



# A qualitative analysis of factors influencing health-seeking behavior of people living with HIV, hypertension and diabetes in an urban area of Ghana

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## Abstract

Non-communicable diseases are rising globally and lower-middle-income countries are now facing a double-burden of communicable and non-communicable diseases like hypertension and diabetes. Patients with HIV/AIDS are at increased risk of developing hypertension and diabetes. Understanding how this double-burden influences persons living with HIV health-seeking behavior (HSB) is critical to identifying successful interventions and policies. To explore the factors that influence the health-seeking behavior of HIV patients with hypertension and diabetes in an urban setting of Ghana, we undertook a qualitative study consisting of sixteen in-depth interviews (five healthcare providers [HCP] and eleven patients); all recruited from Antiretroviral Therapy (ART) clinics in the Techiman South Municipality of Ghana. Interview questions were designed to explore cognitive, affective, social, and environmental factors that influence an individual's decision-making process and behavior. All interviews were audio-recorded, transcribed, and analyzed thematically.

Participants raised unique challenges while seeking treatment services for HIV, hypertension, and diabetes. Frequent appointments, increased pill burden, food restrictions, alternate sources of care (herbalist and pastors), and negative psychological wellbeing were some of the challenges noted for seeking treatment services. Challenges with the health facility, including separate clinic days for comorbid conditions, high costs of medications and transportation, and long waiting hours were also cited as influencing health-seeking behavior.

Results indicate greater challenges for HIV patients living with hypertension and diabetes in accessing treatment services. Understanding this is critical to removing barriers and making treatment more accessible. Further integration of treatment for hypertension and diabetes into HIV care is essential to ensuring patient engagement in continuous care.

## Keywords

HIV, hypertension, diabetes, comorbidities, health-seeking behavior

## Background

Sub-Saharan Africa (SSA) is home to more than two-thirds of all HIV infected people worldwide, bearing the greatest burden of disease globally.<sup>1</sup> Ghana had approximately 342,307 people living with HIV in 2019 and a HIV prevalence of 1.7%, 46% of whom are on antiretroviral therapy (ART).<sup>2,3</sup>

As outlined, SSA withstands the worst of communicable diseases (CD) like HIV/AIDS and malaria, but also has an increasing incidence of (NCD) communicable diseases to

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complicate matters.<sup>4</sup> In Ghana, like other countries in SSA, the most prevalent NCDs are cardiovascular disease, cancer, chronic respiratory diseases, diabetes, and sickle cell disease.<sup>5</sup> The World Health Organization (WHO) estimates that NCDs account for 43% of all deaths in Ghana, and are responsible for almost 100,000 premature deaths and 10,500 disability-adjusted life years (DALYs) lost per 100,000 population.<sup>5–7</sup> The number of people with hypertensive heart diseases and diabetes have grown exponentially in the past decade in Ghana.<sup>6,8</sup> The burden of NCDs is expected to increase due to the country's aging population, rapid globalization, unplanned urbanization, and unhealthy lifestyles.<sup>5</sup> NCDs are projected to become the most common cause of death by 2030 in SSA.<sup>9</sup> This double-burden of disease presents the unique challenge of combating communicable and noncommunicable disease comorbidities.

The rise in CD and NCD comorbidities is an emerging public health issue as NCD prevalence rates rise globally. HIV infected adults on ART have a higher prevalence of hypertension (HPT) compared to those who are infected and do not take ART as well as uninfected adults, due to HIV specific risk factors and ART.<sup>10</sup> People with HIV are more likely to have diabetes mellitus (DM) due to the use of some HIV medications.<sup>11,12</sup>

The management of both HIV/AIDS and NCDs like HPT requires strict adherence to evidence based treatment protocols and health services must be involved to lead this. Non-adherence to ARVs is associated with increased morbidity and mortality as well as wasted healthcare resources.<sup>13</sup> Hypertension caused about 7.6 million premature deaths and contributed to 92 million DALYs,<sup>14</sup> with an associated \$2 billion USD direct healthcare cost.<sup>14</sup>

Previous studies have identified fear, stigma, cost of medication and transportation, lack of social support, and medication side effects as barriers for appropriate health-seeking behavior (HSB) in people living with HIV/AIDS (PLWH).<sup>15,16</sup> In adults with HPT and DM, studies have found the cost of medication, waiting times, perception of the disease, transportation, facility deficiencies, and cultural issues as predictors of HSB.<sup>17,18</sup> While research is still limited, money, time and distance to multiple facilities, and multiple medications have been identified as factors for HSB for HIV/AIDS patients with comorbid HPT and/or DM.<sup>19</sup>

