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RESEARCH ARTICLE

The relationship between trust, belief and adherence among patients who complain of hypertension in Ghana

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Abstract

Aim: We determined the relationship between trust, belief and adherence among patients who complain of hypertension in Ghana.

Design: A cross-sectional design was used.

Method: We sampled 447 Ghanaians with hypertension receiving care at the Korle Bu Teaching Hospital. Data were collected using a pre-tested self-administered questionnaire. Data analyses were conducted with the aid of Stata 15.0.

Results: There is low belief and trust in the biomedical treatment for hypertension. Only 36.9% of the respondents said they adhered to treatment with females expressing higher level of adherence. Trust and belief in allopathic care were associated with adherence to treatment. It is recommended that health workers identify effective ways of improving patients' trust in the allopathic care for hypertension through teaching and re-enforcement models to enhance treatment adherence and reduce the complications of hypertension.

Patient or Public Contribution.

KEYWORDS
belief, hypertension, treatment adherence, trust

1 | INTRODUCTION

Globally, hypertension is a major public health problem associated with serious health complications such as stroke, myocardial infarctions and kidney failure (Atibila, Hoor, et al., 2021; Konlan, Afam-adjei, et al., 2020; WHO, 2020). It is said that over 35% of adults are living with hypertension globally and that 9.2% of adult deaths is due to hypertension-related events (Atibila et al., 2018; Konlan, Afam-adjei, et al., 2020; WHO, 2020). It is estimated that over a billion people currently suffer from hypertension (Konlan, Armah-mensah, et al., 2020). This figure is expected to increase to over two billion in 2025 (Atibila et al., 2018, Atibila, Ten Hoor, et al., 2021; Konlan, Pwavra, et al., 2022; Nyaaba et al., 2018). In sub-Saharan Africa (SSA), hypertension is now at epidemic levels and results in major complications which burden the under-resourced healthcare system (Atibila, Hoor, et al., 2021; Aziato et al., 2021; de Oliveira-Filho et al., 2014; Konlan, Afam-adjei, et al., 2020; Konlan, Armah-mensah, et al., 2020; Nyaaba et al., 2018). Hypertension is a major cause of heart diseases, stroke, renal failure, peripheral vascular disease and premature mortality and disability in most countries in SSA (Atibila, Ten Hoor, et al., 2021; Bosu, 2015; Konlan, Baku, et al., 2020; Sumaila et al., 2016).

In Ghana, the prevalence of cardiovascular diseases (CVDs) is increasing at an alarming rate (Atibila et al., 2018) and hypertension is said to be responsible (Atibila, Hoor, et al., 2021; Konlan, Afam-adjei, et al., 2020; Nyaaba et al., 2018). It has been reported that hypertension is a significant risk factor for coronary heart diseases, ischaemic heart diseases and stroke among Ghanaians (Atibila, Hoor, et al., 2021; Konlan, Afam-adjei, et al., 2020; Nyaaba et al., 2018). The prevalence of hypertension among Ghanaians ranges from 28.5% to 40.0% (Atibila, Hoor, et al., 2021) with higher rates in urban communities (Konlan, Afam-adjei, et al., 2020).

The increasing rates of hypertension calls for a comprehensive approach to manage the condition as well as the complications associated with it (Atibila, Hoor, et al., 2021; Atibila, Ten Hoor, et al., 2021). The allopathic care model for hypertension involves pharmacological and non-pharmacological strategies (Atibila, Hoor, et al., 2021; Aziato et al., 2021; Konlan, Armah-mensah, et al., 2020; WHO, 2020). The pharmacological approach is also known as the drug approach and involves using anti-hypertensive drugs like beta-blockers, beta-blockers with intrinsic sympathomimetic activity, alpha-1 blockers, combined alpha and beta-blockers, vasodilators and angiotensin II receptor blocker (Nyaaba et al., 2018; Tibazarwa & Damasceno, 2014; WHO, 2020). On the other hand, the non-pharmacologic approach involves; nutritional, regular exercise and avoidance of exposure to active and passive tobacco smoke as well as reducing alcohol intake (Atibila et al., 2018; Atibila, Ten Hoor, et al., 2021; Bosu, 2015; WHO, 2020). Even though progress has been made by health workers trained based on the allopathic care model to control hypertension-related complications using the two-pronged approaches proposed by the biomedical model of care, it is still considered a major public health problem due to its rising prevalence and persistence of complications (Atibila, Hoor, et al., 2021; Konlan, Afam-adjei, et al., 2020; Nyaaba et al., 2018; WHO, 2013; Yeboah et al., 2018).

