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Older Adults' Narratives of Self-Care Using Steam Inhalation During COVID-19 Pandemic in KwaZulu-Natal Province, South Africa

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Abstract: *Background:* Self-care is an important concept in public health. As there is no cure for COVID-19, symptomatic treatment is encouraged. South Africans have been practicing self-care using steam inhalation as an indigenous health practice to successfully treat respiratory infections. Older adults are vulnerable to COVID-19 but are also indigenous health knowledge holders. The study examines the use of steam inhalation as self-care practice during COVID-19 by older adults. *Methods:* This qualitative study used secondary qualitative data from 87 interviews with 26 older adults. Ten transcripts met the inclusion criteria and were analysed thematically. *Results:* Four themes and eight subthemes emerged revealing older adults of 61–75 years asserting their self-care practice of steaming with herbs, encouraging their families to steam, continuing with their chronic medications and getting relieve from respiratory symptoms. They shared their believes in steam inhalation as an acceptable self-care practice to promote health and well-being. *Conclusions:* Older adults are indigenous knowledge holders who use steam inhalation as self-care practice to promote health and well-being. Steaming is an acceptable self-care practice which should be promoted.

Keywords: geriatrics; indigenous health practices; self-care; steam inhalation

1. Introduction

Self-care is an important concept in public health as it relates to individuals, families and communities being empowered to take care of themselves in preventing diseases, promoting and maintaining their health, and coping with diseases and disability with or without the support of a health professional [1–3]. Godfrey et al [4] describe self-care as a continuum starting with caring for oneself without involving a health professional to a gradual and increased involvement of a health professional. Self-care has positive consequences for individuals, families, and communities such as an increased coping and control of symptoms leading to an increased quality of life. The health system also benefits when individuals, families and communities practice self-care as scare resources are released from serving people who care for themselves, to serve the most vulnerable members of the population [3]. There are, however, negative consequences of self-care when people delay or even fail to consult a health professional due to a mistaken belief that self-care alone is sufficient. The health system should therefore empower people who practice self-care to know when they should involve a health professional to prevent the negative consequences of self-care. Knowledge of when to involve a health professional during self-care requires an ability to differentiate between self-treatable health conditions and conditions that require the intervention of health professionals.

Self-care practices are many, and they include disease prevention, self-diagnosis, self-treatment, and self-management of different conditions as well as the adoption of good hygiene and positive behavior change practices [5]. Throughout history, people have been practicing self-care, but the COVID-19 pandemic brought self-care to the fore [6]. Steam inhalation is one of the renown self-care practices that became popular and widely used during COVID-19 pandemic. It involves simple inhalation of the steam from boiling water to inhaling steam from boiling water in which medicinal

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substances have been added [7,8]. The popularity and wide use of steam inhalation came about as COVID-19 was initially classified as a respiratory tract infection [8–11]. As there was no known cure for COVID-19 when it started, the National Department of Health in South Africa encouraged people to use preventive measures and treat symptoms when they were infected [12]. These resulted in dependence on self-care practices, and indigenous medicines suggested by people or groups in communities as well as by some religious groups [13,14]. As steam inhalation is one of the indigenous self-care practices in South Africa and in many other countries [15–17], it is logical that some older adults resorted to it when confronted with COVID-19 pandemic.

Older adults have valuable experiences and accumulated wisdom in raising families and in various skills of life, as such, older adults are useful members of societies [18]. They strengthen the health system by conveying indigenous knowledge about disease prevention and health promotion which facilitates the adoption of beneficial self-help practices by the society [19]. Older adults are, however, impacted negatively by COVID-19 pandemic than any other age group [20–22], it is therefore important for them to apply self-care practices to preserve their own health and wellbeing so they can continue to serve societies [18]. It was, therefore, important to conduct this study to explore and describe how older adults from KwaZulu-Natal province in South Africa narrated their use of steam inhalation as self-care practice during the COVID-19 pandemic.

2. Materials and Methods

2.1. Study Design

This study is a secondary data analysis type of a qualitative research adopting a qualitative descriptive design. Secondary data analysis is a study which uses data collected for a primary study to explore new research questions or use different analysis strategies that were not a part of the analysis in the primary study [23]. A secondary data analysis study is useful as it generates new knowledge while minimising data collection costs, eliminating challenges of poor response rate and relieving participants from the burden of participation. There are, however, limitations of secondary data analysis such as limited understanding of the context as the researcher was not involved in the primary data collection. Furthermore, the researcher uses interview data as it is, with no opportunity to probe for more information [24–26].

This study used secondary qualitative data obtained through FigShare (https://figshare.com/articles/dataset/Interviews_data_matrix/19738477?file=35067763) from Africa Health Research Institute (AHRI) research data repository in KwaZulu-Natal, South Africa. AHRI conducted a longitudinal study using semi-structured interviews over a period of six months from 1 October 2020 to 31 March 2021 at its Population Intervention Programme Demographic Surveillance Area, in uMkhanyakude District, KwaZulu-Natal province to collect primary data. Participants were selected randomly based on the age criteria and access to a mobile telephone. An effort was made to ensure fairness in including participants from all areas of the uMkhanyakude District. Interviews were conducted by telephone because of restrictions on face-to-face contact during the COVID-19 pandemic and were recorded digitally.

