



A Commentary on Consumers' Perspectives on IMBOOST Herbal Mixture in the Ghanaian Market

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Authors' contributions

This work was carried out in collaboration among all authors. Author RNO conceptualized the study and triangulated the narrative responses with archival records. The other authors critically reviewed and proofread the manuscript for publication. All authors read and approved the final manuscript.

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Commentary

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ABSTRACT

Objective: The herbal market in Ghana is flooded with many products approved by the Food and Drugs Authority (FDA). Most of these products appeared during the COVID-19 Pandemic and have gained public confidence and acceptance, marketed as immune boosters. One notable and highly marketed herbal mixture approved as an immune booster by the FDA is the well-known IMBOOST Herbal Mixture.

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Aim: This paper examines anecdotal evidence of IMBOOST Herbal Mixture formulated as an immune booster in Ghana.

Methods: In this paper, as researchers, promoters, and advocates of traditional, Complementary, and Alternative Medicine in Africa, we chanced on much anecdotal evidence from the public on the effects of IMBOOST Herbal Mixture on their health.

Hence, we employed a qualitative hearsay case study. Twenty hearsay videos, audio, and Facebook post were assessed; however, 11 were used for the narratives. We were purposive in our data collection process. Inclusion criteria were hearsay evidence that explained medical conditions treated. Exclusion criteria were hearsay evidence that had no relation to medical conditions but only praised the manufacturer. The source of evidence was one distributor of the product who had the videos, audio, and Facebook post of the clients from 2020 to date.

Results: Our result is a shred of hearsay evidence. We believe that hearsay evidence, though, not a standard scientific method, cannot be overlooked in the field of Traditional, Complementary, and Alternative Medicine.

Conclusion: In this paper, we present a commentary on hearsay evidence of IMBOOST Herbal Mixture as an immune booster in Ghana.

Keywords: Herbal medicine; IMBOOST; anecdotal; hearsay; evidence; Ghana.

1. INTRODUCTION

The herbal medicine sector in Ghana is a multi-billion industry that the government can tap into to generate foreign exchange [1]. Yet, the industry is overlooked. However, individual players in the industry have taken advantage of the many opportunities in the sector to produce herbal products to improve the health of the people and in turn rake in millions of Ghanaian cedis.

For the medical and scientific community, the challenge with Ghanaian herbal products is the scientific aspect, to demonstrate their efficacy. We do know that the standard scientific protocol [2] used to conduct clinical trials on pharmaceutical products cannot be the same as a standard to conduct clinical trials on herbal medicines. The field of Herbal Medicine should have its standard protocol to measure its efficacy.

Additionally, the cost of conducting these clinical trials is financially demanding and most of these herbal practitioners do not have the financial prowess to meet these standards.

We believe that anecdotal evidence mostly used by herbal manufacturers can also be documented in scientific literature. These anecdotes cannot be underestimated [3] as the patient is the best describer of natural remedies. For instance, in the case of Mainstream Medicine, it is the Physician who heals. This is different in the case of Natural Medicine; it is the patient who plays a key role in healing. Hence, it is the patient who knows whether the treatment or

product is effective. Even in mainstream settings, hearsay evidence plays an important role in disease prevention [4].

1.1 Anecdotal Evidence in Natural Clinical Practice

Anecdotal evidence can be in the form of a shared experience or a narrative that makes a point. A neighbor's experience with their doctor, their review of a school, or a three-star online rating of a hotel stay are all examples of anecdotal evidence.

As researchers and policymakers in the healthcare industry, we do know that when we say anecdotal evidence, we can break it into two parts: Evidence is proof, in some form or another, offered to defend a belief or a claim. Anecdotes are short stories told to illustrate a point or support a claim. In many cases, anecdotes are presented as being true, representing real people and events.

Hence, we present a commentary on one of Ghana's foremost herbal products in the market known as IMBOOST Herbal Mixture based on consumers' anecdotal evidence we chanced upon. We believe that anecdotal evidence can mean testimony that something is true, false, related, or unrelated based on isolated examples of someone's personal experience. This kind of anecdotal evidence is very popular in the Ghanaian herbal medicine space. We hear and see them claiming one particular herbal product is effective based on a client's experience, and

most of these herbal manufacturers hide under anecdotal evidence to boost sales.