Additionally, the attitudes and behaviors of healthcare providers (HCP) can greatly influence health-seeking behavior and adherence to ART as well as improve adherence and quality of life.<sup>20</sup> Friendly and supportive HCPs positively influenced the use of services, but negative attitudes and behaviors deterred client usage of services.<sup>20</sup> Understanding HCPs perceptions is critical to gaining insights into the factors influencing HSB in an urban setting in Ghana in order to develop interventions and policies.

These findings highlight the need to understand the context specific internal and external factors that influence health-seeking behavior (HSB) of HIV patients living with HPT and/or DM.

## Materials and methods

### Study design

This study employed qualitative methods built on evidence-based theories, rooted in comprehensive frameworks, and grounded theory methodology. Rooted in the Health Belief Model (HBM), the Capability, Opportunity, Motivation-Behavior model (COM-B),<sup>21</sup> and Theoretical Domains Framework (TDF),<sup>22</sup> this study used these frameworks to explore both internal and external factors that influence an individual's decision-making process and behavior. When used simultaneously, these models and frameworks complement each other and provide a robust picture of the factors that influence an individual's HSB.

Interview questions for patients were based on the three models and frameworks that have been used successfully in previous studies.<sup>12,23</sup> Using the main tenets from HBM, TDF, and COM-B together, we explored the individual's own thoughts and perceptions, social and emotional influences, and external factors. Questions were rooted in the HBM's cognitive components focusing on perceptual benefits, barriers, susceptibility, and severity; the COM-B model's components of opportunity and motivation to further explore some of the cognitive aspects of health-seeking behaviors; and the TDF's social and environmental domains to identify external influences such as stigma, social support, and facility satisfaction ([Supplemental Appendix 1](#)). TDF builds on the systems recognized in HBM and COM-B to further reveal the fundamental barriers and facilitators of evidence-based behavior change.

Open-ended interview questions were followed by a series of prompts for further probing. Interview questions for HCP ([Supplemental Appendix 2](#)) were adapted from the ongoing ART study; this study was part of a larger project based on ART adherence between Kintampo Health Research Centre and the University of Maastricht. Prior to interviewing, written informed consent was obtained from all participants. Confidentiality of all data was ensured by using non-identifiers on all participant records. All In-depth Interviews (IDIs) were conducted within 30–90 min in a hospital space that ensured the privacy of participants. All patient interviews were in commonly spoken local language (Twi) and translated by the third author into English during transcription while all HCP interviews were in English. The interview tools were pre-tested in Kintampo Municipal hospital among two patients and two HCP who were purposively selected from the ART clinic, respectively, to check for clarity, consistency, and acceptability of the questions.

### Study setting and sample

This study was conducted in the Techiman South Municipality in the Bono East Region of Ghana. HIV prevalence was estimated at 1.50% in the Bono East Region and 2.65% in the Techiman South Municipality.<sup>2</sup> According to the Ghana Statistical Service 2010 Census, the municipal covers 649 square kilometers and has a population of 147,788 people.<sup>24</sup> Two hospitals were selected in the municipality because they had the selected comorbidity cases.

The study was part of a larger project on ART adherence between Kintampo Health Research Centre and the University of Maastricht, which aims to examine the determinants of ARV treatment adherence and how it influences the psychological well-being of people living with HIV in the Bono East Region of Ghana.

### Data collection procedure

Twenty-three participants with HPT or DM/HIV were identified from the database of the ART study. A list was generated from the database for follow up. Due to time and resource constraints, the study targeted to purposively select 15 out of the 23 patients on the list with HIV and/or HPT/DM and being on medication for these conditions. We contacted the participants on the list through phone calls to book an appointment for consent and interview. However, 11 were available for the interviews. The remaining 12 patients had either moved out of the study area or could not be reached via phone. Five HCP were purposively selected from the two hospitals to explore their perceptions of the health-seeking behaviors of patient's comorbid with HPT or DM/HIV. The 16 participants (11 patients and 5 HCP) who were willing to be part of the study received information about the project. Prior to the interview, all participants signed or thumb printed a consent form each, which specified the study's aims, objectives, procedures, duration, confidentiality, voluntariness, benefits/risks, and statements of consent. A copy of the consent form was given to participants. Non-identifiers on all participant records was done to ensure confidentiality of all data.

