Research Article

Concurrent Use of Herbal and Orthodoxy Medicines among Residents of Tamale, Northern Ghana, Who Patronize Hospitals and Herbal Clinics

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Despite the development of more researched and formulated orthodox medicines, herbal medicines continue to be well patronized for persons across the world with some patrons concurrently using both forms, oblivious of the unwanted effects that may occur. Using a multistage sampling procedure, a semistructured questionnaire was used to collect data in April 2016 from 240 informants from three selected hospitals and three herbal clinics in Tamale, a city in northern Ghana. Using Statistical Package for the Social Sciences, binary logistic regression was used to determine sociodemographic predictors of concurrent use of herbal and orthodox medicines. Orthodox medicines were the drug of choice for 54.2% and 49.2% of patrons of hospitals and herbal clinics, respectively. Also, 67.5% of herbal clinic patrons used orthodox medicines, while 25.0% of hospital attendees used herbal medications prior to their visit to the health facilities. Up to 17.9% of respondents concurrently used herbal and orthodox medicines for their prevailing ailment with age, less than 30 years being the only predictor of this habit (p = 0.015; 95% CI, 1.183–4.793; cOR = 2.4). All health professionals including those in herbal clinics should therefore be interested in the drug history of their clients.

1. Background to the Study

Diseases have afflicted man for ages but humans always make effort to remedy the situation in order to regain a life disturbed by these ailments. The earliest form of healing substances had been herbal medicines, but with the advent of civilization which had led to better scientific understanding of diseases and medications, orthodox medicines have become the main and well recognized products for the management of diseases in modern health systems [1, 2]. According to Mahomoodally (2013), herbal medicines (HM) include herbs, herbal materials, herbal preparations, and finished products that contain parts of plants or other plant materials as active ingredients [3]. Orthodoxy medicines (OM) or drugs on the other hand are chemically pure substances which when administered into the body produce pharmacological effects which may consequently lead to alleviation of the disease or help in the diagnosis or prevention of the disorder [4]. Many current orthodox drugs have their origin from herbal medicines, but the main difference between the two is that the herbal drugs contain a large number of compounds, rather than a single pharmacologically active substance; hence components of both herbal and orthodox medicines may act on one another to moderate, oppose, or enhance an effect [5, 6]. It would have been expected that orthodox medicine should be an overwhelming favoured choice of treatment of diseases since it is a more refined and scientifically studied remedy. Herbal medicines however also continue to be well patronized in both developing and developed countries of the world. According to the World Health Organization (2002), despite the introduction of orthodox medicine by the Europeans who colonized Africa, up to 80% of Africans still...
use traditional medicines, especially herbal medicine for their primary healthcare needs [7]. Patronage of herbal products has also seen an increase even in developed countries such that approximately 20% of people in the United States of America use herbal products for various health reasons [8]. Despite the high patronage of herbal medicines all over the world, patients do not inform their doctors about their use of orthodox medicine concurrently with these herbal products and also most doctors do not also enquire from the patients about the use of herbal products during consultation [9–12]. Concurrent use of herbal and orthodox medicines according to Neustadt (2006) causes interactions between these two forms of medicines which can lead to undesirable pharmacokinetic and pharmacodynamic effects [13]. For example, when a herbal preparation containing St. John’s Wort (Hypericum perforatum) is administered together with digoxin, there is always a significant decrease in maximum serum concentration of digoxin and hence its efficacy because the plant product increases digoxin metabolism. Again, the anticoagulant effect of warfarin is enhanced when taken together with ginkgo (Ginkgo biloba), thereby increasing the possibility of excessive bleeding [1, 13]. Issues of adverse effects and drug-herb interactions should be of important public health concerns because of their overall effect on human health and safety. In Ghana, efforts are being made to integrate herbal medicines into the orthodox health facilities to provide alternative system for individuals who for some reasons would want to access alternative medicines for their healthcare needs. The operationalization of the Traditional Medicine Practice Council (TMPC) in 2010 following the passing of the Traditional medicine practice Act, Act 575 in 2000, and the subsequent commencement of training of medical herbalists by Kwame Nkrumah University of Science and Technology in Ghana in 2001 had accelerated the integration of herbal medicine into the Ghanaian orthodox health system [14]. Beside the herbal clinics in some teaching and regional hospitals, there are privately owned herbal clinics that provide alternative healthcare systems to Ghanaians. These herbal clinics originate from Ghanaian tribes and are used for both local and international medicinal purposes. In 2000, the Ghana Statistical Service (GSS) conducted a census has a total population of 223,252 [19]. The hospitals surveyed were the Tamale Teaching Hospital, Tamale West Hospital, and Tamale Central hospital, while the herbal clinics were Alive Legacy Herbal Clinic, Ameen Scientific Herbal clinic, and Unique Naturalist Herbal Clinic.

