



## **Naturopathic Medicine and Public Health Management in Ghana; A Mixed Questionnaire Study**

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### **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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### **ABSTRACT**

**Background:** Naturopathic medicine is at its embryonic stage of development in Ghana and West Africa in entirety. In jurisdictions where Naturopathic medicine is well regulated, Naturopathic practitioners are well integrated into the primary healthcare delivery team. In Ghana, the case is quite different due to a myriad of issues.

**Objectives:** This study examines the role of Naturopathic medicine in Public Health in Ghana and potential policy direction for adoption of Naturopathic protocols in global pandemic management, the challenges faced by Naturopathic Physicians in primary healthcare delivery, and the challenges of Naturopathic Medical Students on their clerkship at one of the designated government Hospitals.

**Methods:** The study adopted a mixed questionnaires study engaged in integrated data analysis. The respondents in this study were selected Naturopathic Medical Students of the Nyarkotey College of Holistic Medicine, Ghana.

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**Results:** Out of a sample size of 28, 100% (28) believed that, there is a role of Naturopathic medicine in public health management. 95% asserted that very little naturopathic remedies have been employed in the fight against Covid-19 in Ghana. There was also a unanimous agreement (100%) that Ghana needs to adopt a National Policy on Naturopathic remedies in Public Health.

**Conclusion:** Naturopathic medicine should be embraced fully into Ghanaian primary healthcare delivery. It is important to look at the best practices which exist in other jurisdictions such as China and India for adoption. It is time for the policy makers to speed up the passage of the Traditional and Alternative Medicine bill.

*Keywords: Naturopathic medicine; primary healthcare; public health emergency; Ghana; healthcare law.*

## 1. INTRODUCTION

Naturopathic medicine is an important component of Primary Healthcare. The World Naturopathic Federation [1] is of the view that managing the current pandemic requires utilizing all available treatments and resources both within conventional medicine and within the field of Traditional and Complementary Medicine (T&CM). Their assertion was further cemented by a recent study by Liang et al., (2021), which attributes the success of COVID-19 management in China to adoption of integrative medical practice. Additionally, some studies have confirmed the impact of the Neem Tree on alleviating COVID-19 symptoms. For instance, a research by Baildya et al. [2] agrees that there is some evidence that the neem tree has some effect on the SARS-CoV-2 virus. Another study by Subramanian, (2020) identified the compounds present in leaves of the Neem tree as potential inhibitors for COVID-19 and found compounds like Quercetin, Zinc, Vitamin A, Vitamin B1, B2, B6, Vitamin C and Vitamin E. Patel et al. [3] also confirmed the Hibiscus Tea as antiviral properties. An earlier study conducted by Takeda et al. [4] also agrees that hibiscus Tea has antiviral ability. Additionally, Yang et al. [5] also confirmed that coronavirus patients were successfully treated with Chinese herbal medicines including the use of hibiscus leaves and other roots. Hibiscus contains high levels of vitamin C along with various antibacterial properties. Naturopathic remedies address lifestyle factors as an integral part of practice. What is the role of Naturopathic Practice in public health crisis and primary healthcare delivery? This is the subject of our research study.

## 2. RESEARCH METHODOLOGY

This is a mixed questionnaire study which embraces both quantitative and qualitative data

to evaluate the role of Naturopathic medicines in primary healthcare and public health in Ghana. The study evaluates the role of Naturopathic medicines in Public health crisis in Ghana and potential policy direction for adoption of Naturopathic protocols in global pandemic management. Additionally, the study investigates Naturopathic modalities Ghanaians adopted in dealing with COVID-19 as a public health emergency from the views of Professional Naturopaths. Also, we investigate challenges faced by Naturopathic Physicians in primary healthcare delivery and finally, investigate the success and challenges of Naturopathic Medical Students on their clerkship at one of the government Hospitals.

A questionnaire developed by the researchers was employed to collect primary data from the respondents for the study. This questionnaire items were validated by experts in Naturopathic practice in Ghana and a pilot study conducted among practitioners in a nearby institution, with a Chronbach Alpha coefficient of 0.894, indicating internal consistency of the instrument. The respondents in this study were Naturopathic Medical Students at Nyarkotey College of Holistic Medicine. The total respondents for this study were 28 out of a population of 30 practitioners. Convenience sampling was used to select the respondents indicating 93% of the population. For the open-ended questions, their feedbacks were almost the same. Hence, we used one respondent for the narrative; Stacy, which is a pseudonym.

## 3. FINDINGS

### 3.1 Data Presentation and Analysis

The findings of this study are presented in two sections:

- i. Section I presents findings from quantitative data. Data are presented in

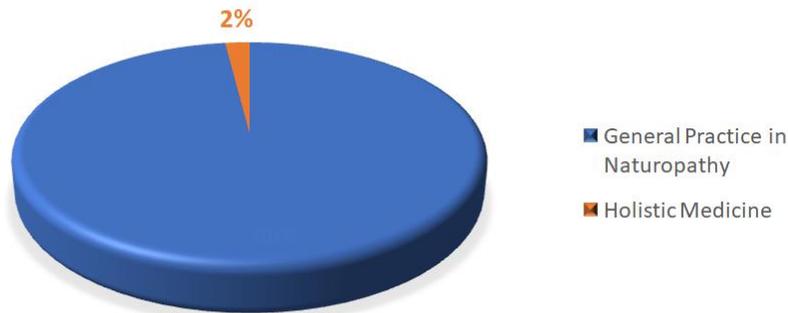
the form of descriptive metrics such as the graphs, charts and tables.

- ii. Section II presents the qualitative narrative from the open-ended questions.

### 3.2 Section I Case Study Results

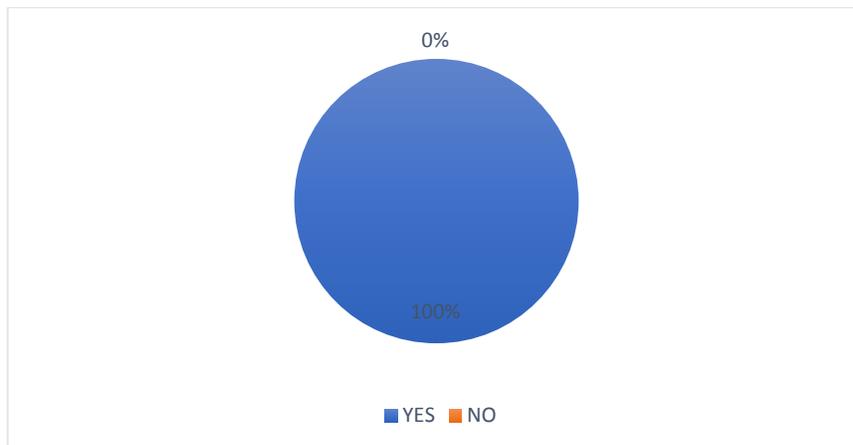
Table 1 below shows the total response rate of the Naturopathic Medicine practitioners to the questionnaires. 30 questionnaires were sent and 28 received. This shows a response rate of 93%.