### Data analysis

QSR Nvivo version 10.0 was used to process the data. The second and third authors transcribed all the audio recordings verbatim. We used thematic analysis to identify patterns in the data.<sup>25</sup> The first and second authors coded the first transcribed data. This was followed by discussions on the individual codes. The different codes were discussed until we reached an agreement. The codes were subsequently grouped and themes generated. The categorized codes were then summarized. The data was triangulated by interviewing both patients and health workers on the health seeking behavior of comorbid patients.<sup>26</sup>

### Ethical clearance

The Kintampo Health Research Centre Institutional Ethics Committee (FWA00011103) granted clearance for the study.

### Results

Firstly, we will report on the demographics of the study participants, secondly, the health-seeking behavior of the comorbid patients, and finally we will discuss the determinants of the health seeking behavior: grouped into internal and external factors influencing the behavior as illustrated in the [Supplementary file 1](#).

#### Demographics of study participants

The overall median age of patients was 44.5 years. Patients' ages ranged from 33 to 85 years. Of the 11 patients interviewed, nine were female and two were male. Six patients had received primary education or less while only five patients had received post-primary education. Six of the patients were employed and five were unemployed. Less than 50% of participants were married at the time of the interviews, while the remaining were unmarried, divorced, or widowed. Of the 11 patients interviewed, six had hypertension, three had diabetes, and two had both in addition to HIV. Of the five HCP's interviewed, three were males and two were females. Healthcare providers' ages ranged from 26 to 59. Of the 16 patients interviews, the majority of participants ( $n = 13$ ) were of the Christian faith and three were from the Muslim faith.

#### Health seeking behavior

Patients reported difficulty in visiting the hospital and covering the cost of their medications (antihypertensive and antidiabetic) at the hospital. While many months' HIV drugs were received at one time, patients typically report to the clinic monthly for their hypertension and diabetes drugs. This difficulty is greater when the clinic has medication shortages: Patients noted that in such cases they received only one or two weeks of drugs.

"Things are always difficult.... sometimes I decide I cannot come because I do not have transport fare..... Sometimes I walk from where I live; even today as I have come here... I am facing financial difficulties now; I am not working now; where do I get money to pay" (Female, 33 years, HIV/HPT, Participant 8).

#### Internal factors

##### Affective factors

*Psychological wellbeing.* Most patients and HCP indicated that having multiple chronic conditions had a negative effect on patients' psychological wellbeing. It was difficult for

patients to accept their comorbid status. The stigma from HIV alone was enough for patients to feel anxious and depressed, with some patients admitting they attempted suicide upon receiving their HIV diagnosis. In the community, HIV was perceived as a hopeless disease that eventually kills. Comorbidities like hypertension and diabetes place an increased burden on patients' psychological wellbeing:

“Ever since these conditions came to my life if I say I feel happy, then I am lying to you. I sometimes lie to my children that I am okay just to make them happy” (Female, 54 years, HIV/HPT, Participant 2).

One participant seems to be accepting of the comorbidity citing that she is incapable of changing her condition.

“As I said it has already occurred and there is nothing I can do to it so the only thing I can do is to keep praying so that they could bring a drug that can take this double trouble/burden from me” (Female, 43 years, HIV/DM, Participant 4).

The majority of patients described hypertension and diabetes to varying degrees, with some suggesting that these comorbidities are more critical than HIV due to their uncertainty and possible suddenness of stroke or death. Diet and exercise are examples of lifestyle changes that are required to effectively combat hypertension and diabetes were seen to increase the perceived severity of the conditions. The possibility of sudden death portrayed hypertension and diabetes as more serious than HIV and was especially frightening to patients:

“The HIV does not worry me like the hypertension. The HIV has been with me for a long time and it has not done anything to me. The hypertension makes my head ache and it kills people within a moment all the time” (Female, 46 years, HIV/HPT, Participant 10).

