

ORIGINAL ARTICLE

Quality of life and morbidity profile of chronic disease patients treated with herbal medicine in Ghana

Stephen Tetteh Engmann,^{1,2} Olalekan Ayodele Agede,^{3,4}

¹Family Medicine Unit, Manna Mission Hospital, Accra, Ghana

²Department of Dietetics, University of Ghana, Legon-Accra

³Department of Medicine, University of Ilorin Teaching Hospital, Ilorin, Nigeria

⁴Department of Pharmacology and Therapeutics, University of Ilorin, Nigeria

ABSTRACT

Background: Chronic diseases are among the leading causes of morbidity and mortality worldwide that profoundly affect the quality of life of individuals. Quality of life assessment is crucial for developing effective interventions and policies aimed at improving patient outcomes and overall well-being. The purpose of this study was to determine the morbidity profile and the quality of life of chronic disease patients treated with herbal medicine in a municipal hospital in Ghana.

Methods: This was a descriptive cross-sectional study done at the herbal clinic of the Ledzokuku Municipal Assembly Hospital in the greater Accra region of Ghana from March to June 2019. A consecutive sampling method was used. Data was collected through the administration of a structured questionnaire. Data was analysed using STATA statistical software package version 16. The level of significance used was $p < 0.05$.

Results: The most frequent chronic diseases presenting at the herbal clinic were Hypertension (15.8%), chronic low back pain (13.4%), and chronic hepatitis B infection (13.4%). The quality of life from the transformed mean scores of the four domains was good in physical health (51.33 ± 15.91), psychological health (57.18 ± 15.74), and environmental domain (55.72 ± 13.82) but poor in social relationships (50.18 ± 15.44). There was a significant association between the quality of life and physical health ($p < 0.05$), psychological factors ($p < 0.05$), social relationships ($p = 0.029$) and environmental factors ($p < 0.05$).

Conclusion: The most frequent chronic disease presenting for herbal treatment in this study is hypertension. Patients with chronic diseases treated with herbal medicine had good transformed mean scores of quality of life in the physical health, psychological domain, and environmental domain; however, only 44.1% of the participants rated their overall quality of life as good.

Corresponding author:

Stephen Tetteh Engmann

P. O. Box TN 1032, Teshie-Nungua, Accra, Ghana

Email: stephenengmann@gmail.com

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BACKGROUND

Chronic non-communicable diseases (NCDs) pose a significant burden globally, particularly in Africa including Ghana. They account for 71% of global deaths annually, with cardiovascular diseases, cancers, respiratory diseases, and diabetes being on top. The rising burden of NCDs in sub-Saharan Africa threatens progress towards reducing premature mortality from these diseases. Developing countries like Ghana are experiencing increased NCD prevalence due to factors including unhealthy diets, lack of physical activity, poor healthcare access, and loose tobacco policies. Chronic illness can be defined as a disease that requires at least one year of ongoing medical attention, affects a significant portion of the population and imposes a substantial economic and psychological burden.

Chronic diseases often lead to a decline in physical functioning, which can severely impact an individual's ability to perform daily activities. For instance, patients with chronic obstructive pulmonary disease (COPD) experience limitations in physical tasks due to breathlessness and fatigue, leading to a lower quality of life (QOL). The psychological and emotional well-being of individuals with chronic diseases is also significantly affected. The emotional toll of managing a chronic illness, coupled with the fear of disease progression, can lead to a diminished sense of well-being and life satisfaction. Chronic diseases also have substantial social and economic implications. The economic burden of managing chronic diseases, including medical expenses and productivity loss, can strain individuals and healthcare systems.

The use of herbal medicine in the treatment of chronic diseases has gained significant attention in recent years. Patients often prefer herbal remedies due to perceived safety, efficacy, affordability/cost-benefit and cultural acceptance. Herbal medicine is a crucial part of alternative and traditional medicine

that patients frequently choose. As the global healthcare landscape evolves, understanding the impact of herbal medicine on chronic disease management remains crucial for developing holistic and patient-centred care strategies. While these traditional systems show popularity and potential benefits, caution is warranted. A study in Iraq found significant morbidity and mortality associated with herbal treatment (sagwa) for acute gastroenteritis in children, particularly in rural areas with less educated mothers. It is necessary to control the sale of these herbal medicines, accredit service providers and increase consumer knowledge because improper use of herbs can have major or even fatal adverse reactions.