Fig. 1 presents responses to the question: which area would you stay and practice within complementary alternative medicine? As can be seen from the chart, 98% of the respondents said they want to be in general practice of Naturopathic medicine.



**Fig. 1. Type of Practice Respondents Want to Adopt**

Source: Field Data, 2021



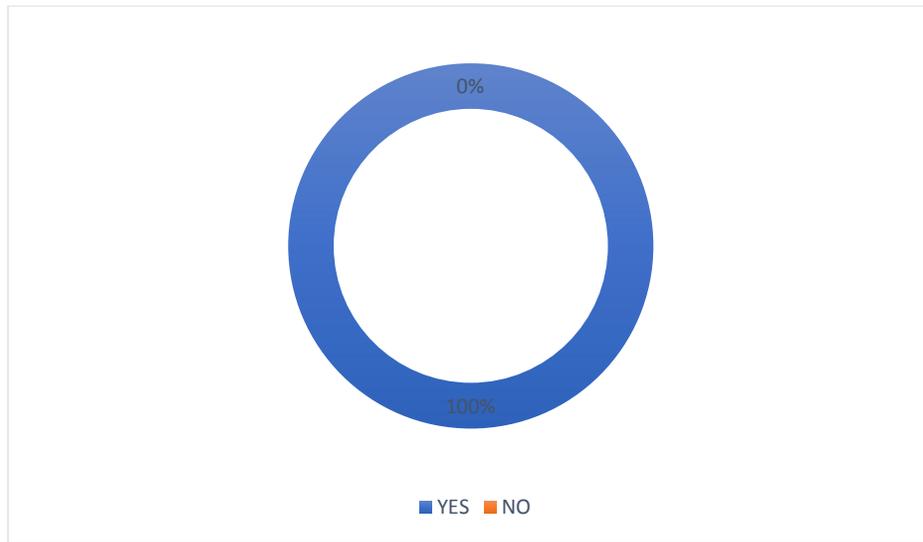
**Fig. 2. Perception on the Naturopathic Medical School Attended**

Source: Field Data, 2021

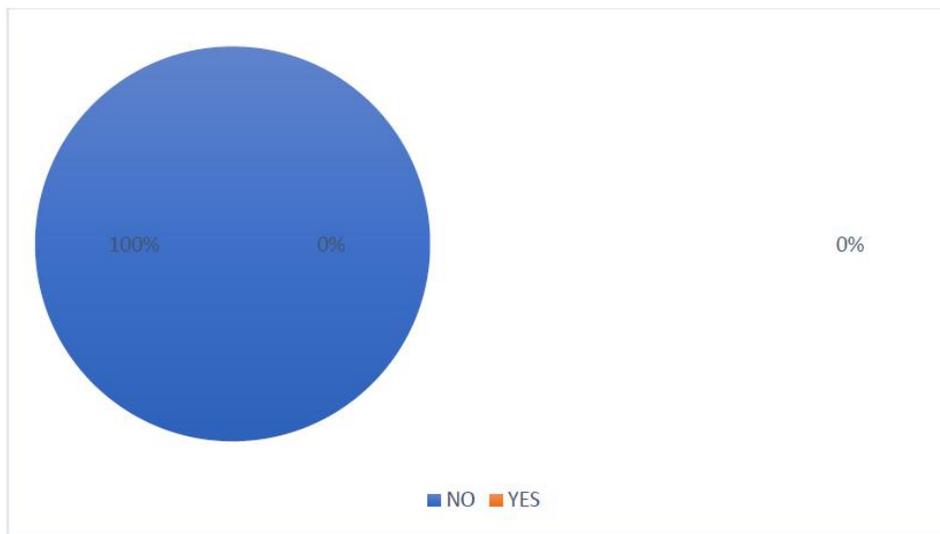
Fig. 2 presents responses on whether respondents believe they attended the right Naturopathic Medical School in Africa. There was unanimous agreement representing 100% attesting to the fact that, Nyarkotey College of Holistic Medical was the right Naturopathic Medical School they attended in Ghana.

In Fig. 3, the respondents were asked whether Naturopathy has a role in both public health crisis and primary health care in Ghana. There was also unanimous agreement representing 100%.

Fig. 4 below presents responses on the practitioners' opinion on whether Ghana is doing well in Naturopathic practice as compared to India, China and other countries. 28 respondents representing 100% attest to the fact that, Ghana is not doing well in the area of Naturopathic medicine, hence, a resounding "NO".



**Fig. 3. Perception on the Role of Naturopathy in Public Health and Primary Healthcare**  
 Source: Field Data, 2021



**Fig. 4. Perception on Performance of Naturopathy in Ghana**  
 Source: Field Data, 2021

**Table 1. Response Rate Analysis on Closed-ended questions**

Descriptions	Number of questionnaires	Percentage (%)
<b>Total Population</b>	<b>30</b>	<b>100%</b>
Number of Respondents (A)	28	93%
Number of Non-Respondents (B)	2	7%
<b>TOTAL (A + B)</b>	<b>30</b>	<b>100%</b>

Source: Field data, February, 2021

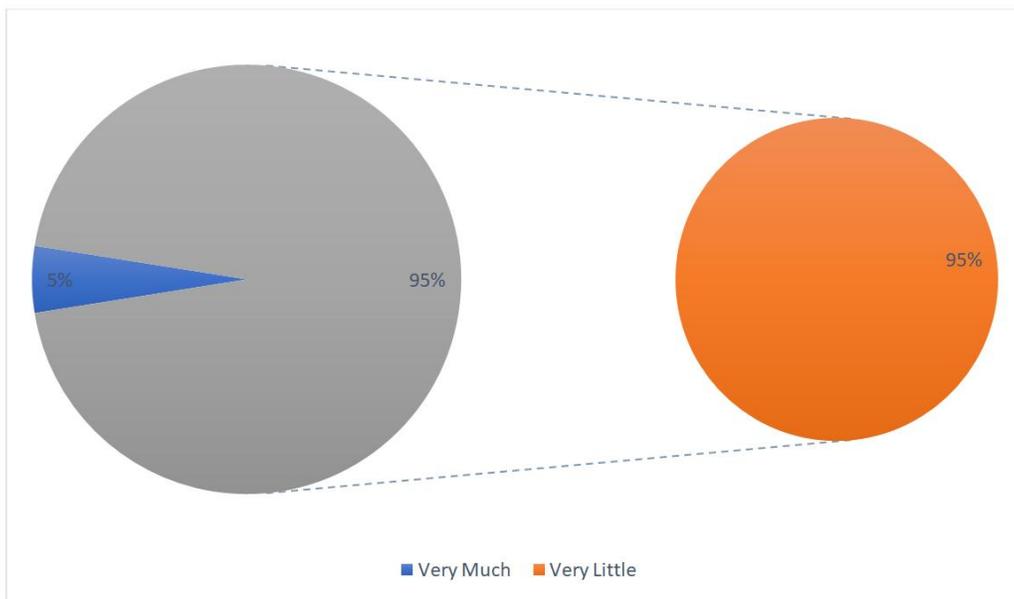
In Fig. 5, respondents were asked whether Ghanaians have adopted naturopathic remedies in this COVID 19 era. 95% of the Naturopathic