### **Cognitive factors**

**Patient attitude and motivation.** Most participants held various attitudes about their health and treatment regimen. Many patients found motivation and comfort in the support they had received from other patients and HCP. One HIV-positive HCP cited himself as a model of hope for patients struggling with their conditions. Furthermore, accepting their own status and the chronic nature of their conditions was beneficial for patients and their care-seeking behaviors. Some participants had positive attitude towards their conditions

“...I have acquired the sickness [HIV] and I am not the only one with this condition. Therefore, no matter what I do, nothing

will change. [...] No matter what, it has come to stay, so I do not need to isolate or make my life miserable (Female, 43 years, HIV/DM, Participant 4),

Others could not come to terms with living the comorbidity:

“Sometimes you feel disturbed and start thinking about it, why myself alone, these two conditions” (Female, 37 years, HIV/DM, Participant 7).

While many patients cited these barriers to health seeking and medication adherence, other patients had no complaints about the drugs. One patient described her experiences with health-seeking and medications as quite positive referencing how they have helped her feel healthier. The positive effects of the medication served as a motivating factor for the patient to continue taking the medication:

“I do not have an issue with the burden of the pills because the sickness is different, so you cannot use the same medication for the two conditions' treatment. It has helped me very much in my life; ever since I started taking the drugs it has help” (Female, 43 years, HIV/DM, Participant 4).

**Knowledge and misconceptions.** While some patients understood that hypertension and diabetes were related to diet, there was significantly less knowledge on the two conditions compared to HIV. Misconceptions include hypertension caused by too much or too little blood in the body. Following diagnosis, patients learned about their conditions and treatment from HCPs:

“What they say is that you will die, [...] if you do not take the ART drugs, you can die too and even worsen your condition” (Female, 33 years, HIV/HPT, Participant 1).

Almost all participants stated that they knew or had heard about the importance of taking the antihypertensive, anti-diabetic and ART drugs.

**Counseling.** Counseling by HCP at the ART clinics for HIV, HPT, and DM was highly commended by patients. Not only did it serve as an outlet to express concerns, but it also served as an avenue for support for many patients at the time of initial diagnosis:

“When I came and I was told the first time [HIV], I became frightened and cried a lot. People advised me that it is not anything as serious as I am taking it, so I should take my mind off it” (Female, 51 years, HIV/DM, Participant 6).

Another patient described how counseling helped her to understand her diabetes: “we are told to check our diets, you

cease from eating some types of foods but if you are able to adhere to the counsel, it will help. [...] Since I was told and I followed, it has helped me very well” (Female, 51 years, HIV/DM, Participant 6). Through counseling, patients are able to better understand their conditions and learn to manage the treatment.

One HCP at the ART clinic described the importance of counseling, emphasizing the impact it has on medication adherence:

“to most of them [patients], who goes through counseling, they do comply. [...] A handful of PLWH who do not receive counselling fall prey to quack doctors and quack pastors” (Male, 57 years, HCP2).

The importance of counseling from HCP is critical at the time of diagnosis as well as throughout patient care. Serving as a source of support for patients who have little, it is beneficial in all capacities, especially medication adherence. Patients can experience a desperate unwillingness to accept their diagnoses. This leads to patients seeking opinions from other facilities, only prolonging treatment for potentially fatal conditions. One HCP reported that sometimes when patients finally come for treatment, they cannot walk and must use a wheelchair or are even in a comatose state from dangerously high blood sugar.

### Social factors

**Religion and culture.** Patients and HCP referenced the comfort patients find in religion with God. Patients felt as though God would take care of them and that praying allowed them to forget about their conditions for a moment in which they were able to find peace. One patient noted,

“When I was first diagnosed with these conditions, I became frightened and cried a lot. Nevertheless, people spoke to me and advised me that it is not anything as serious as I am taking it so I should take my mind off it and keep praying because God heals and I can see God has healed me already” (Female, 51 years, HIV/DM, Participant 6).

While religion served as a positive channel for patients to express their concerns and find consolation, other stressors stemmed from the culture. The pressure created by not achieving what was culturally desirable created a greater burden on patient psychological wellbeing. One patient described her experiences as an unemployed, single woman:

“I do not feel happy. [...] I cannot do any work; when I carry anything, my heart begins to beat fast. If I say I am happy, then I am lying to you: this is because it is not good for a woman to be unemployed and unmarried” (Female, 33 years, HIV/HPT, Participant 8).

Other risk factors stemmed from the attitudes around diet and exercise in Ghana. One HCP stated that,

“Here in Africa our food, most of our foods are starchy food. [...] We are not into exercise. [...] Exercise is something you probably out of 100, you get 10 persons. Therefore, exercise culture and our eating habits are bad” (Female, 26 years, HCP 1).

