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The Influence of Gender on the Use of Medicinal Plants for HIV Treatment

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ABSTRACT

The use of medicinal plants remains a common practice among HIV-positive individuals in Lesotho, a country where traditional medicine coexists with formal antiretroviral therapy (ART). This study explores gender differences in the use, knowledge, and perceptions of medicinal plants for HIV treatment. Drawing on both quantitative and qualitative data from HIV-positive participants across multiple health centers, the research highlights that women are more actively involved in the acquisition, preparation, and administration of herbal remedies, often informed by cultural roles and caregiving responsibilities. Men, while less visible in these roles, also participate sometimes covertly driven by stigma or distrust of conventional medicine. The study reveals that gendered beliefs influence health-seeking behaviors, access to traditional knowledge, and perceptions of efficacy. It underscores the need for gender-sensitive approaches in public health education, policy development, and research on the safety and efficacy of medicinal plants used in HIV treatment. Integrating gender perspectives can help ensure that both men and women receive appropriate support when navigating complex healthcare landscapes.

Keywords: Gender roles, Traditional medicine, Medicinal plants, HIV/AIDS, Antiretroviral therapy (ART), Ethnomedicine, Lesotho.

INTRODUCTION

In Lesotho, over two-thirds of the people infected with the human immunodeficiency virus (HIV) use medicinal herbs. However, there is limited information on gender-based differences regarding the use of herbs to treat illnesses related to HIV and AIDS. Medicinal herbs were widely used in Lesotho but little is known regarding gender-based differences in the use of medicinal herbs among HIV positive people. Most of the medicinal herbs used by HIV positive people were studied for their impact on other ailments in the literature. This highlights the need to explore the gender differences and the safety, efficacy, and toxicity of the plants on HIV/AIDS patients before recommendations could be made on their use. Lesotho is a landlocked country bounded by South Africa and the highest country in southern Africa, with almost 90% of its land above 1,800 m. Roughly two thirds of its people, of which almost 30% are HIV positive, live in poverty. It estimates that 337,000 HIV positive people receive current antiretroviral therapy (ART) in Lesotho. The country has a national AIDS treatment programme and provides free ART. However, after receiving ART 30% remain unsuppressed and 12% discontinue ART by 36 months. Medicinal herbs have been used for centuries as alternative medicine practices for HIV/AIDS. Before they would be recommended for use many laboratory studies, clinical studies, and research on safety, efficacy, and toxicity have to be considered to protect against life threatening conditions. However, most of the plants used have not been subjected to scientific scrutiny to determine their effects on HIV/AIDS. The use of medicinal plants was reported to treat various ailments in HIV positive people, however, a number of studies did not reveal the herbs used by HIV positive people. In countries where the people use medicinal plants, there is a possibility that some herbalists may take advantage of the demand and sell unsafe herbs to unsuspecting clients [1, 2].

Background on HIV and Traditional Medicine

Traditionally, HIV/AIDS infection was viewed as a death sentence by the affected and in cases where expensive antiretroviral drugs were not available, this understanding was especially so in developing nation countries. A study evaluated the use of medicinal herbs amongst HIV positive people in Lesotho. A questionnaire was administered to study subjects in September 2014 who were donating Antiretroviral drugs at the Mater Dolorosa clinic in Maseru. It was established that a considerable proportion of HIV-positive people (35.8%) used medicinal herbs in Lesotho. Asteraceae was the most common herbal family used indicating awareness of medicinal herbs and studies on the properties of the ones used. However, it was possible that some traditional healers may sell unsafe herbs to unsuspecting clients. The other limitation was that this study could not establish the effect of medicinal herbs on antiretroviral treatment outcomes. Given the considerable number of herbs used by HIV-positive people in this population and the possible dangers associated with herbal use, HIV counselling protocols in Lesotho should emphasize the dangers of using medicinal herbs whose safety and compatibility with antiretroviral drugs is not known. Importantly, the efficacy and toxicity profiles of the medicinal plants identified in this study need exploring, particularly given the global awareness of HIV/AIDS. For millennia, human beings have relied on plants and their extracts for prevention of diseases and treatment. Since prehistory, every society appears to have used plants for reclamation of health and the art of healing with plants and derived products began. The medieval physicians acted on the premise that health was regulated by four classical humours, temperament and elemental constituents of the universe. Inflammation and disease were attributed to disturbances in elemental balance leading to accumulation of poisonous and opaque humours like bile and bile salts. Herbs because of their inherent chemical diversity in their secondary metabolites were extensively used to control fever, inflammation and pain [3, 4].