Reducing hypertension-related complications and morbidities requires adherence to treatment by patients (Dewhurst & Walker, 2016). The allopathic model of care requires that patients with hypertension apart from lifestyle adjustments, take drugs to control their rising blood pressures (Atibila, Hoor, et al., 2021; Bosu, 2015; Nyaaba et al., 2018). Patients who hope to avoid the complications of high blood pressure are encouraged to adhere to their treatment regimen (Atibila et al., 2018; Dewhurst & Walker, 2016; Konlan, Afam-adjei, et al., 2020). Adherence to treatment is crucial in preventing hypertension-related complications (Atibila, Ten Hoor, et al., 2021; Konlan, Armah-mensah, et al., 2020) and it has been shown to improve quality of life and also reduce primary care, out-patient and emergency department visits (Konlan, Asampong, et al., 2022). Most hypertensive patients in Ghana might not be aware of this enormous benefit of treatment adherence and might not be adhering to their treatment (Konlan, Armah-mensah, et al., 2020; Nyaaba et al., 2018). A considerable number of hypertensives could also not be adhering to treatment because they do not belief nor trust the allopathic healthcare system and thus do no adhere to the treatment thereof (Atibila, Ten Hoor, et al., 2021; Dewhurst & Walker, 2016; Lee et al., 2013).

Trust in the biomedical approach to managing hypertension has been acknowledged in other contexts as a promising strategy to improve adherence to treatment (Chow et al., 2013; Cuffee et al., 2013; de Oliveira-Filho et al., 2014; Elder et al., 2012). Individuals who trust treatment given to them are more likely to: (i) have an increased willingness to utilize allopathic care facilities (Chow et al., 2013); (ii) accept recommendations from allopathic care staff (iii) adhere to prescribed treatment. In addition, trust in the allopathic care model is linked to behavioural changes aimed at secondary prevention as it directly influences confidence and belief in secondary preventive strategies (Abel & Efird, 2013; Hussanin et al., 2011; Konlan, Asampong, et al., 2022; Lee et al., 2013).

Belief is a social construct definitive of the level of *habit of mind in which trust or confidence is placed in some person or thing* (Aziato et al., 2021; Lee et al., 2013; Ozawa & Walker, 2011). Believe in something or a practice develops in a person based on a myriad of socio-cultural factors such as; the social environment of the person, nature of socialization, religious inclinations, educational background, gender, socio-economic status among others (Bertsou, 2019; Lee et al., 2013; Ozawa & Walker, 2011). The belief in any model of health care determines the amount of trust and confidence placed on the said model and influences the level of adherence to the model (Bertsou, 2019). Individuals adhere to treatment models that they have believe that such models are useful to their problems (Atibila, Hoor, et al., 2021). Thus, belief in the allopathic model of healthcare promotes trust-building and ultimately leads to adherence as well as reduction in complications (Elder et al., 2012).

Some authors (Aziato et al., 2021; Elder et al., 2012; Nguyen et al., 2009; Piette et al., 2005) have reported that trust is associated with increased treatment adherence in suicide, irritable bowel syndrome therapy, diabetes, cancers and antiretroviral therapy. And that low level of trust is associated with declines in treatment adherence among diabetics (Elder et al., 2012) and patients undergoing care for hypertension (Cuffee et al., 2013) in other jurisdictions but this remains largely undetermined in SSA, a geographical location with high prevalence of hypertension. Furthermore, complications and mortalities associated with hypertension in SSA are still high despite the marked improvement in biomedical care (Dewhurst & Walker, 2016). Mistrust in allopathic care has been cited as possibly responsible for the non-adherence to treatment among patients with chronic conditions (Aziato et al., 2021; Konlan, Baku, et al., 2020; Lee et al., 2013).

1.1 | Aim

We determined the relationship between trust, belief and adherence among patients who complain of hypertension in Ghana.