The culture and diet in Ghana create further challenges for patients in adjusting to healthier lifestyles, making it more difficult to manage their conditions.

### External factors

**Food, medication and transportation costs.** Patients and HCP cited numerous financial barriers. Many of the patients are poor and stated that they have difficulty affording transportation to the clinic, their medications, and food. While the antiretroviral is free, patients are having difficulty affording their hypertension and diabetes medications. Patients often require assistance from family members or HCPs to afford these medications. One patient described her financial burden due to the cost of transportation and medications:

“With the HIV, [...] I have been given 6 months drugs so I will only come here in 6 months’ time for the medications, but with the diabetes I have to come here every month. Therefore, the HIV is not threatening to me like the diabetes. It was first that the cost of medications was too many; there were times I pay more than (\$11.8) excluding my transport cost” (Female, 43 years, HIV/DM, Participant 4).

“Ever since it started, I have never had a penny because anytime the sickness comes, is very severe and it requires oxygen. [...] The drugs are also too expensive” (Female, 33 years, HIV/HPT, Participant 1).

Another patient described the challenges she faces in affording the food that HCP recommend she eats: “we are told to eat more fruits, [...] but how can you if you do not work, so we look up to only God and pray for everything” (Female, 54 years, HIV/HPT, Participant 2).

The cost incurred by patients can become especially burdensome when patients travel long distances for their drugs. They cited their HPT and DM as reasons for traveling to get HIV drugs in order not to be seen by someone they may know. As such, their inability to pay for transportation means that they do not get medication for their conditions. The financial challenges faced by patients are extensive. Patients often cannot work due to their age or symptoms, especially from the hypertension and diabetes. One patient noted that work and high blood pressure are not compatible. With no money, it is difficult to afford transportation and

medications. Lastly, little support from family members makes it difficult to find the resources to afford the cost of transportation and medication.

*Healthcare provider perceptions of patients.* All HCPs held positive attitudes about HIV patients with hypertension and diabetes. HCP enjoyed their jobs and working with HIV patients. Interviews revealed that HCP treat patients equally regardless of HIV status. Participants expressed joy in being able to make patients smile and feel better. An HIV positive HCP described his experiences working with HIV patients:

“I like it because I am helping a lot. My presence motivates PLWH [...] because upon initial diagnosis PLWH often think it is the end of their life. However, when they come and see me working here, talking to them, counseling them, giving education of HIV, nutrition, and everything. It helps them a lot” (Male, 59 years, HCP 3).

Ultimately, HCPs enjoy helping patients with their treatments and accepting their diagnoses.

*Hypertension, diabetes and HIV clinic set-up.* Patients cited difficulty in coming to the clinic frequently for their comorbid drugs. Clinic services varied by day, resulting in comorbid patients having to come more frequently for their drugs. Mondays and Wednesdays were designated for hypertension and diabetes. Tuesdays and Thursdays were designated for HIV services. Furthermore, patients only receive drugs to last a set length of time. While coming on separate days to the clinic for different services can be challenging, the clinic attends to multiple conditions in order to reduce the stigma surrounding the clinic. One HCP described how the clinic’s various services have helped to address the HIV related stigma:

“The reason why HIV/AIDS, hypertension, and diabetes are being combined here at that, the building here was built purposely for HIV’s programs and HIV’s care. Then people were stigmatizing the facility. If somebody sees a friend, a colleague coming toward this building, anywhere from the hospital, this individual tags the person as having HIV/AIDS. Therefore, news of this spread all over the communities, and for that matter we decided that we then combined HIV/AIDS, hypertension, diabetes, TB, breast screening or have you into the clinic so that people will not be easily identifying those who are HIV positive, who are diabetes, who are hypertensive, or whatever” (Male, 57 years, HCP 1).

Many participants mentioned long wait times as being a challenge when coming to the clinic for treatment. In order to avoid long waiting times, patients frequently arrived at four or 5a.m. to join the queue. In addition to long waiting times, patients noted that they did not like waiting outside,

but rather preferred to wait inside the building. Waiting outside exposed patients to the unpredictability of the weather and exposed them to people passing by, reducing the confidentiality and anonymity of the clinic clients. With many patients needing to be attended to, waiting times left some patients unsatisfied with the facility and deterred some from even coming at all:

“They start their work at 8 AM so even when you come here around 4 AM, you still have to sit and wait until 8 AM before they start work. [...] They made us to sit outside; they used to let us sit inside. As the cold weather is approaching, we will have to sit here and the wind will blow on us” (Female, 37 years, HIV/HPT, Participant 7).