Medicinal Plants and Their Role in HIV Treatment

Information on the nature of the disease and treatment options is crucial for the holistic care of HIV/AIDS. People infected with HIV should be aware of their treatment choices. Most participants were open to information about HIV/AIDS treatments, including medicinal herbs. Despite the unknown efficacy and safety of many plants used by HIV-positive individuals in this study, herbal remedies were commonly utilized, similar to findings in Lesotho. During treatment, individuals often seek alternatives beyond expert advice, driven by the unknowns surrounding HIV and its treatment, leading to suffering and experimentation with new practices. This is particularly true for marginalized populations who view conventional approaches as insufficient. Side effects of ARVs, such as drastic lifestyle changes and dietary restrictions, can also influence treatment preferences. Some people believe plant-derived medicines are safer and less toxic. Misunderstandings about the interactions between HIV and ARV medications were commonly reported in focus groups, highlighting confusion about the disease and treatments. Most plants used by HIV-positive participants also treat other ailments. Monitoring the efficacy and safety of substances used in treatment is essential. Noteworthy plants reported for HIV/AIDS treatment include Aristea ecklonis, Dicoma anomala, and Euphorbia heterophylla, with Dicoma anomala used for HIV/AIDS and chickenpox in Lesotho. Further research on these plants' efficacy and safety is recommended [5, 6].

Gender Differences in Health Practices

Despite the belief that women mainly serve as health-care providers, many men and children also use medicinal plants for ailments instead of seeking external help. The variety of plants used may indicate specialized ethnomedicinal knowledge. Alternatively, using multiple species might suggest their general efficacy or a lack of systematic knowledge about treatment indications. The analysis of KOs, defined as knowledge of a plant's medicinal use, employs the arithmetic mean as a balance between information and reliability. More effective treatments typically signify a higher number of indications; however, this struggles under the complexity of disease as a social phenomenon. An individual's illness drives the search for treatment, influenced by various factors. First, one must assess the necessity of finding a remedy, then evaluate the best options. This search is bounded by availability, involving both knowledge and access. If a treatment is known, its perceived efficacy must be judged, shaped by cultural beliefs around the illness and historical efficacy of the involved plants. For instance, a woman treated her son with crushed roots for fever and shoulder pain but later switched to a cock's testicle remedy due to the bitterness of the first. The illness was linked to heat and the child's behavior, demonstrating the influence

of social context on treatment choices. Another example contrasts with a mother's similar illness; only through contextual interpretation did the perceived severity of the fever emerge, prompting immediate responses to the diagnosis [7, 8].

Cultural Perspectives on Gender and Health

Women's proximity to healers may shape their understanding of and beliefs about modern medicine. The culturally developed logic that traditional treatments are effective for some health problems is based on a notion of perenniality and thus is a multiples-sided outcome of cultural perceptions of health care systems and gender distribution of these behaviours. It also sheds light on the various ways in which individual awareness of a disease may be manipulated by the cultural construction of the situation. A degree of male involvement regarding partners' creation and/or alteration of gendered notions of health states disposition, which is here crucial. Emotional states of anxiety observed during fieldwork present a challenge for women's help-seeking. When discussing medicated creams for candidiasis, husband's questioning of sexual promiscuity and expectations to sleep separately triggered a turn to informal or self-help. Together, these cases demonstrate how knowledge hidden in local settings is intertwined with traditional beliefs and may render a health problem more complicated. Thus, behaviours that reinforce secrecy could arguably be a bridge to later adaptations of these beliefs to new sicknesses. On the one hand, inclusion of such beliefs render abandonment of androcentrism easier; on the other, it may delimit the scope of inquiry. In this case, for example, it made the ethnographic study of local perceptions of the actual or predicted behaviour of men vulnerable to pre-understanding but also fostered investigation into the natural and social ecosystem. Anticipated male behaviours and patterns of this knowledge raised questions regarding tacit complexity in cultural models and their likely malleability or flexibility in a context of health workers' social division of labour [9, 10].