1.2 | Conceptual framework underpinning the study

This study was underpinned by the healthcare utilization model proposed by Andersen (1995; Bradley et al., 2004; Travers et al., 2020). The Andersen healthcare utilization model is a model aimed at demonstrating the factors that influence the utilization of healthcare services (Travers et al., 2020). According to the model, usage of health services is determined by three dynamics: predisposing factors, enabling factors and need (Travers et al., 2020). The predisposing characteristics determine whether an individual is more or less likely to use health services based on demographic characteristics, position within the social structure and belief in benefits of the use of health services (Andersen, 1995; Bradley et al., 2004; Travers et al., 2020). An individual who believes that health services are useful for treatment will likely utilize those services (Travers et al., 2020). The enabling characteristics in the behavioural model reflect the fact that, while the individual may be predisposed to use health services, he or she will not use these services unless able to do so (Andersen, 1995; Bradley et al., 2004; Travers et al., 2020). The ability to use health services depends on one's family resources including income/socioeconomic, health insurance, type of regular source of care and access to regular source of care and community level resources such as ratios of healthcare providers and facilities available to the population, and the cost of healthcare services. The behavioural model stipulates that even in the presence of the appropriate levels of the predisposing and enabling characteristics, individuals must perceive some need for using health service. The need for health services determines the level of adherence to health services (Andersen, 1995; Bradley et al., 2004; Travers et al., 2020).

The Andersen model is useful because of its flexibility in allowing researchers to choose independent variables related to their specific hypotheses (Travers et al., 2020). A schematic illustration of the healthcare utilization model is shown below.

From the conceptual framework (Figure 1), the predisposing factors in this study included factors such as sex, age, religion, educational status and marital status. The enabling factors included income levels, trust, belief and access to health insurance. Need represented both perceived and actual need for healthcare services which eventually determined the level of adherence.

2 | METHODS

2.1 | Study design

In this study, we used a cross-sectional survey design and adapted the healthcare utilization model as the conceptual framework. This model looks at the extent to which clients utilize the services rendered in health facilities (Korle Bu Teaching Hospital (KBTH), 2017). Individuals diagnosed with hypertension and receiving care at the Hypertensive Clinic of the Central Out Patient Department (COPD) at the Korle Bu Teaching Hospital (KBTH) were recruited to participate in the study.

2.2 | Setting

The study was conducted at the Korle Bu Teaching Hospital (KBTH), a resource-constrained hospital in the capital of Ghana where there is a consistent shortage of staff coupled (Konlan, Pwavra, et al., 2022) with increasing patient numbers largely from non-communicable diseases (NCDs; Aziato et al., 2021; KBTH, 2017; Konlan, Asampong, et al., 2022; Konlan, Pwavra, et al., 2022). The KBTH is located in the Southern part of Ghana and it is the national referral hospital in Ghana (Ghana Health Service (GHS), 2017). It is the third largest hospital in Africa (KBTH, 2017; Konlan, Baku, et al., 2020). The KBTH which was established in 1923 has grown from an initial 200 beds to 2000 beds and 17 clinical and diagnostic Departments. The hospital is traditionally known to receive huge numbers of referral cases from across the country with daily average patient attendance of 1500 with average daily admission of 250 patients (KBTH, 2017). The respondents were selected from the hypertensive Out Patient Department (OPD) Clinics at the KBTH. These clinics run for 4 days

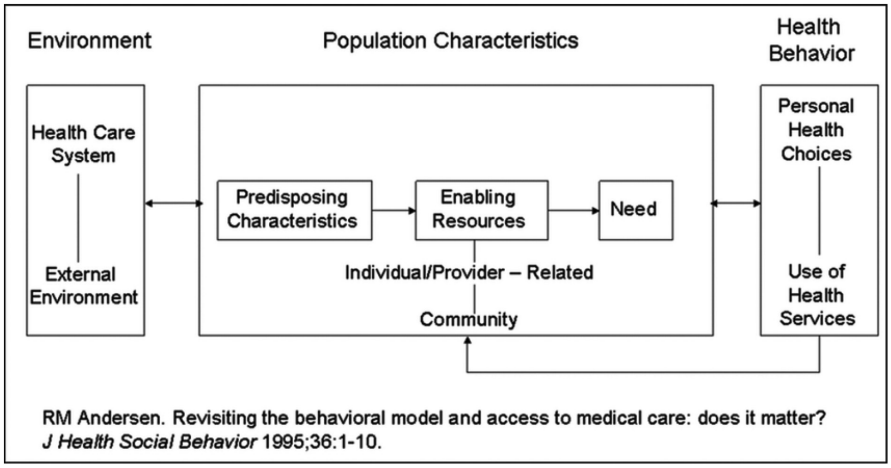

FIGURE 1 Healthcare utilization model (Andersen, 1995).

in a week from 8 AM to 2 PM. The working days for the clinics were Mondays, Tuesdays, Thursdays and Fridays.