Another patient described her experience waiting outside at the clinic:

“There was a time we were sitting outside here waiting to be attended to and a woman came here and asked what they do here. One woman was about to talk and I hit her mouth with the back of my hand and sacked her from here” (Female, 46 years, HIV/HPT, Participant 10). She expressed that she would prefer if the clinic would allow them to wait inside the building, rather than outside.

One described the clinic’s long waiting times and the impact on patients, especially those who have to travel far and are also missing work. This results in patients not coming in at all to their appointments or medication:

“Therefore, when a hypertensive patient is coming for review, they come here as early as 4 a.m., 5 a.m., to come and join the queue. In addition, someone can be in the queue from 5 a.m. to about 1 p.m. before a doctor has seen the patient, go for drugs, and go to the various rooms. Therefore, the queue that they also join, some of them they come, they do not, because they have work that they are supposed to go and they cannot come and spend the whole day in the facility. Therefore, what they decide to do, they will not even come at all” (Male, 32 years, HCP 5).

Patients had mixed feelings about health care providers. While many noted that HCP treated them very well and provided great support, others felt that some workers were not respectful and made them feel bad. Patients noted that HCP sometimes called other patients that were after them in the queue before them because they knew each other. Two patients recalled their experiences with healthcare providers:

“When I came here and they diagnosed the conditions [...] I was told I should never visit this hospital again, so for the past 6-7 years I have never visited this hospital” (Female, 85 years, HIV/HPT, Participant 3).

Another said,

“When you ask some of the nurses something, the way the person will respond to you makes you feel bad. You will begin to think about whether because you have this condition [HIV] you are not regarded as an important person. However, some of the nurses are good” (Female, 37 years, HIV/HPT, Participant 7).

Several patients held concerns or noted actual instances of HCP breaking their confidentiality. While many patients trusted HCP, others experienced significant breaches in their confidentiality, deterring patients from seeking treatment:

“My kid sister spoke to someone here that anytime I come here for my drugs, the person should keep an eye on me. [...] He has been sending my information to my sisters and they have been using it to insult me” (Female, 33 years, HIV/HPT, Participant 1).

**Alternate sources of care.** Many patients mentioned the use of traditional herbalists and pastors who entice patients and promise a cure for their conditions. While HCPs tell patients they can only manage their conditions, herbalists promise a cure for their HIV, hypertension, and diabetes. They claim they have one medication that can cure all conditions without any diagnosis; meanwhile orthodox treatments are specific medications for certain diseases. One HCP states,

“There are many adverts about people who claim a cure for those conditions. So they [patients] would rather leave these drugs which they are aware cannot cure them, go to those herbal medications, and by the time they return, the condition has worsened” (Male, 32, HCP 5).

Only exacerbating the financial barriers patients’ experience, herbalists charge as high as 3500 GH cedis (\$597) for treatment. One HCP noted that patients with multiple conditions are more easily convinced because of their plight. Moreover, newly diagnosed patients in particular are especially vulnerable and usually uneducated about the conditions, thus easily lured in. The traditional herbalists and pastors prey on this vulnerability of patients who are told they can only manage their conditions and are especially desperate to be cured.

While some patients used traditional medicine before going to the clinic, others left the clinic and their drug regimen for traditional medicine. Two patients described their experiences going to the traditional herbalists prior to seeking treatment at the clinic:

“I am (clan member) so we feel someone can juju you. [...] I was thinking that somebody [...] might have juju [voodoo] me so I was trying the traditional, this thing, and it was not working

and I tried those herbal ones, and they did not work until I came to the hospital where they detected that it was hypertension” (Female, 59 years, HIV/HPT, Participant 5).

Another patient stated,

“I was taking the herbal medication, I was not seeing any changes and so I stopped and went to the hospital. When I was told I have this condition, I stopped taking all the herbal medications and started taking the medications I was given at the hospital” (Female, 37 years, HIV/DM, Participant 7).

The fact that patients go to herbalists and pastors as their first point of call, they delay seeking the appropriate treatment.