Chronic non-communicable diseases (NCDs) significantly contribute to Ghana's disease burden, with conditions such as cardiovascular diseases, diabetes, and chronic respiratory disorders being prevalent. Herbal medicine use is also prevalent in Ghana, particularly for treating chronic diseases like Human immunodeficiency virus (HIV), cancer, and diabetes. Older adults in Ghana use various herbs, including ginger, garlic, and moringa, citing perceived safety, efficacy and affordability as reasons for their use. Despite its popularity, there is a lack of documentation on medicinal plant uses and limited disclosure of herb use to healthcare professionals. Adults with a range of NCDs report issues with several aspects of their health-related quality of life, particularly with regard to pain or discomfort and anxiety or depression. The rationale for this study was to explore the factors that are implicated in the burden of chronic diseases. It is unclear whether there is a link between the use of herbal medicines for chronic diseases and the quality of life of patients. The objective of this study was to determine the morbidity profile and the quality of life of chronic disease patients treated with herbal medicine in a municipal hospital in Ghana.

Methods

Study design and sample size

A descriptive cross-sectional study design was employed to determine the QOL of patients with chronic diseases at the herbal clinic of the Ledzokuku Municipal Assembly Hospital (LEKMA) in the greater Accra region of Ghana. A consecutive sampling technique was used, and patients who were 18 years and above, with awareness of their medical conditions and receiving treatment at the herbal clinic were recruited. The sample size was determined using an estimated population of patients with chronic disease presenting at the herbal clinic over four months of the previous year. With a patient population of 184, Yamane's simplified formula was used to estimate the minimum sample size and 127 participants were recruited.

Study area and population

The study was conducted from March to June 2019 at the herbal clinic of the LEKMA hospital, which is a Ministry of Health establishment constructed by the Chinese government under a partnership between China and Ghana. The facility has a Herbal Medicine Unit, where herbal treatment is provided for patients who have a preference for herbal treatment over orthodox medicine. The study population was all adult patients who presented to the herbal medicine unit for treatment for chronic diseases.

Data collection instruments and techniques

A self-administered validated questionnaire was used for data collection. The questionnaires were completed in the privacy of the consulting rooms at the herbal clinic. Quality of life was measured with the World Health Organization quality of life assessment tool (WHOQOL-BREF tool). The questionnaire also consisted of data on the socio-demographic characteristics of participants and their medical diagnosis which was obtained from their hospital records. The WHOQOL-BREF tool has

been validated in patients with chronic diseases, including diabetes, asthma, cancer and stroke, and has shown good internal consistency and validity.

Data analysis

After data collection, Microsoft Excel was used for data entry and cleaning and exported to STATA statistical software package version 16 for analysis. Continuous variables were expressed as means and standard deviations, and categorical variables were summarised as frequencies and percentages. The WHOQOL-BREF tool measures QOL in four main domains (physical, psychological, social relations and environmental domains) with a total transformed score of 100. Based on the WHOQOL-BREF score grading system, the transformed mean scores for QOL were put into four categories; very poor (0-25), poor (26-50), good (51-75) and very good (76-100). The chi-square test was also used to test the association between the physical, psychological, social relations and environmental domains and the overall QOL. The level of significance used was $p < 0.05$.

Ethical Consideration

Ethical approval was received from the Ghana Health Service-Ethical Review Committee (ERC011/12/18). Written informed consent was obtained from participants before the administration of the questionnaire. Participants' confidentiality and data security were maintained throughout the study. To ensure participant confidentiality and data security, all information was anonymised and stored on a password-protected computer.

RESULTS

Out of 127 participants who completed the questionnaire 60 (47.2%) were males and 67 (52.8%) were females. The age range of participants was from 19 to 81 years with a mean of 51.21 ± 13.93 . The majority (70.1%) were unemployed, and 74.0% of the participants had achieved Secondary/High school certificates or tertiary-level education. Table 1 shows the socio-

demographic characteristics. The most frequent chronic conditions presenting at the herbal clinic were Hypertension (15.8%), chronic low back pain (13.4%), and chronic hepatitis B infection (13.4%).