2.3 | Sample size determination

The sample size for the study was determined using the Cochran formula for determining sample size (Polit & Beck, 2014). Thus, the sample size of 385 respondents was required at a desired precision of 0.05 and at an estimated adherence rate of 50%. After adding 20% for non-response rate, the sample size for the study was estimated to be 461 respondents.

2.4 | Selection of respondents and data collection

We included individuals with hypertension visiting the hypertensive clinic of the COPD at the KBTH for review post-discharge. The inclusion criteria for the selection of the study respondents included Ghanaian hypertensive patients between the ages of 35–65 years with history of previous admission for hypertension and being well oriented to time and place with no signs of mental illness. The age limit of 35–65 years was chosen because hypertension usually occurs in adults particularly in SSA (de Oliveira-Filho et al., 2014; Konlan, Asampong, et al., 2022; Konlan, Pwavra, et al., 2022). The decision to exclude those above 65 years was because of the decrease in cognitive abilities after 65 years which could affect recall in filling the questionnaire (Aziato et al., 2021; de Oliveira-Filho et al., 2014; Konlan, Afam-adjei, et al., 2020, Konlan, Asampong, et al., 2022).

A simple random sampling technique of balloting without replacement was done using the patients' folders at the hypertensive clinic of the COPD usually in the morning during waiting time. The patients' folders were numbered and the corresponding numbers were written on small pieces of paper. The small pieces of paper with the numbers were then placed in a covered container and shaken thoroughly after which 30 papers with corresponding numbers representing patients' folders were selected without replacement. The consent of those selected was obtained and if they refused to consent, they were replaced by picking other small pieces of paper with the numbers corresponding to specific folders of patients until the total of 30 respondents was selected. The data collection was done on Fridays during a period of 15 weeks (November, 2018 to March, 2019) excluding public holidays.

A pre-tested questionnaire was used as the data collection tool. Prior to the data collection, the questionnaire was pre-tested among hypertensive patients at the Polyclinic of the KBTH. The questionnaire contained sections which asked about the socio-demographic characteristics such as age of respondents, sex of respondents, highest educational level, marital status, occupation, income level, having a valid health insurance, belief in allopathic care and trust in the current allopathic care as well as adherence to treatment using an adapted Morisky Medication Adherence Scale (MMAS) which consisted of eight items (Culig & Leppée, 2014; de Oliveira-Filho et al., 2014). The words of the original tool were modified after a pre-testing at the Polyclinic of the KBTH in such a way that it was suitable for the Ghanaian population as suggested in literature (de Oliveira-Filho et al., 2014). This pre-tested modified MMAS had an overall reliability of 0.84 and consisted of eight items just like the original scale. Trust and belief were determined at a categorical level by asking the participants to state whether or not they had trust in the allopathic care model as well as whether they had belief that the biomedical or allopathic model was capable of solving their problems. Affirmative responses were indicative of trust and also of belief. The data were entered into Microsoft Excel 2016. The data were then exported into the Stata 15.0 to aid with the analysis.

2.5 | Data analysis

We analysed the data using the Stata 15.0. During the analysis, we did a gender comparison of socio-demographic variables using Pearson's χ^2 test. The eight-item adapted Morisky Medication scale for Ghanaians which had a reliability of 0.84 was used to assess adherence to treatment. The scores on the adapted scale were summed to create an overall adherence score with a possible score range of 0–8. Scores of 6 and above were considered as high adherence representing adherence to treatment, while scores below 6 were considered as low levels of adherence representing non-adherence (de Oliveira-Filho et al., 2014). Trust was determined as an affirmative answer to whether the respondents trusted the treatment and similar criteria were used to assess belief in current treatment for hypertension. In determining the association between adherence to treatment and trust in biomedicine as well as the other socio-demographic variables, we used the Pearson's χ^2. After the binary analysis, logistic regressions were used to determine the strength of associations. In this study, $p < 0.05$ was considered statistically significant.