2.2. Study Tool. The study was conducted in April 2016 using a semi-structured questionnaire. The questionnaire was pretested among 20 clients, which ensured the correction of ambiguous and inconsistent questions before it was administered for the actual data collection. The authors reviewed the questionnaire to ensure face validity of the data collecting tool. Though most of the final questionnaires were self-administered, a few were administered employing the face-to-face interview questionnaire administration method with respondents and retrieved immediately after completing the questions. The face-to-face interview questionnaire was used for respondents who were not literate enough to complete the questionnaire on their own.

2.3. Study Sample Size Determination. Cochran’s (1977) formula was used to estimate a desirable sample size. The sample size was calculated as follows: \( n = \frac{z^2(1 - p)}{d^2} \), where \( n \) is the sample size, \( z \) is the standard normal distribution taken as 1.96, \( p \) is the estimated prevalence rate of herbal users being 80% (0.80), and \( d \) is the margin of error equal to 0.05. \( n = 1.96^2(1 - 0.8)0.8/0.05^2 \); therefore, the minimum sample size for this study was 245.9 = 246.

2.4. Sampling Procedure. The sampling method that was employed in this study was the multistage sampling procedure. The first stage consisted of two clusters, named A and B. Cluster A represented those who attend herbal clinics and cluster B represented those who attend hospitals. Respondents in A were all outpatients, since A study sites do not have inpatients. Respondents in B were outpatients and inpatients, while respondents in A were all outpatients, since A study sites do not have inpatients services. In the second stage, a convenient sampling method was applied with the numbers for each facility proportioned based on the daily attendance records. The sample was divided among clusters A and B in a ratio of 1:1.

2.5. Statistical Analysis. The data collected was grouped for editing and keyed into Microsoft Excel (2013 version). Data was analyzed using Statistical Package for the Social Sciences (SPSS), version 20 (SPSS Inc, IBM, Chicago, IL, USA). Association between variables was determined using binary logistic regression. Statistical significance was assumed at \( p < 0.05 \) at a confidence interval of 95%.

3. Results

3.1. Sociodemographic Profile of Respondents. Table 1 shows the sociodemographic characteristics of respondents in this study. The majority were as follows: females, 127 (52.9%), followers of the Islamic religion, 154 (64.2%), those who grew up in rural areas of Ghana, 122 (50.8%), and persons in the...
Table 1: Sociodemographic characteristics of respondents.

| Variable                      | Subgroup      | Frequency | Percentage |
|-------------------------------|---------------|-----------|------------|
| Sex                           | Female        | 127       | 52.9       |
|                               | Male          | 111       | 46.3       |
| Religion                      | Christianity  | 80        | 33.3       |
|                               | Islam         | 154       | 64.2       |
|                               | Traditionalist| 3         | 1.3        |
| Age                           | <21           | 14        | 5.8        |
|                               | 21–30         | 104       | 43.3       |
|                               | 31–40         | 42        | 17.5       |
|                               | 41–50         | 33        | 13.8       |
|                               | 51–60         | 21        | 8.8        |
|                               | >60           | 25        | 10.4       |
| Marital status                | Single        | 91        | 37.9       |
|                               | Currently married | 111     | 46.3       |
|                               | Ever married  | 30        | 12.5       |
| Educational status            | None          | 74        | 30.8       |
|                               | Basic         | 25        | 10.4       |
|                               | Secondary/technical | 52     | 21.7       |
|                               | Tertiary      | 73        | 30.4       |
| Location of growing up        | Rural         | 117       | 48.8       |
|                               | Urban         | 122       | 50.8       |
| Employment status             | Unemployed    | 30        | 12.5       |
|                               | Students      | 45        | 18.8       |
|                               | Housewife     | 24        | 10.0       |
|                               | Private sector | 20       | 8.3        |
|                               | Self-employed | 89        | 37.1       |
|                               | Public sector | 28        | 11.7       |
|                               | Retiree       | 2         | 0.8        |
| Type of accommodation currently occupied* | Single room in compound house | 132   | 55.0      |
|                               | Chamber and hall in compound house | 65  | 27.1     |
|                               | Self-contained apartment | 36   | 15.0     |
|                               | Mansion       | 4         | 1.7        |

*Used as proxy to measure income level. Low income earners occupied single rooms and chamber and hall apartments. Those in self-contained apartments and mansions were middle to high income earners.

