hypertension [27]. In the current study at the multiple variable analysis stages, there was no significant prediction for CAM use. Meanwhile, in an Ethiopian study monthly income showed significance in both bivariate and multiple variable analysis [24].

Conclusion

In conclusion, about 1 out of 4 hypertensive patients are using CAM for the management of their conditions. Educational level, age, disease duration, and presence of commodities were predicted with CAM use.

Recommendation

This study finding is indicative that the prevalence of CAM use is high among hypertensive. Therefore, there is the need to shape educational services that inform patients about the advantages and drawbacks of complementary and alternative medicine.

Also, educational programs to help clinicians incorporate knowledge about complementary and alternative medicine into their practices, as well as introduce some useful CAM interventions into traditional hypertension treatments should be developed.

Finally, a further study on the effects of CAM use on hypertension management outcomes is encouraged.

Data Availability

Data for the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

This submission has no conflict of interest associated with it.

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