However, we do appreciate the great and distinct comparison between anecdotal evidence and scientific evidence, or proof based on findings from systematic observation, measurement, and experimentation [2,5]. While scientific evidence can be independently verified using the scientific method, anecdotal evidence cannot. Anecdotal evidence is often offered when scientific evidence is absent or when it refutes scientific evidence.

Due to the absence of scientific evidence in natural medicinal products, we support the assertion that anecdotal information should complement formal research evidence, and the important role of anecdotes must be acknowledged, studied, and utilized [5]. This, [6] believes that hearsay evidence cannot be overlooked in medical practice. Additionally, [7] also believes that anecdotal information can be used, but in its non-evidential context as it can help with clinical teaching, as well as help to influence professional or public opinion by relaying information in an appealing, familiar, and personalized ways.

2. METHODOLOGY

We employed a qualitative study that used a hearsay case study. Twenty hearsay videos, audio, and Facebook post were assessed; however, 11 were used for the narratives. A purposive sampling technique was used to collect data.

Inclusion criteria were hearsay evidence that explained medical conditions treated. Exclusion criteria were hearsay evidence that had no relation to medical conditions but only praised the manufacturer. The source of evidence was obtained from one distributor of the product who had the videos, audio, and Facebook post of the clients from 2020 to date.

Because the paper contains links to videos and other testimonies of individuals about their own experience using the subject of research, the data is processed in compliance with the relevant conditions, and the hearsay case study research is not made available in a form that identifies the data subject or any of them. This is done to achieve compliance with the provisions of the Data Protection Act, therefore would be permissible as consistent with research purposes.

3. FINDINGS

3.1 IMBOOST Herbal Mixture: Anecdotes from Consumers

In this regard, we present some selected anecdotes collected by users of IMBOOST Herbal Mixture in this commentary paper.

The first case is an aged woman in a video affirming the fact that she had been bedridden for years and after using four bottles of IMBOOST Herbal Mixture, she can now walk.

The second case is another woman in her fifties, who also attested to the fact that she had many medical conditions such as high blood pressure and blood sugar. She claimed after taking the product her blood pressure and blood sugar had stabilized. She also claimed that her urinary flow had also improved.

A third case is a 57-year-old man who also confirmed in the video that IMBOOST Herbal Mixture had improved his ability to walk.

The fourth case is a young lady in her 30s who claimed to have menstrual issues and had seen drastic improvement. She further claimed that her libido had also improved after taking the product.

A fifth is a young man who also claimed to experience tiredness and loss of appetite, and had seen drastic improvements after taking the product.

The sixth case is an interesting one on the Facebook post dated May 4, 2020, where the client claimed to have had stage 3 kidney disease and which had reduced to stage 1 after taking the IMBOOST herbal Mixture. The client further claimed he had stopped going to the hospital and was only doing checkups while still on the product.

The seventh is also a young woman who claimed to have a previous history of ectopic pregnancy, and after surgery, her menstrual cycle had distorted for years. However, after taking the herbal product for a period, her menstrual cycle became normal.

The eighth anecdote is about an aged woman who claimed to have undergone surgery the past seven years which led to one of her legs being immobile. She claimed that after taking 12 bottles of the product she could now walk. She showered blessings on the manufacturers of the product.

The ninth anecdote is about a woman who also claimed to have a pot belly, and had witnessed a drastic reduction with an improved previous history of stomach disorders.

The tenth is a story of a woman who had been on a pharmaceutical hypertensive drug for six years that led to reduced libido. She claimed after taking just one bottle of the IMBOOST Herbal Mixture she had seen improvement in her high blood pressure. She was particularly happy with the high sex drive she had experienced after taking the product.

Finally, the eleventh is a testimony from a renowned gospel musician in Ghana who claimed to have issues with her eyes and was using a medicated lens. But after taking the product, she could now see without using the medicated lens. She further claimed that she prescribed the product to many people after praying for them. One notable case was a woman with a protruded belly, who after taking the product became normal.