3.2. Reasons for Concurrent Usage of Herbal and Orthodox Medicines. The level of concurrent usage of herbal medicines and orthodox medicines and the reasons for this practice are as shown in Table 2. For hospital participants, prior to the visit, the minority, 30 (25.0%), used herbal medicines for their current sickness, while the majority of herbal clinic patrons, 81 (67.5%), used orthodox medicine before visiting the herbal clinic. For all the participants, only 43 (17.9%) were concurrently using both herbal and orthodox medicines. The orthodox doctors or herbal practitioners did not bother to ask the majority of these participants, 27 (62.8%), if they were concurrently using both orthodox and herbal medicines. For those concurrently using both orthodox and herbal medicines, the majority, 25 (58.1%), do not intend to stop that practice, with a further 11 (25.8) not sure of stopping or continuing. The top two reasons for concurrent use of herbal and orthodox medicines were the following: both medicine types work together for the management of the condition, 10 (25.0%), and the combination of both forms of medicines was more effective in treating the prevailing disease condition, 9 (23.1%).

3.3. Reasons for Participants’ First Choice of Medicines When Sick. The majority of hospital attendees, 65 (54.2%), and 59 of the herbal clinic attendees (49.2%) would first opt for orthodox medications when sick. The top three reasons why hospital attendees would first opt for orthodox medicines were the following: the medicines being more effective (27.9%), better studied, and approved (22.1%) and clearer dosage (14.7%). For herbal clinic attendees, their top three
Table 2: Concurrent use of both herbal and orthodox medicines.

| Variable                                                                 | Subgroup   | Frequency | Percentage |
|--------------------------------------------------------------------------|------------|-----------|------------|
| Have you ever used herbal medicine (HM) for current sickness before coming to the hospital? \( (n = 120) \) | Yes        | 30        | 25.0       |
|                                                                          | No         | 86        | 71.7       |
| Have you ever used orthodox medicine (OM) for current sickness before coming to the herbal clinic? \( (n = 120) \) | Yes        | 81        | 67.5       |
|                                                                          | No         | 37        | 30.8       |
| Are you concurrently using HM and OM for current ailment?                | Yes        | 43        | 17.9       |
|                                                                          | No         | 187       | 77.9       |
| Did orthodox doctor or herbal doctor ask you of current usage of HM and OM? \( (n = 43) \) | Yes        | 12        | 27.9       |
|                                                                          | No         | 27        | 62.8       |
| Do you intend stopping concurrent use of HM and OM?                      | Yes        | 7         | 16.3       |
|                                                                          | No         | 25        | 58.1       |
|                                                                          | Not sure   | 11        | 25.6       |
| What are the reasons for concurrent use of HM and OM? \( (n = 39) \)     | Both work together to manage my condition | 10 | 25.6 |
|                                                                          | Make me more comfortable about managing my condition | 2 | 5.1 |
|                                                                          | More effective in treating diseases | 9 | 23.1 |
|                                                                          | Others     | 4         | 10.3       |
|                                                                          | Quicken recovery | 7 | 17.9 |
|                                                                          | Treatment cost is lower | 7 | 17.9 |

Reasons were as follows: easy accessibility of orthodox medicines (18.5%), faster curing (15.4%), and clearer dosage (13.8%). The minority of both hospital and herbal clinic attendees, 42 (35.0%), would opt for herbal medicines as the first choice of medication when unwell. The top three reasons why patrons of hospitals would first opt for herbal medicines when sick were as follows: they were more effective (28.8%), they cure faster (15.2%), and they bring complete cure (10.6%). For the herbal clinic attendees, herbal medicines being more effective (22.1%), having no or lesser side effects (13.2%), curing completely (13.2%), and curing faster (13.2%) were their main reasons for choosing herbal medicines over orthodox medicines. Table 3 shows the type of medications respondents would first opt for whenever they fall sick and the reasons for their choices.