Gender Roles in Traditional Healing

In healing for HIV/AIDS using MPP and in traditional healing as a whole, various gender roles were assigned among men and women at all levels starting from gathering plants to treating patients. The majority of tasks were respectively performed by men and women with a few exceptions. For instance, in visiting a shaman and in giving snakehead leaves infusion (for HIV cases), men were found to perform the task. Overall, the functional or supportive roles of men were very limited in this regard compared to those of women, which may indicate that the gender issue is a sensitive topic in traditional healing for HIV/AIDS. This observation may also imply a strong, pervasive sex division in labor among genders when healing for HIV/AIDS using MPP. However, the somewhat exceptional cases when men perform the treatment task indicate that community norms on masculinity and patriarchal structures in African communities are not steadfast by nature, as confirmed in ethnographic literature. The accession to the treatment role was hardly possible for men owing to various constraints at societal and community levels. This finding is in line with that of a Scottish study in that gainful occupations are almost entirely female among the Pumwani community in Nairobi, Kenya. This may imply that, under such circumstances, men are likely to withdraw from traditional healing for HIV/AIDS after infiltration of the treatment task. Although a few reported cases are contrary to this finding, it may be expected that the situation is unusually rare. However, the lower half in reproductive health issues and community demographic variables, all of which were extrinsic factors affecting the treatment task among men, seemed too flexible for the withdrawal trend. Furthermore, there was no consensus on how HIV/AIDS was transmitted, as this behavior was personally and culturally biased. Hence, it was inferred that the examination of gender roles in traditional healing for HIV/AIDS using MPP had to place emphasis on the concerns of women [11, 12].

Research Methodology

The study adopted a quantitative approach and a descriptive cross-sectional design with both prospective and retrospective features. This means that it collected data at one point in time but also included patients that had few and long treatment histories. Ethical consideration on data collection is provided under the section "Ethical consideration related to data collection" and related to the minimization of breaches into human rights and maximizing the benefits of the study. The study area and participants overlap significantly, but demographic characteristics are not discussed under population or better as research participants. The study was conducted at the three health facilities that comprise the study area providing HIV counselling for a largely HIV-positive population demographically similar to that of Lesotho as a

whole. These are St Joseph's hospital, Motebang hospital, and Mofumahali oa Ts'epana clinic. All clients that consented and met the selection criteria to be part of the study were included in the sample, resulting in a sample of 389 participants. Inclusion criteria regarding HIV treatment history, age, residential location, willingness to participate, and exclusion criteria of those unable to provide informed consent and severely ill patients ensured validity in the selection of research participants. A structured questionnaire was used for data collection. The questionnaire was self-administered but the participants were assisted with an oral translation to Sesotho and English for those who found reading challenging. In addition to being pretested a few weeks before data collection, the questionnaire was designed for a population that was previously studied, which final confirmed the face validity of the data collection instrument. Data was cleaned and checked for completeness. The participants' socio-demographic and clinical variables were summarized using frequency tables. The study has a summary of how the ethical consideration regarding participant's rights, confidentiality, and bias were ensured. The authors largely reduced the risk of breaching human rights with participant selection criteria on a consent basis, obtaining ethical approval from both institutional and national ethics committees, not using any method that was likely to harm patients, ensuring confidentiality, and providing concise useful background information about the study to research participants [13, 14].

Study Design

This article presents a study conducted in Central South Africa, examining how gender influences the use of medicinal plants for HIV treatment. Interviews with 24 key informants gathered data on plant usage, with analysis identifying themes such as socio-demographics, plant collection methods, and sourcing resources. A qualitative research design was employed to deepen understanding of beliefs and behaviors related to this practice. This approach involved unstructured interviews and other qualitative techniques, while ethical principles ensured voluntary participation, informed consent, and participant confidentiality. The study engaged local black indigenous people, with cultural competence emphasized throughout to build trust, given their historical distrust of external researchers. Conducting interviews in local languages ensured comprehension among participants, and the snowball technique was utilized for recruitment. To address potential misunderstandings, a pilot interview adapted the questions to the local context. Ethical measures, including the use of local plant names, helped create a comfortable environment. The COVID-19 pandemic imposed additional challenges, halting fieldwork for two months and shifting group reflections to online platforms. Institutions were contacted for travel permits, resulting in remote interviews that limited direct observations [15, 16].