Medical Students opined that, very little naturopathic remedies were adopted during the COVID 19 pandemic. 5% of the respondents are

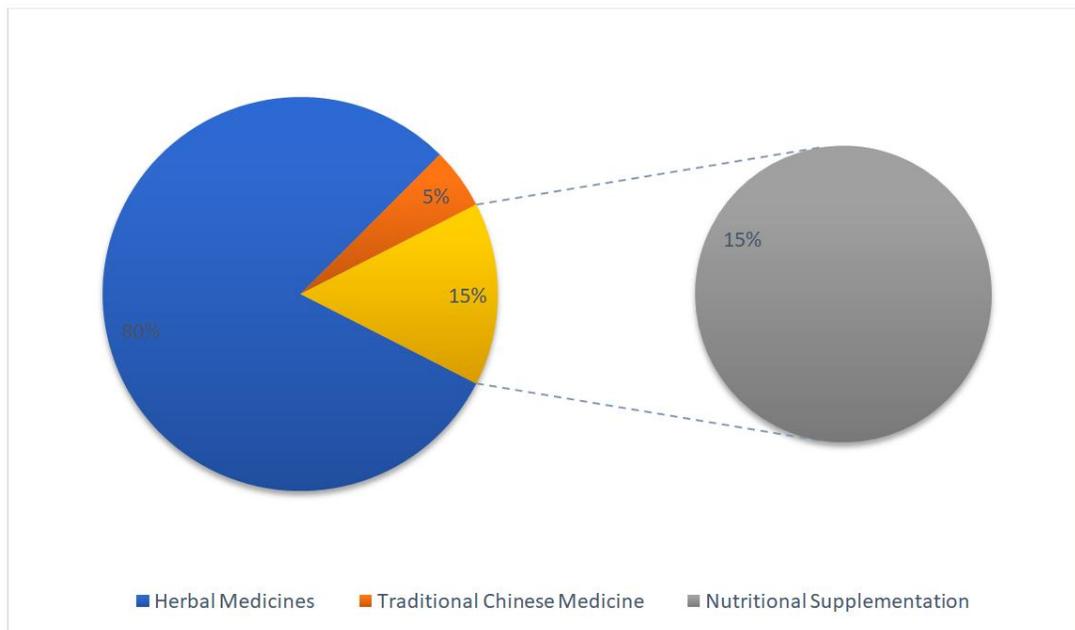
of the opinion that, indeed, Ghanaians patronized naturopathic remedies in COVID-19 pandemic.

In Fig. 6, respondents were asked to validate the Naturopathic modalities Ghanaians adopted during the COVID-19 Pandemic. 20 respondents

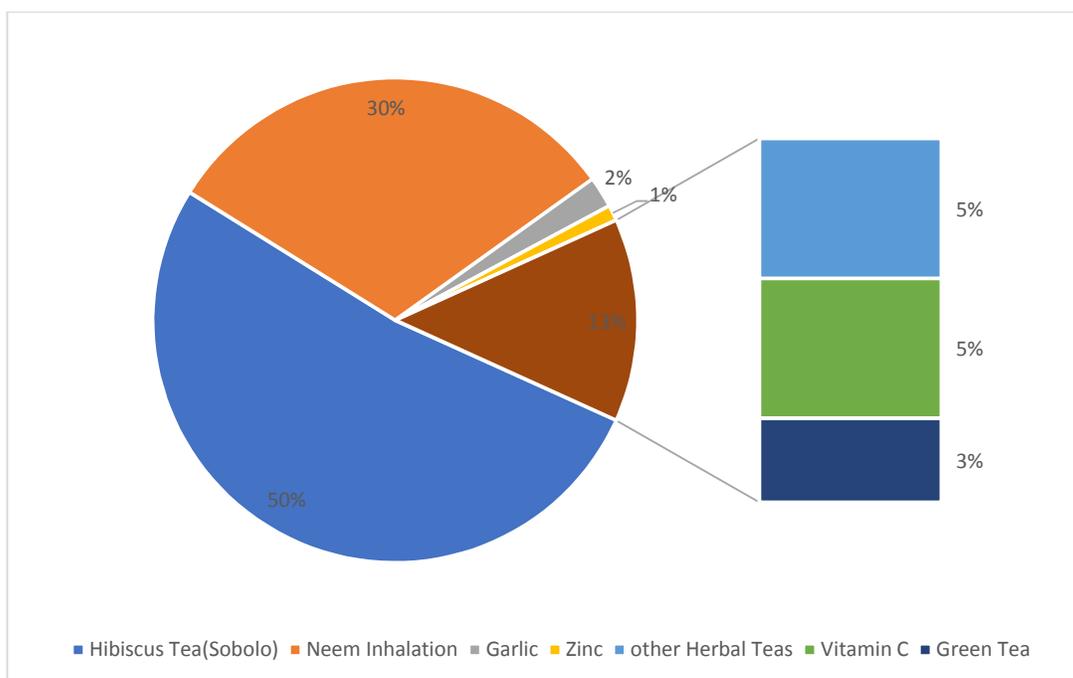
representing 80% opined that, herbal medicine was widely used. 15% explained that, Nutritional supplements were also accepted by Ghanaians while 5% assert that, Traditional Chinese Medicines were also adopted.