Nine variables describing the sociodemographic characteristics of the respondents, namely, sex, age, religion, location of stay when growing up, marital status, educational level, employment status, income level, and the type of health facility, whether it was an orthodox hospital or a herbal clinic, were analyzed against concurrent use of herbal and orthodox medicines using binary logistic regression (Table 4). Age of the respondents was the only factor that was significantly associated with the concurrent use of herbs and orthodox medicines \( (p = 0.015) \) with persons less than 30 years old almost 2.4 times more likely to co-use the two types of medicines (OR, 2.381; 95% CI, 1.183–4.793). Although more persons who sought healthcare services from hospitals concurrently used both herbal and orthodox medicines more than those at herbal clinics (20.5% versus 16.9%), the difference was not statistically significant.

4. Discussion

Technological advancement had led to better understanding of diseases which had led to development of pure chemicals which have been used to formulate orthodox medicines mostly used in modern health facilities across the world. It would have been expected that crude natural products or alternative medicines would see a decline in usage, but studies have shown a rather increased usage across the world [20–23]. Despite the increasing patronage of herbal products across the world, this study found that the majority was of both hospital clients (54.2%), while most (49.2%) of herbal clinic attendees opted for orthodox medicines as their first choice of medication when unwell. A study in communities in Orlu Local Government Area in the Imo state and Abuja both in Nigeria found that 70.4% and 86.3%, respectively, opted first for orthodox medicines [17, 18]. With increased availability of orthodox medicines and the increasing level of interest in herbal medicines, there is a tendency for both forms of drugs, being concurrently used or one form is used prior to the use of the other one. This study found that two-thirds of patients attending herbal clinics used orthodox medicines prior to their visit to the facilities, while only a quarter of hospital attendees used herbal medicines preceding their visits. What could have accounted for the high level of orthodox medication among the herbal clinic attendees and the lower level of herbal product usage by the hospital attendees is that orthodox medicines are more accessible in a city as Tamale, where over-the-counter medicine sellers and pharmacies are within walking distance of homes unlike the herbal shops. Accessibility to orthodox medicines was the most cited...
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| Table 3: Participants’ first choice of medicines when sick and the reasons for the choices. |
|---------------------------------------------------------------|
| **Variable** | **Subgroups** | **Hospital attendee** | **Herbal clinic attendee** |
| | | **Frequency** | **Percentage** | **Frequency** | **Percentage** |
| First medication choice when sick | Orthodox | 65 | 54.2 | 59 | 49.2 |
| | Herbal | 42 | 35.0 | 42 | 35.0 |
| | Uncertain | 13 | 10.8 | 19 | 15.8 |
| | Accessible | 5 | 7.4 | 12 | 18.5 |
| | Clear dosage | 10 | 14.7 | 9 | 13.8 |
| | Well studied and approved | 15 | 22.1 | 8 | 12.3 |
| | More effective | 19 | 27.9 | 4 | 6.2 |
| | Condition requires medical care | 4 | 5.9 | NA | NA |
| | Safer | 7 | 10.3 | 6 | 9.2 |
| | More confidence in OM | 3 | 4.4 | NA | NA |
| | Recommended | 2 | 2.9 | NA | NA |
| | Others | 3 | 4.4 | 5 | 7.7 |
| | Cures faster | NA | NA | 10 | 15.4 |
| | Easy and convenient | NA | NA | 3 | 4.6 |
| | Personal preference | NA | NA | 2 | 3.1 |
| | Prepared hygienically | NA | NA | 4 | 6.2 |
| | Variety of forms | NA | NA | 2 | 3.1 |
| | Rain | 4 | 6.1 | 3 | 4.4 |
| | Affordability | 6 | 9.1 | 7 | 10.3 |
| | Heritage | 6 | 9.1 | NA | NA |
| | More effective | 19 | 28.8 | 15 | 22.1 |
| | No or lesser side effects | 6 | 9.1 | 9 | 13.2 |
| | OM is unable to manage all diseases | 2 | 3.0 | | |
| | Cures completely | 7 | 10.6 | 9 | 13.2 |
| | Cures faster | 10 | 15.2 | 9 | 13.2 |
| | Natural | 2 | 3.0 | 5 | 7.4 |
| | Less complicated | NA | NA | 2 | 2.9 |
| | Personally like herbal medicines | NA | NA | 4 | 5.9 |
| | Others | 4 | 6.1 | 5 | 7.4 |

NB. n Herb = respondents from the herbal clinics, n hosp. = respondents from the hospitals, and NA = not applicable.