3 | RESULTS

3.1 | Socio-demographic characteristics of respondents

A total of 447 respondents took part in the study and this represented a response rate of 96.96%. More than half (57.9%) of the respondents were females. The mean age of the respondents was 53.1 ± 7.3 years. Christians formed 57.5% of the respondents. Also, the majority of the respondents (61.3%) were married and only 40.0% of the respondents reportedly had valid health insurance. In addition, only 37.4% of the respondents had high education with almost half (46.5%) in the low-income brackets. Further, only 31.8% were engaged in the formal sector of employment with 33.6% claiming to be on retirement/unemployed (Table 1).

TABLE 1 Socio-demographic characteristics of respondents.

Socio-demographic characteristics	Males, *n* (%) 188 (42.1%)	Females, *n* (%) 259 (57.9%)	Total, *n* (%) 447, (100)
Age in years: mean (±SD)	51.2 ± 4.8	54.5 ± 8.5	53.1 ± 7.3
Religion			
Christian	91 (48.4)	166 (64.1)	257 (57.5)
Muslim	110 (58.5)	11 (4.3)	121 (27.1)
African traditional	11 (5.9)	58 (22.4)	69 (15.4)
Marital status			
Single	18 (9.6)	1 (0.4)	19 (4.3)
Married	90 (47.9)	184 (71.0)	274 (61.3)
Divorced/Separated	80 (42.6)	74 (28.6)	154 (34.4)
Valid health insurance			
Yes	14 (7.5)	165 (63.7)	179 (40.0)
No	174 (92.5)	94 (36.3)	268 (60.0)
Level of Educ.			
Low	136 (72.3)	86 (33.2)	222 (49.7)
Middle	0 (0)	58 (22.4)	58 (13.0)
High	52 (27.7)	115 (44.40)	167 (37.3)
Income level			
Low	132 (70.2)	76 (29.3)	208 (46.5)
Middle	29 (15.4)	76 (29.3)	105 (23.5)
High	27 (14.4)	107 (41.4)	134 (30.0)
Occupation			
Formal	22 (11.7)	120 (46.3)	142 (31.8)
Non-formal	48 (25.5)	107 (41.3)	155 (34.7)
Retired/unemployed	118 (62.8)	32 (12.4)	150 (33.5)

Note: Frequency (*n*) and percentage (%).

3.2 | Information about hypertension

Regarding the information about hypertension among the respondents as depicted in Table 2, More than half (60%) of the respondents claimed their hypertension had been diagnosed during the last 1–5 years. The majority of the respondent (60%) claimed to be on three anti-hypertensive drugs. All the respondents said they used other means of managing their condition or its complications. Also, almost half (46.5%) said they used other self-medicated drugs to manage their hypertension with 36.9% claiming they used local herbs to support their treatment. The majority of the respondents (65.3%) said that they did not believe the allopathic care they were receiving in the hospital for their hypertension with only 32.4% claiming to trust the biomedical model of treating hypertension (Table 2).

3.3 | Adherence to treatment

The results revealed that only 36.9% of the respondents claimed to adhere to treatment. Also, adherence to treatment was higher in male respondents (Table 3).

3.4 | Association between trust in allopathic care and other socio-demographics

The results showed that trust in allopathic care was significantly associated with sex and that females' had more trust. Also, Christians had more trust as compared to the other religions. Respondents with valid health insurance had more trust in allopathic care. Trust was found to be significantly associated with the marital status. In addition, respondents with high education and high income status had trust in the biomedical care for hypertension. Furthermore, health workers who were employed in the non-formal sector had more trust in the allopathic care model (Table 4).

3.5 | Association between trust and treatment adherence

The results showed that trust in allopathic treatment was significantly associated with treatment adherence ($p < 0.001$). Also, belief in the current allopathic treatment was significantly associated with adherence to treatment ($p < 0.001$). In addition, respondents who had recently being diagnosed with hypertension adhered more to

TABLE 2 Information on hypertension.

Hypertension information	Males, *n* (%) 188 (42.1%)	Females, *n* (%) 259 (57.9%)	Total, *n* (%) 447, (100)
Duration of HPT in years			
1–5	132 (70.2)	136 (52.5)	268 (60.0)
6–10	41 (21.8)	108 (41.7)	149 (33.3)
10	15 (8.0)	15 (5.8)	30 (6.7)
Number of antihypertensive			
2	41 (21.8)	19 (7.3)	60 (13.4)
3	132 (70.2)	136 (52.5)	268 (60.0)
4	15 (8.0)	89 (34.4)	104 (23.2)
5	0 (0)	15 (5.8)	15 (3.4)
Use other treatment			
Local herbs	56 (29.8)	109 (42.1)	165 (36.9)
Natural products/teas	0 (0.00)	74 (28.6)	74 (16.6)
Other self-medicated drugs	132 (70.2)	76 (29.3)	208 (46.5)
Belief current HPT treatment			
Yes	74 (39.4)	91 (35.1)	155 (34.7)
No	114 (60.6)	168 (64.9)	292 (65.3)
Trust current HPT treatment			
Yes	67 (35.6)	78 (30.1)	145 (32.4)
No	121 (64.4)	181 (69.9)	302 (67.6)

Note: Frequency (*n*) and percentage (%).