Data Collection Techniques

A descriptive cross-sectional study was conducted among HIV-positive persons attending three health centres in Lesotho's four districts. These health centres are based in the Maputsoe urban area in the Leribe district, the Hlotse urban area in the Leribe district, and the Thaba-Tseka hospital in the Thaba-Tseka district. A three-stage stratified random sampling technique was used to select participants. The sample size was calculated using the Fisher formula for single population proportion was 392. The selection and recruitment of study participants was conducted from April to June 2015. Data collectors who comprised three trained field workers and the principal investigator conducted face-to-face interviews using a pretested structured questionnaire. HIV-positive people were asked open-ended questions regarding the medicinal herbs that they use to address HIV/AIDS. Data were coded, then manually entered and cleaned. After data collection, it was cleaned and checked for completeness. Series of frequency tables were used to summarize participants' socio-demographic and clinical variables. Data variables on the medicinal herbs used, frequency of use, uses by the participants, parts of plants used and the method of preparation were also tabulated. Clinical variables were summarised using percentage. Tables, graphs and figures were used to present these data. Data was cleaned and checked for completeness. The participants' socio-demographic and clinical variables were summarised using frequency tables. Data variables for the medicinal herbs used, frequency of use, uses by the participants, parts of plants used and the method of preparation were also tabulated. The research proposal was submitted and approved by the institutional ethical review board of the Faculty of Health Sciences and the relevant authorities in Thaba-Tseka and Leribe regional health offices and by the management of the three health centres. The Principal Investigator (PI) introduced and explained to the participants the background, purpose and significance of the study, method of study, procedure, risks and benefits of

participation in the study. Participants were assured of confidentiality and of their right to participate or withdraw from the study at any level without penalty. Participants who agreed to participate in the study signed a consent form. A total of 392 HIV-positive respondents had been interviewed, which translates to a response rate of 100% [17, 18].

Data Analysis Methods

Data was cleaned and checked for completeness. The participants' socio-demographic and clinical variables were summarized using frequency tables. Data variables for medicinal herbs used, frequency of use, uses by the participants, parts of plants used and the method of preparation were also tabulated. Participant-wise use by each of the herbs was tabulated and illustrative quotes from participants were selected to illustrate the quantitative findings. Ethnobotanical data was quantified by means of relative cultural importance index and preference rank index. Cultural preference was evaluated using semi-structured interviews and PRIs were calculated. PRIs were calculated for quantitative analysis as per the formula: Preference rank index (PRI) = Rn/N, wherein n = the rank of preference given to each herb by the respondent, and N = number of informants. Ethno-clinical significance of MP use was explained by the proportion of respondents citing it for each indicator, and its ranking was calculated by means of the relative cultural significance index. Data was coded by label and name for cross analysis of quantitative data. Qualitative data was transcribed with prefigured labels for cross comparison. The thematic approach guided data analysis, allowing for the identification of themes through coding text segments in relation to study aims. A deductive-inductive approach was applied, running initial codes with a priori themes, bringing new, emergent themes with further coding. The themes were distilled down to major categories and presented in the findings. Trustworthiness was assured through familiarization, peer debriefing, notes of analysis and allowing informants to validate interpretations [19, 20].

Findings

The focus in this study is on gender as a variable influencing the use of medicinal plants for HIV treatment in reproductive health services in the Hhohho region of Swaziland. The findings from the research are divided into six main parts based on the objectives, which include the integration of medicinal plants in HIV services by health professionals, the availability of HIV treatment information, the access to HIV treatment services, and the use of HIV treatment services. It was found that health professionals' integration of medicinal plants in HIV services is influenced by the desire for better treatment and the arrangement of clinical trials between traditional practitioners and the Ministry of Health. Despite the majority of health professionals indicating the availability of HIV treatment information in all hospitals and clinics, there was a lack of availability of information in vernacular languages. Consequently, access to HIV treatment services is missing because clinics are not accepting patients for sexual health treatment. The findings further indicate that women are more likely to talk to traditional practitioners and that women sought treatment from traditional practitioners and voluntary counseling and testing sites. In addition, findings indicate that women visit health facilities at a greater percentage than men, and that access to health facilities, privacy, and confidentiality both facilitate and obstruct their use. Despite not formally requesting treatment from HoH clinic, women still receive treatment. Ultimately it appears that differentials in access to HIV treatment are more contextually related to gender than clinic. Differences in access to treatment are primarily concerned with the ways treatment is sought at local sites, managing the agency of local practitioners, creating a hierarchy of practitioners based on treatment efficacy, and valuing doctors more than traditional practitioners. Similar gaps in HIV treatment access have also been reported in other HIV endemic settings. This indicates a need for policy improvements to be inclusive, and to promote a culture that values the use of both medicinal plants and biomedicine in HIV treatment [21, 22].