原因由替代医学的临床支持者选择这种治疗方法作为第一选择。虽然不清楚这些临床的替代医学诊所的临床人员是基于医生的处方或自我给药，以及即使他们根据使用正确的剂量方案，他们决定寻求治疗替代医学诊所的理由，可能部分由于他们的替代医学诊所的偏好而缺乏对替代医学的偏好。这种主张是支持的结果，这项研究发现，同时使用替代医学和传统医学的参与者的比例较低，可能是因为他们没有考虑到同时使用这两种形式的药物的人可能已经去看了替代医学诊所，但他们更倾向于寻求传统医学的治疗。这种可能的原因是参与者给的响应可能是因为他们同时使用这两种形式的药物。对更多的情况，我们对参与者问他们是否曾经同时使用过替代医学和传统医学。这项研究中有超过一半的参与者同时使用这两种形式的药物，没有打算停止使用。
practice and almost two-thirds of their physicians or herbal practitioners not asking them of their concurrent use of these two types of medicines gives some cause to worry. Residents in Tamale who seek healthcare services either in the hospitals or in the herbal clinics are therefore invariably exposed to greater chances of suffering the negative effects of drug-herb interactions. The fact that most respondents also stated that concurrent use of herbal and orthodox medicines is better and a more effective way of treating their conditions bring to the fore the need for greater education to lessen the consequences of drug-herb interactions. Several studies in Nigeria and Norway found an association between concurrent use of herbal and orthodox medicines and several sociodemographic characteristics including age, sex, level of education, and income level [15–17]. This study however found age of respondents as the only factor associated with the concurrent use of herbal and orthodox medicines with individuals younger than 30 almost 2.4 times more likely to combine the two forms of drugs than those older than 30 years. This is contrary to studies by Djuv et al., (2013), Duru et al., (2016), and Githinji (2016) who found that concurrent usage of herbal and orthodox medicines increases with age [16, 17, 24]. The reason for the differences based on age could be that persons younger than 30 years in this study were more reluctant to seek healthcare services when sick, would self-medicate with all forms of drugs, and would only visit healthcare facilities when the situations become unbearable. A study in Brazil also showed that persons younger than 30 years significantly self-medicate [25]. The concurrent use of herbal and orthodox medicines by persons who attend hospitals and other orthodox health facilities is well documented [15–18] but not much can be found about the situation for those who attend herbal clinics. A study in the Githunguri Division of Kiambu County in Kenya among patrons of herbal clinics also showed a high level (42.5%) of orthodox medicines, a number higher than the 20.5% reported in this study [24]. The variation in the result (42.5% versus 20.5%) could be attributed to the difference in location since the Githunguri division is a rural area, while Tamale is a city. Access to orthodox medicines is more controlled in cities than rural areas of Ghana where drug peddlers move around to illegally dispense orthodox medicines; hence rural

| Variable | Subgroup | Have you ever used herbal and orthodox medicines concurrently? | % of concurrent users of HM and OM | p value | Crude odd ratio (95% CI) |
|----------|----------|---------------------------------------------------------------|-----------------------------------|---------|------------------------|
|          |          | Yes | No | Total number |                                  |         |                        |
| Sex      | Female   | 23  | 98 | 121          | 19.0                             | 0.925   | 1.033 (0.531–2.008)    |
|          | Male     | 20  | 88 | 108          | 18.5                             |         |                        |
|          | Ref      |     |     |              |                                  |         |                        |
| Age      | <30      | 29  | 87 | 116          | 25.0                             | 0.015*  | 2.381 (1.183–4.793)    |
|          | >30      | 14  | 100| 114          | 12.3                             |         |                        |
|          | Ref      |     |     |              |                                  |         |                        |
| Religion | Christianity | 13  | 67 | 80           | 16.3                             | 0.46    | 0.763 (0.373–1.563)    |
|          | Islam    | 29  | 116| 145          | 20.0                             |         |                        |
|          | Ref      |     |     |              |                                  |         |                        |
| Location | Urban    | 21  | 96 | 117          | 17.9                             | 0.768   | 1.105 (0.569–2.145)    |
|          | Rural    | 22  | 91 | 113          | 19.5                             |         |                        |
|          | Ref      |     |     |              |                                  |         |                        |
| Marital status | Single | 20  | 70 | 90           | 22.2                             | 0.608   | 0.833 (0.415–1.672)    |
|          | Currently married | 20  | 84 | 104          | 19.2                             | 0.082   | 0.259 (0.057–1.185)    |
|          | Ever been married | 2   | 27 | 29           | 6.9                              |         |                        |
|          | Ref      |     |     |              |                                  |         |                        |
| Educational status | No formal education | 8  | 61 | 69           | 11.6                             | 0.390   | 0.656 (0250–1.718)    |
|          | Basic | 3   | 21 | 24           | 12.5                             | 0.628   | 0.714 (0.183–2.781)    |
|          | Secondary | 12  | 38 | 50           | 24.0                             | 0.318   | 1.579 (0.644–3.374)    |
|          | Tertiary Ref | 12  | 60 | 72           | 16.7                             |         |                        |
| Employment status | Unemployed Ref | 23  | 76 | 99           | 23.2                             | 0.373   | 0.718 (0.347–1487)    |
|          | Self-employed | 15  | 69 | 84           | 17.9                             | 0.086   | 0.403 (0.143–1.139)    |
|          | Employed | 5   | 41 | 46           | 10.9                             | 0.839   | 1.093 (0.464–2.576)    |
| Income status | Low income Ref | 35  | 153| 185          | 18.6                             |         |                        |
|          | Middle to high income | 8  | 32 | 40           | 20.0                             | 0.486   | 0.790 (0.406–1.535)    |
| Place of seeking health | Hospital Ref | 23  | 89 | 112          | 20.5                             |         |                        |
|          | Herbal clinic | 20  | 98 | 118          | 16.9                             |         |                        |