**Fig. 5. Respondents' View on Adopting Naturopathic Remedies for Covid-19**  
 Source: Field Data, 2021

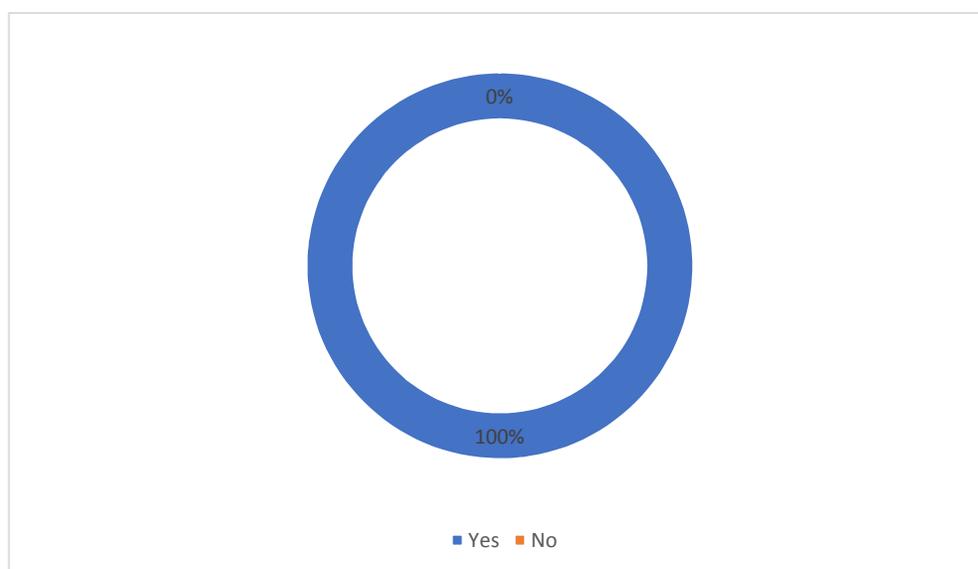


**Fig. 6. Naturopathic Modalities Adopted by Ghanaians in the Covid-19 Pandemic**  
 Source: Field Data, 2021



**Fig. 7. Naturopathic Ingredients Widely Used by Ghanaians in Fighting Covid-19**

Source: Field Data, 2021



**Fig. 8. Respondents' View on Naturopathy Policy in Ghana**

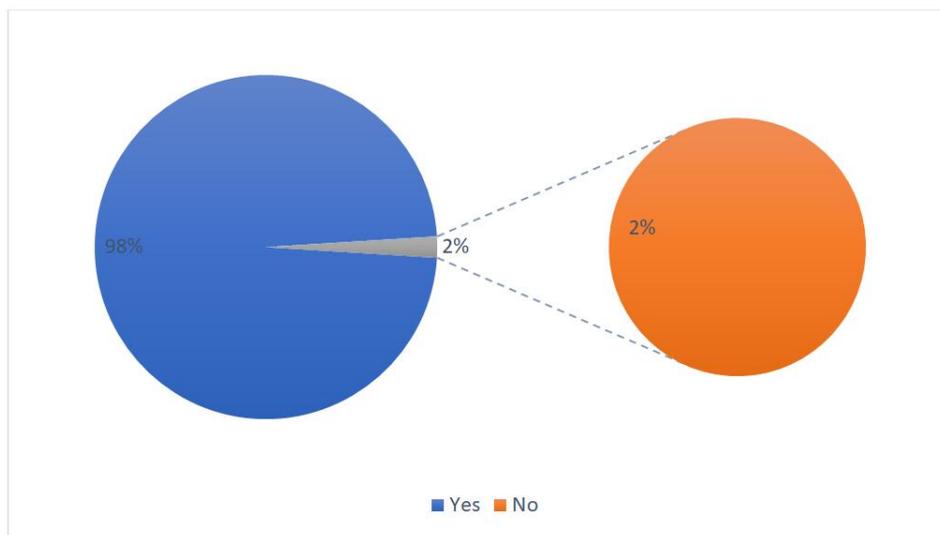
Source: Field Data, 2021

Fig. 7 presents respondents' validation of Naturopathic ingredients used by Ghanaians in this COVID 19 crisis. 50% explained the hibiscus Tea also known as "Sobolo" in Ghanaian parlance was mostly adopted. This was followed by Neem inhalation representing 30% and others respectively.

In Fig. 8, respondents were asked to provide their view on whether Ghana needs to adopt a national policy on Naturopathic medicines in public health. There was unanimous agreement as 100% of the respondents said yes, it is time for Ghana to adopt national policy on Naturopathy.



**Fig. 9. Respondents' View on their Clerkship Training at a Conventional Government Hospital**  
*Source: Field Data, 2021*



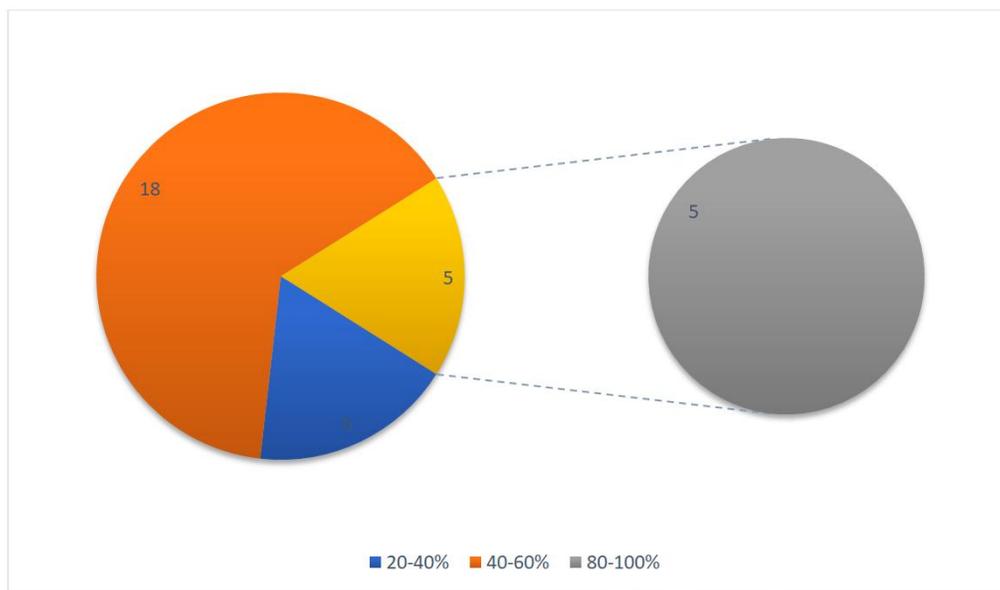
**Fig. 10. Impact of Clerkship Program at the Government Hospital**  
*Source: Field Data, 2021*

In Fig. 9, respondents were asked if they experienced any challenges under the Medical Doctors at the designated government hospital for their clerkship programs. There was unanimous agreement as 100% of the respondents said yes. There was some friction between the Naturopathic Medical Students and their trainers who were Medical doctors at the government hospital.