Discussion

This extensive study meticulously explored the intricate dynamics of how gender influences the utilization of medicinal plants for the treatment of HIV in the Makoni district of Zimbabwe. It provides significant insights into the various plant species that are utilized, their specific recipes, potential side effects, and even their magical uses as understood by the local communities. The findings reveal a fascinating trend where HIV-positive individuals engage with a diverse range of plants, with males reporting a notably higher number of species employed than their female counterparts. Interestingly, the study highlights an inverse correlation between the knowledge of these medicinal plants and the number

of years since an individual's diagnosis. This suggests that older patients are more informed about the plants and their uses, reflecting a depth of traditional knowledge acquired over time. Moreover, plant usage had a noticeable impact on the frequency of hospital visits among these individuals; however, it is worth noting that the overall medicinal plant usage remained relatively unchanged over the course of time being observed. Certain species and their respective recipes exhibited variations, indicating a dynamic relationship between traditional practices and contemporary health challenges. The findings underscore the undeniable significance of traditional medicines within the local healthcare framework and highlight the urgent necessity for comprehensive support systems for individuals who depend on these vital treatments. An impressive over 50% of study participants confirmed their use of plants specifically for HIV treatment, with the average number of species utilized exceeding five, which is quite remarkable. This study stands out as the first of its kind to describe these medicinal plants and their detailed recipes on a global scale, showcasing the complexity involved in the plant mixtures and their intricate preparations. Such extensive knowledge not only emphasizes the importance of documenting both the various plants employed and the unique combinations they come in but also signifies the potential presence of active compounds in these mixtures that warrant further scientific investigation [23, 24].

Case Studies

A survey was conducted in Livingstone to explore plants used by traditional healers for managing HIV/AIDS-related diseases. This study included an ethnobotanical survey and quantitative analysis of data, aiming to document the plants utilized by traditional healers and potentially discover new drugs to support pharmaceutical treatments. The research was crucial in preserving traditional knowledge amidst urbanization and Western influences. It sought to provide insights into traditional plant medicines while paving the way for bioassay screening of these plants for efficacy against HIV/AIDS, potentially leading to collaborations with healers to identify bioactive compounds as anti-HIV agents. Thirty traditional healers were consulted, of whom only eight were female, with an average age of 48. Approximately 70% of the knowledge holders acquired their medicinal plant information from older relatives. Only six healers had apprentices, indicating a limitation in the transfer of knowledge. In total, 94 plant species from 39 families were reported by nineteen knowledge holders for treating HIV/AIDS in Southern Province, Zambia. The most commonly represented families included Fabaceae (22%), Combretaceae (9%), Euphorbiaceae (6%), and Lamiaceae (5%). The parts of plants most frequently used were leaves (33%), roots (25%), bark (22%), and stems/stem barks (20%). Further research was conducted in Lesotho to document medicinal herbs and their compositions used for HIV/AIDS treatment by collecting oral data from knowledgeable HIV-positive individuals. This aimed to confirm the efficacy of these herbs, uncovering details about their sources, usage, and any adverse effects noted. A total of 49 medicinal herbs were documented, with 25 confirmed; others need sample specimens for verification. Local perceptions of medicinal herbs reflected a preference for traditional knowledge, despite modern medical advances. Additionally, the topic of HIV status was sensitive, restricting discussions about the interaction between herbal remedies and ARVs to trusted individuals. The value of traditional healing practices persists despite the development of antibiotics since 1928, illustrating the enduring belief in the efficacy of medicinal herbs [25, 26].

CONCLUSION

This study underscores the critical role of gender in shaping the use and understanding of medicinal plants among HIV-positive individuals in Lesotho. Women, traditionally perceived as primary caregivers, possess deeper ethnomedicinal knowledge and are more frequently engaged in the collection and use of herbal remedies. Men's participation, while less visible, reveals complex sociocultural dynamics, including stigma and traditional gender expectations. The findings highlight a pressing need to include gender-sensitive frameworks in healthcare strategies that incorporate or address traditional medicine. Moreover, the continued use of herbal treatments alongside ART calls for rigorous scientific evaluation of their safety, efficacy, and potential interactions. Empowering communities with accurate information and culturally attuned public health education, particularly around gender dynamics, can improve health outcomes and ensure the responsible integration of traditional and modern treatment modalities in the management of HIV/AIDS.

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