TABLE 3 Adherence to treatment among respondents.

	Treatment adherence	
Profile of respondents	Frequency (*n*)	Percentage (%)
Male	72	38.3
Female	93	35.9
Total	165	36.9

Note: Frequency (*n*) and percentage (%).

treatment. Furthermore, adherence to treatment was significantly associated with less number of antihypertensive ($p < 0.001$; Table 5).

3.6 | Multivariable logistic regression of the relationship between treatment adherence and trust as well as belief in current hypertension treatment

In order to determine the influence of trust and belief in current treatment on treatment adherence among the respondents, binary logistic regression analysis was carried out using two models (Table 6). Model I was a bivariate logistic regression analysis of trust and belief in current allopathic treatment for hypertension on treatment adherence in Table 5. Model II was a multivariable logistic analysis of trust and belief in current allopathic treatment for hypertension on treatment adherence adjusting for sex, religion, marital status, income level, occupation, level of education, valid health insurance, number of hypertension drugs and duration of hypertension. The results showed that for a one unit increase in overall trust, the odds of adhering to treatment was increased by 17.45 times (AOR = 17.45, 95% CI: 12.69–30.83) as compared to those without trust. Similarly, for a unit increase in belief in the current hypertension treatment, the odds of experiencing an increase in treatment adherence was increased by 30.14 times (AOR = 30.14, 95% CI: 18.72–49.11) as compared with those with no belief in current hypertension treatment (Table 6).

TABLE 4 Association between trust in allopathic care and socio-demographic factors.

Socio-demographic factors	Trust 145 (100)	χ^2, *p*-value
Sex		
Male	19 (13.1)	136.8, <0.001
Female	126 (86.9)	
Religion		
Christian	58 (40.0)	60.4, <0.001
Muslim	47 (32.4)	
African traditional	40 (27.6)	
Marital status		
Single	10 (6.9)	409.4, <0.001
Married	119 (82.1)	
Divorced/Separated	16 (11.0)	
Valid health insurance		
Yes	113 (77.9)	241.4, <0.001
No	32 (22.1)	
Level of education		
Low	9 (6.2)	308.2, <0.001
Middle	40 (27.6)	
High	96 (66.2)	
Income level		
Low	10 (6.9)	360.9, <0.001
Middle	52 (35.9)	
High	83 (57.2)	
Occupation		
Formal	47 (32.4)	241.7, <0.001
Non-formal	97 (66.9)	
Retired/unemployed	1 (0.7)	

Note: Data are presented as *p*-values were determined using χ^2.

4 | DISCUSSION

The study found that females constitute the majority of hypertensive patients in Ghana. This finding is in line with the study done

by (Atibila et al., 2018; Drayton-Brooks & White, 2014; Glynn et al., 2010; Konlan, Pwavra, et al., 2022) who found out that more females sought health care as compared to males. More than half of the respondents had no valid national health insurance registration as was stated in other studies (Nyako, 2016). The lack of valid insurance has serious implications on financial access to health. Similarly, respondents with lower and middle level educational and income level were in the majority and most of them had no valid insurance and this could lead to poor health seeking as financial access could be a major impediment to care seeking as stated by (Atibila, Hoor, et al., 2021; Konlan, Afam-adjei, et al., 2020; Nyako, 2016). Also, more than half of the respondents had their hypertension diagnosed in the last 1–5 years and this point to the fact that most of them were newly diagnosed hypertensives. All the respondents claimed they used other treatments to manage their hypertension and this included; self-medicated drugs, local herbal preparations and natural products. This could largely be due to the fact that majority did not belief in the current allopathic care for hypertension with more than half claiming not to trust the allopathic treatment for hypertension (Lee et al., 2013). This finding of low level of belief and trust in current allopathic care for hypertension is in line with those found by (Atibila et al., 2018; Cuffee et al., 2013; Nguyen et al., 2009) that reported low trust level in the biomedical model of care for chronic and non-communicable diseases. This calls for structured approaches focusing more on community and individual engagement aimed at building trust in the biomedical approach to care so as to reduce the complications of diseases particularly NCDs which have assumed epidemic levels in Ghana (Atibila, Ten Hoor, et al., 2021).