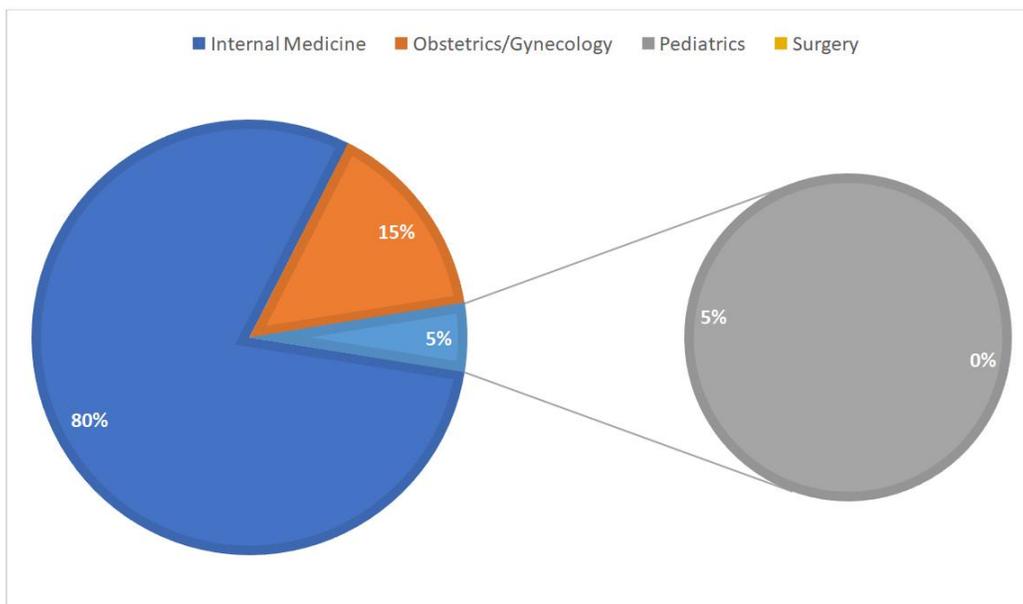
In Fig. 10, respondents were asked to state the impact of the clinical training program at the government hospital. 26 of the respondents

representing 98% said, the training program was beneficial to them. However, 2 respondents representing 2% said the program was unsuccessful under the Medical doctors.

Fig. 11 presents respondents' rating of the success of the clinical training program at the designated government hospital under the Medical Doctors in percentages. 5 respondents rated the training at 20-40%; 18 respondents rated the training at 40-60% and additional 5 respondents rated the training at 80-100%.



**Fig. 11. Naturopathic Medical Students' Rating of Clinical Training at the Government Hospital**  
 Source: Field Data, 2021



**Fig. 12. Most Beneficial Department During Clinical Training**  
 Source: Field Data, 2021

In Fig. 12, respondents were asked to state which department was more beneficial during the clinical training program at the designated government hospital. 80% of the Naturopathic Medical students opted for Internal Medicine. 15% opted for Obstetrics and Gynecology and

5% opted for Pediatrics and none rooted for surgery.

In Fig. 13, respondents were asked to state which department was more friendly and provided support during the course of their clinical training program at the designated

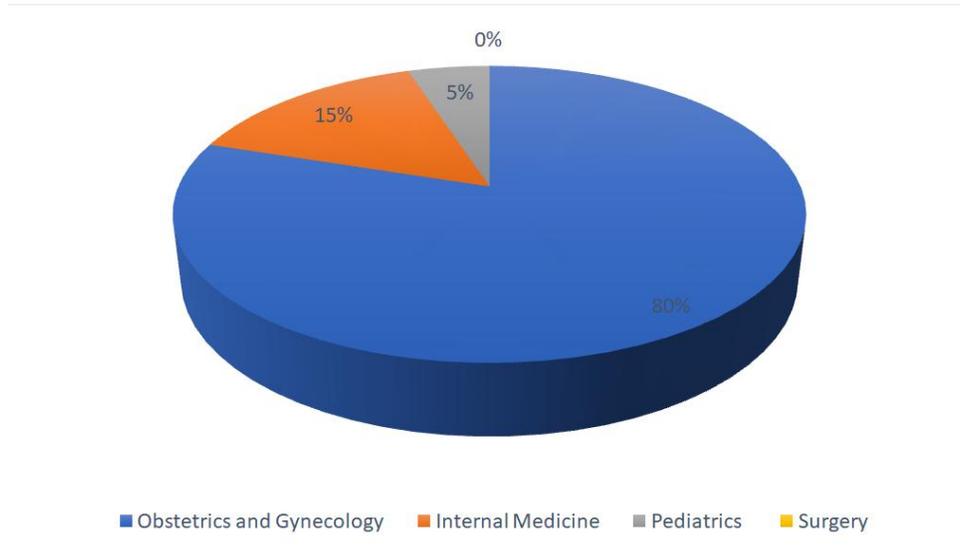
government hospital. 80% of the Naturopathic Medical students opted for Obstetrics and Gynecology department. 15% opted for Internal Medicine and 5% opted for Pediatrics and none rooted for surgery.

In Fig. 14, Respondents were asked whether they would still recommend that their colleagues go to the same Hospital for Clinical practice. 98% said Yes and 2% said No.

In Fig. 15, 80% of the respondents expressed that vaccines are in line with Naturopathic

Principles; hence, Naturopathy and Public Health are analogous. 20% were not aware that vaccines are in line with Naturopathic principles and hence they are of the view that Naturopathy and Public health are not analogous.