4. DISCUSSION

IMBOOST Herbal Mixture is a Ghanaian-formulated phytomedicinal product approved by

the FDA as an immune booster. A lab study conducted at the Kwame Nkrumah University of Science and Technology (KNUST) shows that the product is safe for human health.

The product contains four key ingredients; *Mangifera indica*, *Cassia siamea*, *Tectonia grandis*, and *Khaya senegaliensis*. These plants are common in the Ghanaian herbal community.

IMBOOST Herbal Mixture is a 100% unadulterated phytomedicinal product. Though the exact mechanism of action of the product is yet to be established, the four (4) ingredients of IMBOOST Herbal Mixture have been shown to have modulatory effects on the immune system, and they work synergistically in this special formulation to improve the immune system and general well-being to promote ultimate health. This product is potentially formulated as an immune booster to support both male and female health needs. On the dosage and direction for use: adults (18+ years and above) 60 ml or 4 tablespoons -3 times daily, and children (12 to 17 years) 30 ml or 2 tablespoons-3 times daily. IMBOOST Herbal Mixture should be taken 20 minutes before meals in the morning, and 20 minutes after meals in the afternoon and evening.



Fig. 1. Sample of the IMBOOST herbal mixture

On adverse reactions: IMBOOST Herbal Mixture is generally safe. No known reported side effects. IMBOOST Herbal Mixture is not recommended for pregnant women, lactating mothers, and children below 12 years. IMBOOST Herbal Mixture is available in a 500 ml opaque plastic bottle with a shiny seal.

Medicinal plant research demonstrated the numerous benefits of the ingredients. For instance, in the case of *Mangifera indica*, Two studies [8,9] also found that the polyphenols in *Mangifera indica* are also loaded with antioxidant and anti-inflammatory properties. These polyphenols enhance gut bacteria and help treat or prevent conditions like obesity, diabetes, heart disease, and cancer.

One study [10] found that the mango leaf extract could manage obesity, diabetes, and metabolic syndrome by interfering with fat metabolism.

Additionally, three other animal studies [11-13] have found that the mango leaf extract inhibits fat accumulation in tissue cells. The studies further found that cells treated with a mango leaf extract had lower levels of fat deposits and higher levels of adiponectin.

A recent animal [14] study this time compared mango leaf extract and the oral diabetes drug glibenclamide in rats with diabetes. The study found that the mango leaf extract group experienced lower blood sugar levels than the glibenclamide group after 2 weeks.

A previous human study [15] from Oklahoma found that giving mango leaf extract and fruit for 12 weeks drastically decreased blood sugar levels in obese adults.

In the case of *Casia siamea*, one study [16] investigates the analgesic and anti-inflammatory activities of *Cassia siamea Lam* stem bark extracts. The study found that siamea has analgesic and anti-inflammatory properties. One study [17] examined the claim of longevity and found that eating a diet that contains *siamea* could significantly extend the mean life span of the common fruit fly by 14% compared with the control diet.

The study provides supportive evidence that supplementation with *siamia* prolonged the life span and reduced oxidative stress in the common fruit fly. Finally, a study suggested that *Cassia Siamea* is an antimalarial drug, and found

that it demonstrates a promising antimalarial effect [18].

Also, we found numerous anecdotes from the consumers of the IMBOOST herbal product in Ghana. What we did not see is the negative aspects of the products from consumers. Probably, this could also support the assertion that anecdotes might have their limitations [5], as one cannot rely on other people's stories as a guide to assess how likely they will experience similar benefits or harms from an intervention. However, anecdotes are useful in some situations.

We also found that [5] most scientific and medical discoveries have their roots in anecdotes, which have led to hypotheses that are then proved by rigorous testing. So in some situations, the anecdotal evidence tends to convince others and could lead to evaluation.

A case scenario was provided by [5] when Howard Florey and Ernst Chain produced the drug penicillin based on Alexander Fleming's previous work, the antibiotic properties were so striking that it was introduced for use without long-term trials. The author noted: "When people are treated for an illness and survive in the face of evidence that most people die without treatment, there is usually little doubt about the treatment's efficacy".