This study showed that just a little over a third of the respondents claimed to adhere to treatment with males displaying higher adherence to treatment as compared to females. The high level of adherence of males to treatment could be because of the male-dominated decision-making process in the Ghanaian society. Males are often the decision makers in the homes in Ghana whereas females and children need male consent to accept even treatment given to them in the hospital (Atibila et al., 2018; Lee et al., 2013). This study's finding on adherence is higher compared to the adherence level of 7% reported in Kumasi, Ghana (Bosu, 2015; Buabeng et al., 2004; Konlan, Armah-mensah, et al., 2020). It is also higher than the adherence rate of 15% found by (Hussanin et al., 2011). The finding is however similar to those found by (Mukora-Mutseyekwa & Chadambuka, 2013) who reported an adherence rate of 40.2% in Zimbabwe. The finding is however lower than a similar study done in a teaching hospital in Nigeria which reported a higher adherence level of 85.5% (Okoro & Ngong, 2012). In addition, the finding is lower than adherence level of 64.6% reported by (Ambaw et al., 2012) in North West Ethiopia and the 65.1% reported from China (Lee et al., 2013).

This study found that few of the respondents expressed trust in the allopathic care for hypertension and even those who claimed to trust the current allopathic treatment were among those who used other treatment such as local herbs, self-medications and other natural products to complement their management and this is similar to

TABLE 5 Association between treatment adherence and trust.

Hypertension information	Adherence 165 (100)	χ^2, *p*-value
Trust		
Yes	145(87.9)	136.9, <0.001
No	20 (12.1)	
Belief current HPT treatment		
Yes	155 (93.9)	326.8, <0.001
No	10 (6.1)	
Duration of HPT in years		
1–5	99 (60)	78.31, <0.001
6–10	55 (33.3)	
10	11 (6.7)	
Number of antihypertensive		
2	36 (21.8)	0.543, 0.909
3	102 (61.8)	
4	21 (12.7)	
5	6 (3.6)	

Note: Data are presented as *p*-values were determined using χ^2.

TABLE 6 Multivariable logistic regression of the relationship between treatment adherence and trust as well as belief in current hypertension treatment.

	Treatment adherence					
Independent variables	Crude odds ratio	95% CI	*p*-Value	Adjusted odds ratio	95% CI	*p*-Value
Trust						
No	Reference					
Yes	12.99	10.03–23.60	<0.001	17.45	12.69–30.83	<0.001
Belief in current hypertension treatment						
No	Reference					
Yes	8.83	7.22–13.37	<0.001	30.14	18.72–49.11	<0.001

Note: Logistic regression models adjusted for sex, religion, marital status, income level, occupation, level of education, valid health insurance, number of hypertension drugs and duration of hypertension.

those found in other studies (Abel & Efird, 2013; Atibila, Ten Hoor, et al., 2021; Cuffee et al., 2013; Nguyen et al., 2009).

Trust was found to be associated with valid health insurance as those who had valid insurance had more trust in the current allopathic care for hypertension. Patients who trust in the allopathic care model usually make efforts to ensure they continual have access to allopathic healthcare facilities and thus are more likely to register for health insurance to grant them financial access to the allopathic care model (Cuffee et al., 2013).

Also, the study found that higher education and income levels were associated with trust in allopathic care. This is partly because higher education improved the patients' perception and appreciation of the scientific basis of their disease conditions and this intend promotes trust in treatment (Atibila, Ten Hoor, et al., 2021; Glynn et al., 2010; Lee et al., 2013). In addition, high income levels was associated with trust in treatment. Patients with high income levels had easy financial access to health care and thus would interact more with health professionals trained in allopathic care and thus could easily develop belief and trust in the allopathic care model for hypertension (Atibila et al., 2018; Konlan, Baku, et al., 2020; Lee et al., 2013).