**Food and diet.** Both patients and HCP cited difficulties in affording the proper foods to maintain the healthy diet necessary for patients with HIV, hypertension, and diabetes. One patient described her challenges in affording food due to increased appetite when she takes her medications:

“I eat very much when I take the ART drug and inject the syringe (diabetes medication), and when I become hungry for a very long time I feel very warm like I am sick. It is like a double of my usual hunger and sometimes I do not have money to buy food” (Female, 43 years, HIV/DM, Participant 4).

One HCP noted the difficulty for comorbid patients in finding a balanced diet:

“If the patient has HIV, you need the patient to eat a lot, get a well-balanced diet so that their immune system will boost up. However, [...] if the patient has hypertension you know taking meat is problem because of the fats. Salt is a problem. [...] So that becomes a problem for the person, [...] it is difficult managing the HIV” (Male, 32 years, HCP 5).

## Discussion

This study explored the factors influencing the health-seeking behaviors of HIV patients with hypertension and/or diabetes comorbidities. The results from the study highlight unique internal and external challenges faced by HIV patients with comorbid conditions in managing treatment and care. Challenges with the health facility, medications, and psychological wellbeing were found to be the greatest influences on comorbid patients’ HSB.

### Affective influences

Participant interviews revealed the challenges and impact on patient psychological wellbeing from having HIV, hypertension, and/or diabetes. Our finding that patients with



comorbid conditions deemed managing multiple conditions as difficult and burdensome corresponds to a similar study that sought to explore HSB of older adults with comorbidities.<sup>19</sup> In addition to the psychological toll that these conditions have on patients, many NCDs and mental disorders share common risk factors including physical inactivity, and unhealthy diet.<sup>23,27</sup> Cardiovascular diseases and diabetes frequently co-occur with mental disorders including depression, anxiety, and schizophrenia. Therefore, while patients deal with greater psychological burden, there are in fact biological connections as well. For HIV patients, this has resulted in frequent feelings of depression, loneliness, and hopelessness for the future. The stigma and lack of support for PLWH have further exacerbated these feelings, deterring patients from seeking care and adhering to their medications.<sup>28,29</sup> Counseling helped patients to accept their diagnoses and boost their confidence. A previous study reported similar findings that counseling was beneficial in helping patients' mental wellbeing and self-efficacy in managing their conditions and medication regimen.<sup>30</sup>

Health care provider perceptions of HIV patients with hypertension and diabetes were all positive and encouraging. However, patient testimonies did not necessarily confirm these positive attitudes. Despite patients citing HCP as a source of support for them and were reasons for patients' continual visits to the health facility, some identified negative attitudes. These findings are consistent with previous studies of HCP in Ghana.<sup>20</sup> However, the discordant responses may reflect social desirability of some responses. Comparing patient and HCP responses helped to triangulate the data.

### *Cognitive influences*

Findings from our study indicate a low level of knowledge on hypertension and diabetes. The misconceptions about the conditions resulted in delays to treatment and medication non-adherence. Patients did not understand the symptoms and sometimes sought alternative care which delayed care as reported in a previous study.<sup>31</sup> Others lacked an understanding of the disease and medication in general resulting in a failure to take the drugs. These findings concur with previous studies on the important role of health literacy and clinical outcomes.<sup>32</sup> Strong knowledge about the disease and high levels of health literacy were found to be strong predictors of achieving optimal adherence.<sup>31,33</sup> Health literacy helps to combat the denial that many patients may initially go through when learning of their status, which is a significant barrier for linkage to care.<sup>31</sup> By delaying treatment and medications, the patient allows the conditions to worsen.

### *External influences*

Participant interviews revealed significant challenges related to costs. Many patients are poor and unable to afford

transportation, their medication, and a healthy diet. The cost of transportation resulted in patients having to ask for money from family or even walking to the clinic, deterring patients from coming for treatment. Furthermore, while the antiretroviral drugs are free, patients incur a cost from the hypertension and diabetes medications. Managing drugs for multiple conditions was a challenge and has been previously reported as a barrier to optimal adherence.<sup>34</sup> Moreover, because the drugs for hypertension and diabetes are distributed on a monthly basis, patients are expected to come for regular check-ups or the cost of medications may be too high to afford if a patient needs refills for more than a month. This regular need to travel to the clinic means greater transportation costs. The additional costs from dietary changes create further challenges for patients in managing their food and medication intake. Similar findings have been reported previously.<sup>17,31,35</sup> While patients understood the doctor's recommendations to eat healthier and avoid certain foods, it was not always feasible given their situations.