We can also look at the many anecdotes from the IMBOOST Herbal Mixture consumers presented. One that was striking was the sixth case on the Facebook post dated May 4, 2020, where the client claimed to have had stage 3 kidney disease and which had reduced to stage 1 after taking the IMBOOST Herbal Mixture. The client further claimed he had stopped going to the hospital and was only doing checkups while still on the product. This personal experience coupled with others could tell whether a treatment works.

Hence, we believe that, just as penicillin was introduced using this same approach, anecdotal evidence can be employed to determine the effect of treatment if at least some of several principles are fulfilled [5]:

- The outcome of the disease or condition is predictable in the absence of treatment. The condition in question does not usually get better on its own, at least not immediately.

- The effect of the treatment is immediate. The outcome is evident soon after the treatment.
- The effect of the treatment is large. There is a dramatic, large and obvious effect that would be difficult to attribute to spontaneous improvement.
- The effect of the treatment can be confirmed by repetition. If the nature of the condition is such that it recurs, it is possible to confirm the treatment's effects by repeated testing.

We also believe that one can use another person's anecdotal experience if the harm is few and the benefit meaningful. Hence, many people go to a particular mainstream hospital based on one's personal experiences. Hence, from the many anecdotes from IMBOOST Herbal Mixture, if one person is suffering from renal disease and read the comment posted by a diseased patient who claimed to experience healing using the product, others would want to try it as well.

Others would also want to try it, for instance, those on conventional drugs for their high blood pressure for many years and predisposing them to other ailments. Once, they know it could help them, why not use it?

Besides, once they know rational use of herbal medicine in a short term has minimum side effects as compared to pharmaceutical drugs, why won't they use it? Finally, they have heard from anecdotes that the product is effective. Hence, if the herbal product works; why won't they opt for it? Even, if it doesn't work, they stand to lose nothing; besides, scientific medicine from the allopathic point of view sometimes also fails them. So one stands to lose nothing if one opts for herbal medicine based on anecdotes.

5. CONCLUSION

Our commentary highlights the numerous health effects consumers reported following the use of IMBOOST Herbal Mixture in the Ghanaian jurisdiction. From an anecdote's point of view, the product appears promising. We recommend that the manufacturer should further take steps to be more scientific about assessing the effectiveness of the herbal product, even with just one person, by using what is known as an 'N of 1' trial. These trials have been defined:

...[a trial where] the patient undergoes pairs of treatment periods organized so that one period involves the use of experimental treatment and

the other involves the use of an alternate or placebo therapy. The patient and physician are blinded, if possible, and outcomes are monitored. Treatment periods are replicated until the clinician and patient are convinced that the treatments are different or not different.

For instance, we could have a 'fake' or placebo herbal product formulated with a different ingredient as well as the active one and tried each, one at a time, without knowing the one tried, this would be an 'N of 1' trial.

Hence, the Manufacturer of IMBOOST Herbal Mixture and others in Ghana's herbal industry could be looking at this protocol to bring more scientific approaches into the herbal industry in clinical practice. This notwithstanding, anecdotal information is helpful and cannot be underestimated in the herbal and alternative medicine industry. We believe that herbal practitioners should be keeping records of anecdotes and allow them to be published in scientific journals to build literature on their products. We also know that anecdotes are effective when a client is looking to deal with instant symptomatic relief for a comparatively minor disorder, as reasonable use of herbal medicines could have minimal side effects. We also found that anecdotes could help us to know how clients fared well in using these herbal products in the Ghanaian market.

Finally, we know that anecdotes could help us know clients' experiences with herbal products as we gathered in the case of IMBOOST Herbal Mixture on different medical conditions. This is likely to help us in disease prevention or interventions. We can also use anecdotes from consumers in the Ghanaian herbal space to develop useful hypotheses for prospective scientific evaluation.

We recommend that future directions of IMBOOST Herbal Mixture are needed in Ghana. We believe that the anecdotes/hearsay pieces of evidence also prompt the establishment of a comprehensive medication history study on those IMBOOST users who "blow the whistle".

CONSENT AND ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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