Ref: reference variable, * statistically significant, and 'Unemployed, students, housewives, and retirees were grouped as unemployed, while private and public sector workers were considered as employed.
dwellers easily acquire these medicines which they sometimes concurrently take with the herbal preparations [26]. Millions of people across the world would continue to depend on herbal medicines for the management of their health conditions [27] so the patronage of the increasing number of herbal clinics in Ghana would continue. With this study showing that the place of seeking healthcare services did not have any association with concurrent use of HM and OM, it is important that besides orthodox healthcare practitioners, herbal medicine practitioners should also be sensitized to be interested in the drug history of their clientele and then educate them on the dangers of taking these forms of medications together. Although, this is possibly the first study in Ghana which assessed the concurrent use of OM and HM among patrons of orthodox medical practice centres and herbal clinics, several limitations could affect the adequacy and generalized interpretation of the results of this study. Firstly, the use of self-administered questionnaire in some cases rather than interviews for all makes verification of the answers provided by the respondents difficult. Again, some respondents could neither read nor write which requires a translation into a language the respondents understand. Errors of misinterpretation and recording of responses could also have affected the results. However, the results from this study should serve as a starting point for a nationwide study on the use of concurrent use of HM and OM among patrons of herbal clinics and how significant the level of this habit is when compared to patrons of orthodox medical systems.

5. Conclusion
Prevalence of the concurrent use of herbal and orthodox medicines in this study is low but when sick, almost half of respondents would opt for orthodox medicines. All the sociodemographic characteristics of respondents except the age had no association with respondents’ concurrent usage of herbal and orthodox medicines. Patients less than 30 years were almost 2.4 times more likely to concurrently use both herbal and orthodox medicines than those above 30 years but the place of seeking healthcare system, whether orthodox medical systems or herbal clinics, had no association with this habit. Belief that both herbal medicines and orthodox medicines work together to manage an ailment is the main reason for those who use both forms of medications.

Ethical Approval
Prior approval for this study and the procedures was obtained from the Ethics Committee of the School of Medicine and Health Sciences of the University for Development Studies.

Disclosure
Participants were only interacted with following granting of permission by the heads of various institutions mentioned in the study. Data was collected from participants only after they had verbally given free and informed consent to take part in the study. Funding was by the authors.

Conflicts of Interest
The authors declare that they have no conflicts of interest.

Authors’ Contributions
Evans Paul Kwame Ameade, Mohammed Ibrahim, Halimatu-Sadia Ibrahim, and Rabiatu Hamisu Habib conceived the idea and designed the questionnaire. Mohammed Ibrahim, Halimatu-Sadia Ibrahim, and Rabiatu Hamisu Habib collected the data. Evans Paul Kwame Ameade analyzed the data. Evans Paul Kwame Ameade, Mohammed Ibrahim, and Stephen Yao Gbedema did the drafting of the manuscript.

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