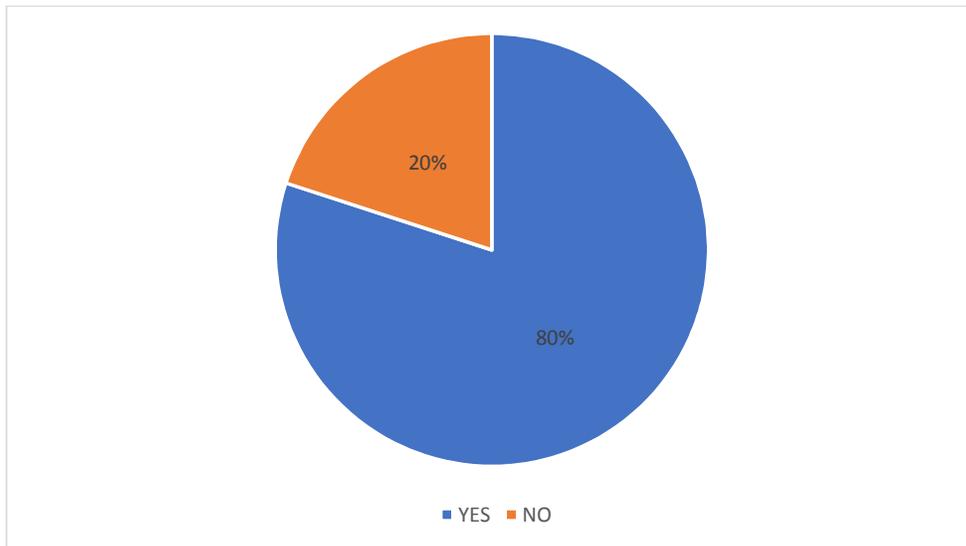
In Fig. 16, respondents were asked whether they would take the COVID-19 jab as Naturopathic Practitioners. 26 respondents representing 98% said they will take the vaccine. 2 Respondents representing 2% had a different opinion on the vaccine and said NO.



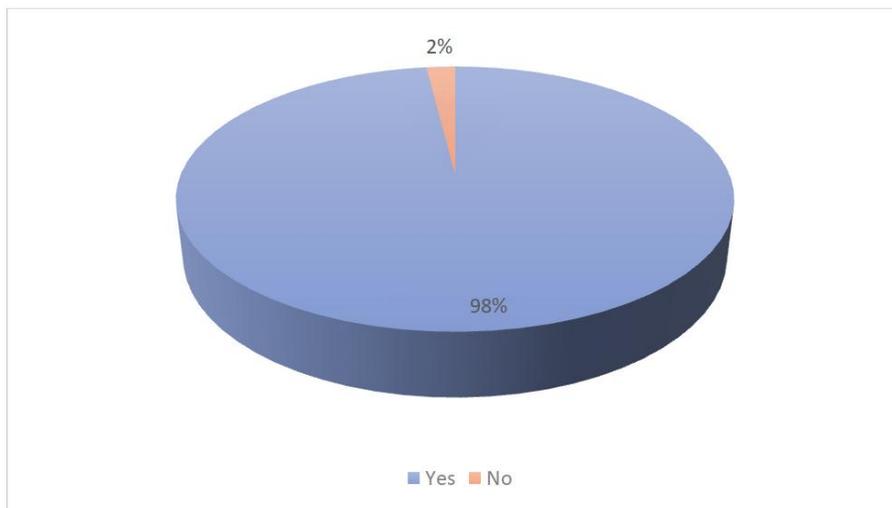
**Fig. 13. Most Friendly and Supportive Department**  
Source: Field Data, 2021



**Fig. 14. Respondents' Recommendations to Facility**  
Source: Field Data, 2021



**Fig. 15. Knowledge on Naturopathy and Vaccination in Public Health**  
*Source: Field Data, 2021*



**Fig. 16. Medical Students' View on Covid-19 Inoculation**  
*Source: Field Data, 2021*

Fig. 17 presents the percentage of respondents who have taken the Vaccine as Naturopathic Medical Student. 98% said they have not taken the jab and 2% have taken the jab.

In Fig. 18, respondents were asked whether they would advise parents to immunize their children as Naturopathic Medical Students. There was 100% consensus by the Naturopaths. They agreed that they would advise parents on immunization programs.

Fig. 19 presents responses on Naturopathy and scope of practice. As can be seen in the figure,

there was unanimous agreement (100%) by the respondents that Naturopathy has limitations and hence, there is the need to refer cases to the Medical Doctors as well.

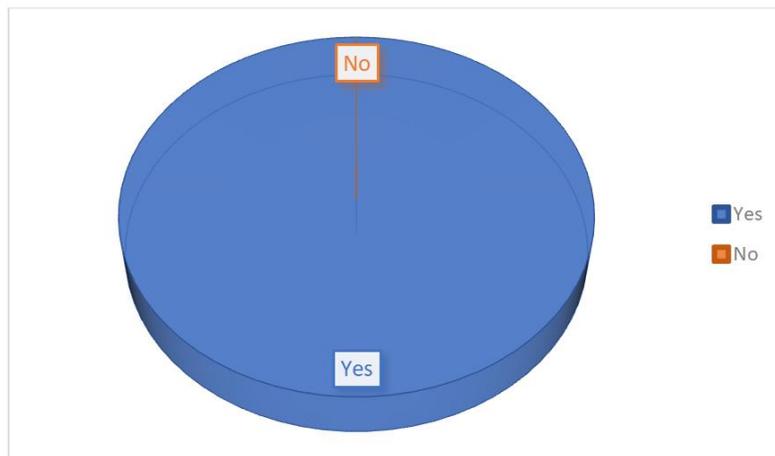
In Fig. 20, 50% of the respondents are of the opinion that mistrust between Conventional doctors and Naturopaths are the major challenges to deal with in Ghana. 30% also said that the educational background of the Naturopaths is a key challenge as well. 10% explained that referral pathway and standardization are challenges in Ghanaian jurisdiction.



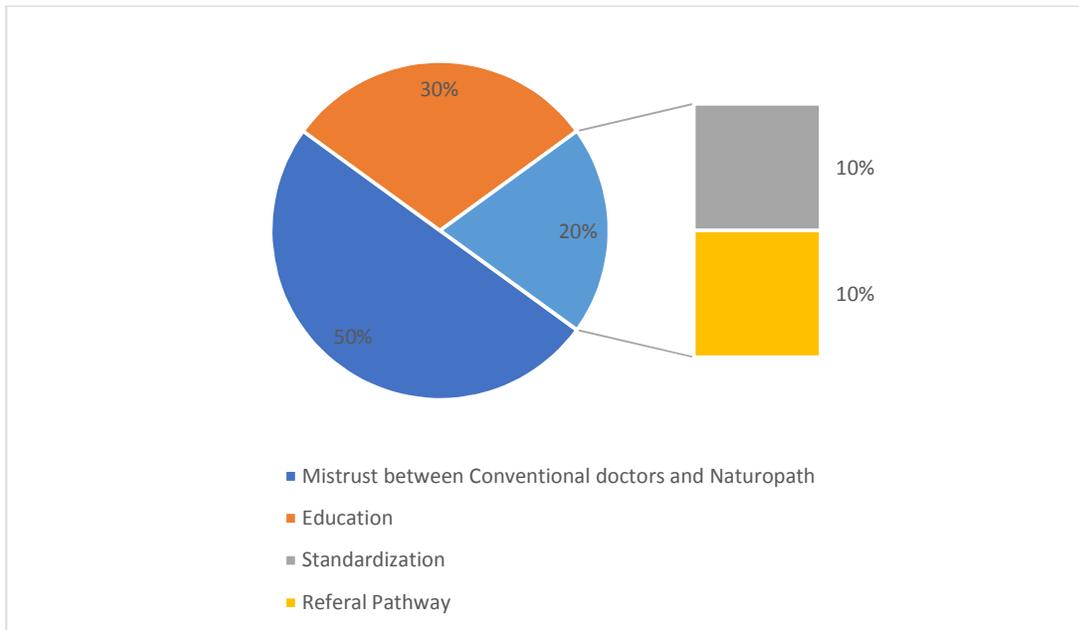
**Fig. 17. Naturopathic Students who Received the Covid-19 Vaccine**  
*Source: Field Data, 2021*