Trust and belief in allopathic care were found to be significantly associated with treatment adherence. People tend to trust in things they have faith as well as belief in and this affects their decision to adhere to treatment. This is particularly true in Africa where underlining socio-cultural factors could reduce trust and treatment adherence (Atibila, Ten Hoor, et al., 2021). This finding is similar to those found by (Abel & Efird, 2013; Cuffee et al., 2013; Elder et al., 2012) who found that trust and belief in allopathic care was significantly associated with treatment adherence. Individuals who belief the allopathic care model for hypertension will most likely trust the treatment model and hence adhere to treatment (Elder et al., 2012). Trust is rooted in belief (Abel & Efird, 2013) and thus patients who belief the biomedical model of care easily develop trust and are more likely to comply with treatment options in the biomedical care model (Mukora-Mutseyekwa & Chadambuka, 2013). On the contrary, persons with no belief in the allopathic care model and its personnel tend to develop less trust and often have low adherence to treatment (Atibila, Ten Hoor, et al., 2021; Chow et al., 2013; Cuffee et al., 2013). Trust in the allopathic care and its key personalities of specialist nurses, physicians, pharmacists and host of others provide a useful means of combating the complications of hypertension as it enhances adherence to treatment (Chow et al., 2013).

In line with the conceptual framework of this study, even in the presence of the appropriate levels of the predisposing and enabling characteristics, individuals must perceive some need for using health services (Travers et al., 2020). The choice of which model of health service that the individual will subscribe to is a function of the belief (Bradley et al., 2004; Nyaaba et al., 2018; Travers et al., 2020) and trust in that model (Chow et al., 2013). Essentially, trust and belief are key enabling factors for adherence to treatment and are useful for improving healthcare utilization for chronic conditions like hypertension in the African socio-cultural context.

5 | CONCLUSION

There is low belief and trust in the biomedical treatment for hypertension. Trust in allopathic care is significantly associated with sex, religion, marital status, valid health insurance, higher educational level and income levels. Also, trust and belief in allopathic care is significantly associated with adherence to treatment. It is recommended that health workers focus on identifying effective ways of improving patients' belief and trust in the allopathic care model for hypertension through teaching, community engagement and re-enforcement models to enhance treatment adherence so as to reduce the complications of hypertension.

5.1 | Limitations of the study

The assessment of the key variables using a questionnaire could have been affected by recall bias even though the investigators entreated the respondents to frankly respond to each question on the questionnaire. Future studies should consider introducing a qualitative aspect to elicit more subjective data considering that trust and belief are more social phenomenon and better measured qualitatively. However, the findings in this study provides a basis for in-depth studies using qualitative designs in future.

The study used a cross-sectional design making it difficult to infer causation but the study provides some evidence about the association between trust and treatment adherence and this can serve as a basis for future longitudinal studies. Also, the restriction of the study to only hypertensive receiving care at the Korle Bu Teaching hospital in Accra makes it difficult to generalize for other settings in Ghana even though the characteristics in this setting may be similar to those in other areas within Ghana.

In addition, only adherence to treatment was assessed with a standardized tool, the other variables such as trust and belief were assessed using just categorical responses, and this makes the conclusions drawn to be weak and limited. It is recommended that future studies need to find appropriate tools/ scales to assess these outcomes in a valid way.

AUTHOR CONTRIBUTIONS

Kennedy Dodam Konlan contributed to conception, design, data analysis, drafting manuscript and bears the primary responsibility for the content of the manuscript. Abdul Razak Doat, Roberta Mensima Amoah and Iddrisu Mohammed were involved in the data collection. Kennedy Dodam Konlan was involved in the data analysis. Juliana Asibi Abdulai and Joel Afram Saah revised the manuscript. All the authors read and approved the content of the manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no any competing/financial interests.

DATA AVAILABILITY STATEMENT

The dataset supporting the conclusion of this study is available for systematic review and meta-analysis upon request.

ETHICAL APPROVAL AND CONSENT TO PARTICIPATE

The study data were part of the protocol titled: 'Adherence to Management and Quality of Life of Ghanaian Hypertensive on a Structured Health Education Programme (SHEP) (REDACTED)'. We obtained permission from the Deputy Director of Nursing Service of the Central Out Patient Department of the study site prior to data collection. Also, we explained the purpose of the study to each respondent before obtaining written informed consent for the study. Further, we ensured confidentiality of the data collected by assigning unique codes to each response. We also maintained privacy and ensured anonymity throughout the data collection and analysis of the data.

CONSENT FOR PUBLICATION

Not applicable.

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