Long waiting times, overcrowding at the clinic, and general infrastructure were found to be barriers for patients and consistent with previous studies.<sup>17,19,31</sup> However, the facilities had begun to integrate services for NCD care to an extent, which reduced the stigma surrounding the physical building.

Traditional medicine plays a prominent role in the health system in Ghana. Patients used herbalists and pastors at symptom onset, which often prolonged the decision to seek treatment at the clinic. With these traditional healers, offering fake cures for all diseases, unsuspecting patients may spend money on these fake cures rather than take the free antiretroviral from the clinic. Traditional healers have been found to play similar roles in other studies.<sup>20,31</sup>

### *Social influences*

Stigma and lack of support were prominent barriers to compliance and care-seeking behaviors. Exacerbated by fear and a lack of confidentiality, patients were discouraged from seeking treatment because they were afraid of others learning of their health status. The fear of seeing someone they knew at the health facility was enough to deter patients from treatment. Patients with hypertension and diabetes tend to be older and unlike younger individuals, they are more likely to have lost ties with their friends or be widowed.<sup>19</sup> This results in a decreased support network creating further challenges for these patients.

Religion was found to play a significant role in the psychological wellbeing of patients, serving as a positive avenue for patients to find comfort and acceptance of their diagnoses. Furthermore, patients cited their diagnoses, as God's will, claiming that God would not give them anything they could not handle. Serving as a coping strategy, religion helped patients move past the initial grief or denial and



focus on seeking care and treatment, which has been found in previous studies as well.<sup>36</sup>

Lastly, the general culture in Ghana naturally has a pervasive influence throughout all aspects in a patient's life. Diet is a challenge, with many foods being starchy and high in sodium. In many parts of West Africa, including Ghana, Maggi and Knorr bouillon cubes are used to enhance the flavors of food. While concerns have been raised that the major active ingredients are salt and MSG, they continue to be used. Studies have shown that while 71% of people are aware of the health problems associated with these cubes, the taste of them outweighs the consequences.<sup>37</sup> Moreover, NCDs are also often perceived as afflictions by supernatural powers in traditional societies and by healers, highlighting the need for strong educational campaigns.<sup>33</sup> In addition to the use of traditional medicine and dietary concerns for patients, challenges with cultural norms were apparent. Our study found that for female patients, the difficulty of not working and not having a husband in a culture where it is idealized brought on further stresses. Patients being older and more likely to be widowed, patients being divorced due to the stigma of HIV, and symptoms making them unable to work, perpetuated this. This is consistent with the norm that marriage is very important for a woman's status in Ghana, with recognition and respect being linked to the custom.<sup>38</sup> This finding highlights the further impact on a patient's psychological wellbeing. The role of religion and culture in a patient's care-seeking behaviors are deeply connected and rooted in the patient's own beliefs and perceptions.

### Limitations

Recall bias regarding past experiences may have obscured participant responses. Response bias due to the sensitive topic of HIV/AIDS, hypertension, and diabetes may have also resulted in less detailed responses. Moreover, this study interviewed patients mainly female who were currently engaged in care. This however mimics the gender distribution of HIV patients in care as reported by the Ghana AIDS Commission.<sup>2</sup> Patients who are males or do not come to the hospital may have different opinions from those present in this paper. In addition, the descriptive approach of the study limits its ability to draw general conclusion about the HSB of the population.

### Conclusion

Participants from this study raised several unique internal and external challenges when seeking care for HIV, hypertension, and, diabetes including difficulty-managing appointments that are more frequent, increased pill burden, and an overall burden on psychological wellbeing. We suggest an overall greater integration of chronic disease care with HIV treatment in health facilities given the rise in NCDs and the aging

population in Ghana. Primary care services that deals with multimorbidity is underdeveloped in Ghana and requires further exploration. Furthermore, financial and nutritional support would be beneficial for patients. The intervention-mapping approach (Bartholomew, Parcel, & Kok, 1998) should be used to develop, implement, and evaluate new interventions to address the barriers to seeking care for patients living with HIV and other comorbidities.

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### Author contribution

JM, MAA and KPA conceptualized the study, JM and AW collected data. JM and MAA led the data analysis and equally contributed to the write up of the first draft. AW, KPA critically reviewed the paper. JM, MAA, AW and KPA all read through and approved the final draft for submission.

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### Supplemental Material

Supplemental material for this article is available online.

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