**Fig. 18. Naturopath's Opinion on Children Immunization Programs**  
*Source: Field Data, 2021*



**Fig. 19. Respondents View on Referral Pathway and Scope of Practice**  
*Source: Field Data, 2021*



**Fig. 20. Naturopathy Practice Challenges**

Source: Field Data, 2021

### 3.3 Section II Case Study Results on Open Ended-questions

The researchers adopted Pseudonyms to help protect respondents' anonymity. Survey questions in this section that were asked and addressed were:

1. Tell us a little about Yourself and the department during your Clinical Training.
2. Tell us a little bit about your Professional Journey in naturopathy
3. What were your perceptions about Naturopathy before enrolling to study Naturopathic Medicine at Nyarkotey College of Holistic Medicine?
4. Has Your Perception Changed about Naturopathy now?  
 If Yes, explain.....  
 If No explain.....
5. What were your challenges in Studying Naturopathy at Nyarkotey College of Holistic Medicine?
6. What were your Challenges during your Clinical Training at the government Hospital or Private facility?
7. Do you think Naturopathic Medical Students in Ghana should still do their clinical training at the government hospital or designated Conventional private centers?
8. What were your best moments during the clinical Training with the medical practitioners?
9. What were some of the Medical practitioners' opinion on Naturopathy?
10. Do you think Medical Practitioners are ready to work with Naturopathic doctors?
11. Do You think Medical Practitioners have knowledge in Naturopathy?

If Yes, Explain

If No, Explain

12. Between foreign trained Medical doctors and locally trained ones, which of them have some idea on Naturopathy?
13. Do you think Nyarkotey College of Holistic Medicine is on the right track of training Naturopathic doctors?
14. Do you think Nyarkotey College of Holistic Medicine is charging the right fees for the Naturopathic Medicine Program compared to the foreign schools?
15. What is your assessment of the current Naturopathy curriculum?
16. Which subject(s) do you want to see in the new curriculum?
17. As the only Naturopathic Medical School in Ghana; what is your satisfactory rate for Nyarkotey College of Holistic Medicine in percentage?
18. Would you get vaccinated as a Naturopathic Medical Student?
19. What is your view about vaccination as a Naturopathic Medical Student?
20. Are the Medical Staff getting Vaccinated for COVID-19?

If Yes, what are their reasons:

If No, what are their reason:

21. What are some of the Naturopathic protocols Ghanaians adopted to prevent COVID 19?

Name them:

22. What are some of the Naturopathic protocols you adopted as a Naturopathic Medical Student to prevent COVID 19?

### 3.4 Qualitative Analysis

#### 3.4.1 Stacy

Stacy is a Naturopathic Medical student at the Nyarkotey College of Holistic Medicine pursuing a Diploma in Naturopathic Medicine and is currently on her clinical training program at the designated government Hospital. She has been in the Naturopathy business for over five years and is a female. She intends to practice general Naturopathic Medicine in her future Naturopathy profession.

On her current perception about Naturopathy, she explained that her perception has completely changed as compared to her previous perception. She noted: *“upon studies, I have unveiled that Naturopathy is much broader than I thought. Thus, exposing me to various alternative practices as well”*.

On challenges in the course of studying Naturopathy at Nyarkotey College of Holistic Medicine. She opined: *“Lack of infrastructures and more practical sessions”*.

On her view on challenges faced during the Clinical Training at the government Hospital, she notes: *“The challenge I faced greatly was sometimes, we are treated as though we were quacks and therefore do not deserve to be there too”*.

As a result of their challenges at the designated government hospital, they were to provide their views on whether prospective Naturopathic Medical Students in Ghana should still do their clinical training at the government hospital? She explained: *“I think the government hospital is better”*

Another question asked was their best moments during the clinical Training with the medical

practitioners and she explained that, her best moment was when she was allowed to work on a patient under supervision.

Additionally, respondents were asked to explain Medical practitioners' opinion on Naturopathy. Stacy noted that, most of them are ignorant of Naturopathic medicine and their first time of hearing about Naturopathic Medicine in Ghana.

Hence, they were further asked to examine whether Medical Practitioners are ready to work with Naturopathic doctors. She notes: "Yes, they are now becoming abreast with it".

On whether Medical Practitioners have knowledge in Naturopathy, she asserts that, "from the way they received us and perceived the practice, they are not ready to work with us in an integrative system of medical practice".

Further, she explained that foreign trained Medical doctors have more knowledge on Naturopathic Medicine juxtapose to Ghanaian trained Medical doctors.

She also believes that, with their experience with the medical doctors and medical students also on their clerkship program at the government hospital, Nyarkotey College of Holistic Medicine is on the right track to training Naturopathic doctors in Ghana and Africa in entirety, though the college is charging relatively lower fees juxtaposed to the foreign Naturopathic Medical schools with an extensive Naturopathic curriculum. On her view on vaccination as a Naturopathic Medical Student, she agrees that she is ready to accept the job and would advise parents to immunize their children from her assessment at the pediatrics department at the government hospital.

On naturopathic modalities Naturopaths adopted to fight COVID 19, she notes: "The use of herbal tea and natural supplements"

On her view on whether Naturopathy has a role to play in Primary Healthcare delivery. She posits that "Naturopathy is a distinct type of primary healthcare medicine that blends patient's participation by addressing the physical, environmental, lifestyle, attitudinal, and emotional aspects of health. This allows naturopathic doctors to find and treat the cause of the disease, not just symptoms, using a variety of therapies in strengthening the body's natural defenses". Hence, Naturopathy plays an

important role in primary healthcare delivery in Ghana.

One significant question that was also asked was whether they think Naturopathy has a role in public health crisis. She averred that "Naturopathy aims to educate the person to look after their own health and the health of their family, minimizing symptoms of any illness, supporting the body's capacity to heal, and balancing the body so that illness is less likely to occur in the future. A range of therapies are used to support the person, hence, Naturopathy has a role in public health crisis".