Table 1: Socio-demographic characteristics and morbidity profile of participants

| Variable | n=127 | % |
|-----------------------------------|-----------------------|------|
| Age | Mean±SD – 51.21±13.93 | |
| Sex | | |
| Male | 60 | 47.2 |
| Female | 67 | 52.8 |
| Marital Status | | |
| Single | 21 | 16.5 |
| Married | 79 | 62.2 |
| Divorced | 10 | 7.9 |
| Cohabitation | 2 | 1.6 |
| Widowed | 15 | 11.8 |
| Employment status | | |
| Employed | 38 | 29.9 |
| Unemployed | 89 | 70.1 |
| Highest level of Education | | |
| None at all | 3 | 2.4 |
| Primary | 30 | 23.6 |
| Secondary | 61 | 48.0 |
| Tertiary | 33 | 26.0 |
| Chronic Condition | | |
| Hypertension | 20 | 15.8 |
| Chronic low back pain (LBP) | 17 | 13.4 |
| Chronic Hepatitis B | 17 | 13.4 |
| Stroke | 13 | 10.2 |
| Osteoarthritis of the knee | 13 | 10.2 |
| Diabetes | 11 | 8.7 |
| Peripheral Neuropathy | 9 | 7.1 |
| Prostate Enlargement | 5 | 3.9 |
| Chronic Headache | 4 | 3.2 |
| Other Conditions | 18 | 14.2 |

QOL Domain Mean Scores and overall QOL

The transformed QOL mean scores were highest in psychological health (57.18±15.74) and the environmental domain of QOL (55.72±13.82). The social relations domain of QOL showed the lowest transformed mean score of (50.18±15.44). Based on the application of the WHOQOL-BREF score grading system, the physical, psychological and environmental domains of QOL were a good score, whereas the social relationships showed a poor domain score. Furthermore, only 44.1% of the participants rated their overall quality of life as good. Table 2 shows the QOL domains based on the WHOQOL-BREF tool.

| Domains | n | Mean | SD | Minimum | Maximum |
|------------------|-----|-------|-------|---------|---------|
| Physical | 127 | 51.33 | 15.91 | 6 | 94 |
| Psychological | 127 | 57.19 | 15.74 | 6 | 94 |
| Social Relations | 127 | 50.18 | 15.44 | 6 | 75 |
| Environment | 127 | 55.72 | 13.83 | 25 | 88 |

SD: standard deviation

Association between physical, psychological, social and environmental factors and the overall QOL

The association between participants' physical, psychological, social and environmental factors and overall QOL is shown in Table 3. The Chi-square test for association between physical, psychological, social and environmental factors and QOL showed that there was a significant association between the QOL and physical health (p<0.05), psychological factors (p<0.05), social relationships: (p=0.029) and environmental factors (p<0.05). In the physical domain, a majority of participants rated their quality of life as good (61.5%), while a notable percentage (19.4%) rated it as poor. The psychological domain also showed a significant association, with 51.9% of participants rating their quality of life as good. The

environmental domain showed a significant association, with 53.5% of participants rating their quality of life as good. Finally, the social domain showed a significant association with overall QOL, with 47.3% of participants rating their quality of life as good. Similar to the transformed mean scores, good QOL for all four domains was lowest in the social domain.

Table 3: Association between physical, psychological, social and environmental factors and the QOL

reported hypertension as the most common chronic medical condition receiving herbal treatment. Naturopathy and Yoga facilities in South India were reported to primarily address chronic conditions, including obesity, diabetes, hypertension, and arthritis. Furthermore, herbal medicine use is prevalent among patients in Ghana, with studies reporting high rates of usage among hypertensive patients (47.36%) and stroke survivors (43.4%). Findings from this study and other studies suggest that more patients with chronic diseases continue to use herbal medicines. Common reasons for herbal

| Overall Quality of Life | | | | | | | |
|-------------------------|-----------|----------|-----------------------|----------|-----------|----|--------------------------|
| Variable | Very poor | | Neither poor nor good | | Very good | | χ ² (p value) |
| | (%) | | (%) | | (%) | | |
| Physical | | | | | | | 0.000 |
| Good | - | - | 21(32.3) | 40(61.5) | 4(6.2) | 65 | |
| Poor | - | 12(19.4) | 38(61.3) | 11(17.7) | 1(1.6) | 62 | |
| Psychological | | | | | | | 0.000 |
| Good | - | 1(1.3) | 33(41.8) | 41(51.9) | 4(5.1) | 79 | |
| Poor | - | 11(22.9) | 26(54.2) | 10(20.8) | 1(2.1) | 48 | |
| Social | | | | | | | 0.029 |
| Good | - | 1(1.8) | 26(47.3) | 24(43.6) | 4(7.3) | 55 | |
| Poor | - | 11(15.3) | 33(45.8) | 27(37.5) | 1(1.4) | 72 | |
| Environmental | | | | | | | 0.000 |
| Good | - | 1(1.4) | 28(39.4) | 38(53.5) | 4(5.6) | 71 | |
| Poor | - | 11(19.6) | 31(55.4) | 13(23.2) | 1(1.8) | 56 | |