She believes that Naturopathy 's limitation has to do with emergency and surgical cases. She realized this during her clerkship at the government hospital. This means that there is the need to refer cases to the medical doctors as well. She notes: "because some cases require emergent treatment whereas Naturopathy is somewhat gradual and performs no magic"

She further agrees that, the department that was more interesting and difficult during clinical training was the Surgical department because "medical officers felt we aren't into that and surgery is not our field, hence, we are always pushed to learn more to prove ourselves right"

Upon all the challenges they encountered at the government hospital, they were asked whether they would still refer Naturopathic students to the said Government Hospital and why. Stacy's response to this question was Yes, "they will be exposed to a lot and get to widen their knowledge and identify cases they must refer"

On the issue of challenges of Naturopathic Physicians in Primary Healthcare delivery in Ghana. She said, "There's lack of facilities and also funding to support naturopathy". She however, would want to practice general Naturopathy "because it allows me to employ any alternative method in the treatment of patients whenever the need be to facilitate the healing process".

#### 4. DISCUSSION

We are of the view that public health can turn to Naturopathy as well for some answers in crisis such as COVID-19 [6]. We have also noted that both public health and Naturopathic principles are analogous [6] hence, policy makers can as well turn to Naturopathy for remedies to the

escalating cases of public health issues [7] Though we found that there are challenges in the practice of Naturopathy from Stacy's narratives and the quantitative study (Fig. 20), we are of the view that these challenges stem partly from mistrust between Conventional and Naturopathic practitioners. This mistrust can be rectified by introducing academic programs in naturopathy to bridge the gap. The Nyarkotey College of Holistic Medicine's model of training Naturopathic Practitioners should be used by the government and the Health Ministry as case model for the training of Naturopaths and other alternative practitioners. We also believe that Naturopathic Practitioners should be circumspect to recognize that Naturopathy has its own limitations (Fig. 19), hence, cases above the jurisdiction of Naturopathic practice should be referred immediately to the orthodox medical facilities.

Though there are people who hold the view that Naturopathy is against vaccination, we found that assumption to be untrue (Fig. 18) as practitioners have recognized the impact of immunization programs. Further, even though we found vaccine hesitancy amongst Naturopathic Medical Students as 2% reported to have taken the COVID 19 jab (Fig. 17), about 98% are willing to take the Jab (Fig. 16). The only challenge was that about 20% (Fig. 15) of the Naturopathic Medical Students were not aware that vaccines are part of Naturopathic Principles. We believe that for Naturopathic Practitioners to be accepted into the Primary healthcare in Ghana, there is the need for effective clinical education of the practitioners during the training period, and this should be done under the supervision of Medical Practitioners (Fig. 10). Despite the fact that there was some friction during the clerkship program, the benefits derived from the program were evident.

During the COVID 19 pandemic, Hibiscus Tea and Neem inhalation were widely used (Fig. 7) as preventative measures in Ghana with positive results. This demonstrates that there are potential benefits from Naturopathy in public health and primary healthcare delivery, which is evident as a result of public acceptance of these remedies. Additionally, the principles of Naturopathy which also involve healthy living, prevention and health promotion are analogous to the core functions of the Ghana Health Service [8]. Thus, we are of the opinion that the Ghana Health Service can further incorporate Naturopathic services to improve health outcomes more [9].

Interestingly, the Ministry of Health [10] in Ghana has a regenerative health and Nutrition department and one would expect that the health sector should incorporate naturopathic services. The case however seems different. The regenerative health and nutrition department, also set up by the Ministry of Health is a logical policy program after health insurance. Many people are not aware of such policies in our healthcare sector. The department appears to be a white elephant. The program draws experiences of an African Hebrew Community living in Dimona, Israel and tries to adapt them to Ghana. The department has not been quite useful in the Ghanaian context. Due to the fact that the Regenerative Health and Nutrition department as well as the Ghana Health Service's mandates focus on prevention, promotion and healthy living, they should be more tolerant to Naturopathic remedies. This, however is not the case. The idea behind regenerative health just as Naturopathy involves the use of natural and non-medical interventions to continuously improve the health of the people, prevent diseases, and increase life expectancy. Meaning that there is a role of Naturopathy in the public healthcare in Ghana and we further call for a national dialogue to relook at the mandates of the regenerative health and nutrition department, Ghana Health Service as well as the profession of Naturopathy to improve the lives of Ghanaians.

## 5. CONCLUSIONS

As healthcare policy researchers, we observed that Naturopathic medicine has a major role to play in primary healthcare delivery in Ghana and ultimately in public health management. We also believe that allied health workers, healthcare administrators and the entire medical community should have some knowledge in Naturopathy and other alternative medicines during their training in schools to be abreast with current happenings in the medical world. This would curb the numerous frictions between allopathic and Naturopathic profession as well. Notwithstanding the significant role Naturopathic medicine plays in primary healthcare delivery, there are many challenges which need to be addressed for incorporation into the healthcare delivery. We believe that, the first has to do with government passing the Traditional and Alternative medicine bill to help streamline the profession. We are further of the opinion that Ghana could follow models in North America, Latin America, India, China and many more in developing the

Naturopathic profession. Additionally, Ghana can rely on the services of World Naturopathy Federation's (WNF) standards to help the Naturopathic profession.

## 6. LIMITATIONS

The study centered on practitioners of Naturopathic Medicine in Ghana. Consumers were not involved in the study. Besides, all included studies were conducted in Tema, Ghana, whether this evidence is equally applicable to other countries outside Ghana needs further international study.

## CONSENT

Stacy agreed to participate in this study voluntarily after being taken through a process of informed consent

## ETHICAL APPROVAL

Ethical consideration for this case study research was obtained from the President of Ghana Association of Naturopathic Physicians (GANP), the umbrella body of graduate Naturopathic Doctors and Naturopaths in Ghana.

## ACKNOWLEDGMENTS

First and foremost, we expressed our gratefulness to the Almighty God for granting us His grace, favor, energy, wisdom, and guidance to survive this paper. "After you have suffered for a little while, the God of all grace [who imparts His blessing and favor], who called you to His own eternal glory in Christ, will Himself complete, confirm, strengthen, and establish you [making you what you ought to be" (1 Peter 5:10). We wish to express our profound gratitude to our supervisors, and all those who supported our work especially the registrar of Nyarkotey College of Holistic Medicine, Tema Community, 7, Post office; Mr. George Nartey Amewuga. May God bless you all!

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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