DISCUSSION

The overall QOL was good for 44.1% of the participants presenting at the herbal clinic for treatment. The top 3 prevalent chronic diseases were hypertension, chronic LBP and chronic hepatitis B. The most frequent chronic disease presenting for herbal treatment in this study is hypertension (15.8%). The study by Peltzer and Pengpid also

medicine use include expectations of faster recovery, cure, and superior effectiveness compared to conventional treatments. However, herbal medicine use is associated with poorer adherence to conventional medications and potential safety concerns.

In this study, the majority of the participants were unemployed. This could explain the reason for

lower mean scores for the social relations domain of participants. This finding corroborates the report by Siboni et al in Iran in which economic status was found to be associated with the QOL. Compared to this current study, there was no use of herbal medicine by the chronic disease patients investigated, however, there was a significant difference in QOL scores for patients with different chronic diseases. Among the factors associated with herbal medicine use in chronic disease patients were low income or socioeconomic status. This could be because herbal medicines are perceived to be cheaper, hence patients with a low income or socioeconomic status are those likely to use them frequently. Many patients do not disclose their herbal medicine use to healthcare providers, citing lack of inquiry as the main reason. There is therefore the need for improved patient education, physician inquiry, and research on the safety and efficacy of herbal medicines in Ghana.

Generally, the overall perception of quality of life and general health for patients with chronic disease is low. In this study, only 44.1% of the participants rated their QOL as good. The study by Peltzer and **Pengpid** in Thailand discovered an association between the usage of herbal medicines and having several chronic diseases as well as poor health-related quality of life. Compared to our study, they used a larger sample size in both rural and urban health facilities. The link between QOL status and chronic diseases can be explained by the belief by researchers that patients with most chronic conditions are always at risk for worsening health, dysfunction, and a decline in QOL. In this current study, there was a significant association between physical, psychological, social and environmental factors and QOL of participants. Research on chronic disease patients' quality of life (QoL) reveals complex associations with various factors. Physical health, including disease complications and comorbidities, significantly impacts QOL across multiple domains. Psychological factors, particularly depression, consistently show negative correlations with QOL. Furthermore,

environmental factors, such as rural living, were associated with lower QOL among patients with Diabetes. Lifestyle choices, including exercise and diet adherence, are other factors found to contribute to better QOL which were however not assessed in this study.

Different chronic diseases impact QOL to varying degrees, with respiratory conditions like asthma and COPD showing lower QOL compared to diabetes and hypertension. In this current study, none of the participants were found to have respiratory conditions like asthma and COPD. This could probably be due to the small sample size. The findings from the literature emphasize the importance of holistic approaches in managing chronic diseases to improve patients' overall well-being.

Limitations of the Study

The sample size used in this study is small based on patients attending the facility and thus the findings cannot be generalized to the entire population. Also, the sample may not be representative of the population due to the use of consecutive sampling techniques. However, to reduce sampling bias, the study population was clearly defined and the characteristics of the population were also defined. The questionnaire was kept short and concise to make it easy for patients to participate. Furthermore, because the study is cross-sectional in nature, it is limited in the extent to which conclusions can be drawn regarding the causal nature of the associations observed from the study.

CONCLUSION

The most frequent chronic disease presenting for herbal treatment in this study is hypertension. Patients with chronic diseases in this study treated with herbal medicine had good transformed mean scores of QOL in the physical health, psychological domain, and environmental domain. However, only 44.1% of the participants rated their overall QOL as good. There was a significant association between

the QOL and physical health, psychological factors, social relationships and environmental factors. The assessment of QOL could be adopted as part of the criteria for treatment outcome. Based on the poor QOL transformed score in the social domain, it is recommended that healthcare practitioners and hospital management should strengthen its social welfare unit to provide support for patients with chronic diseases. The integration of herbal medicine with orthodox medicine in healthcare should be institutionalised with well-documented guidelines. Further studies with large sample sizes are also recommended.

What is already known on this topic

- Chronic diseases profoundly affect the quality of life of individuals
- The use of herbal medicine in chronic diseases has gained significant attention in recent years.

What this study adds

- Herbal medicine use is prevalent among patients with hypertension compared to other chronic diseases.
- There was an association between physical, psychological, social and environmental factors and QOL of chronic disease patients.

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