2.2. Ethical Clearance

The National Health Research Ethics Council indicates that, in a secondary data analysis, it is important to clearly describe the steps followed to obtain ethical clearance and informed consent in the primary study [27]. Ethics approval for the primary study (BREC Ref No: 00001642/2020) was given by relevant committees and participants gave informed consent [28,29]. Furthermore, details of participants were anonymized and replaced with a unique identity number to ensure confidentiality. Ethical clearance for this secondary analysis study was obtained from an ethics committee at Sefako Makgatho Health Sciences University (Ethics Reference No: SMUREC/M/376/2024:IR on 19 September 2024).

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2.3. Data Collection and Sampling

The dataset obtained from FigShare contained qualitative data from 87 interviews with 26 older adults being 11 men and 15 women between 61 and 88 years. Collection of secondary data was guided by the aim of the study which was to explore and describe self-care practices by older adults during COVID-19 pandemic in KwaZulu-Natal, South Africa. The dataset shows that of the 26 older adults interviewed, only 10 narrated their use of steam inhalation as self-care practice during COVID-19 pandemic and thus they became the focus of this study.

2.4. Data Analysis

The study used qualitative content analysis and thematic analysis both of which are suitable for studies using a qualitative descriptive design to analyse textual data and reveal themes [30]. As Lochmiller [31] and Lester et al [32] suggest, the small size of the dataset used for this study did not require analysis to be guided by a theoretical or conceptual framework, thus inductive analysis was used. Inductive analysis involved an iterative and systematic process of familiarization with the data by reading the transcripts, reflecting on the data, coding, and formulation of themes as suggested by Vaismoradi et al[30] and Bingham [33].

3. Results

3.1. Demographic Characteristics

According to Korstjens and Moser [34], demographic characteristics provide context to data analysis and reporting of results. A detailed description of demographic characteristics makes participants' narratives meaningful. Results show that 10 older adults narrated their use of steam inhalation as self-care practice during COVID-19 pandemic in uMkhanyakude District, KwaZulu-Natal province of South Africa. Their age and gender are summarized in Table 1 below.

Table 1. Demographic characteristics of participants.

Participant	Gender	Age
1	Female	71
2	Female	63
3	Female	62
4	Female	61
5	Female	65
6	Male	75
7	Male	67
8	Male	61
9	Male	66
10	Male	69

3.2. Themes and Subthemes

Summarizing findings in tables helps to condense and organise them and communicate them in an easy-to-understand manner [35]. In this study, findings from the interviews are presented as four themes and eight subthemes which are summarized in Table 2 below and described in detail in the paragraphs that follow.

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Table 2. Themes and subthemes.

Theme	Subtheme
Using steam inhalation as self-care practice during the pandemic	Assertion of using steam inhalation as self-care practice during the pandemic Using steam inhalation as self-care while living with chronic medical conditions Frequency of using steam inhalation as self-care during the pandemic
Reasons for using steam inhalation as self-care practice during the pandemic	Use of steam inhalation as accessible self-care practice during the pandemic Use of steam inhalation as self-care to protect the body from infections during the pandemic Steam inhalation is an effective self-care practice
Medicinal substances used for and with steam inhalation as self-care practice during the pandemic	Medicinal plants used for and with steam inhalation as self-care practice during the pandemic Other substances used for and with steam inhalation as self-care practice during the pandemic
Family support for using steam inhalation as self-care practice during the pandemic	

3.2.1. Theme 1: Self-Care Using Steam Inhalation During the Pandemic

Older adults asserted using steam inhalation as self-care practice during COVID-19 pandemic where some used it daily while others used it on alternate days. To assert is to state something clearly and strongly showing confidence [36]. An older adult living with diabetes mellitus (DM) asserted using steam inhalation as self-care practice while another living with hypertension used it, but later refrained from using it as it caused some discomfort. The two subthemes below describe olde adults' use of steam inhalation as self-care during the pandemic.

- Assertion of using steam inhalation as self-care practice during the pandemic

Some older adults asserted that they and members of their families used steam inhalation during the pandemic. A 66-year-old older man who was staying with his wife, children and grandchildren narrated:

"We were really steaming… all of us including the children and grandchildren".

A 62-year-old older woman who used steam inhalation but later refrained due to living with a chronic medical condition added: *"My husband steams".*

- Self-care using steam inhalation while living with a chronic medical condition

An older adult living with hypertension and another living with DM asserted their use of steam inhalation as self-care. The one living with hypertension found steam inhalation causing some discomfort while the other living with DM practiced steam inhalation without experiencing serious discomfort. A 62-year-old older woman living with hypertension said:

"I do not steam because I have hypertension, so my heart just beats fast when I steam".

On the other hand, a 67-year-old older man whose wife was living with DM said: "…even my wife who is on treatment (for DM), sometimes she would catch flu then I would recommend that she takes eucalyptus leave and steam. After steaming she recovers completely."

- Frequency of using steam inhalation as self-care practice during the pandemic

Some older adults used steam inhalation as self-care practice regularly during the pandemic while others used it at times. A 69-year-old older man who was staying with his wife and a domestic worker said this about their frequency of using steam inhalation:

"We are doing steaming occasionally; we are not doing it all the time".

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Another older man of 75 years added: "I do not steam every day like how people do …they steam every day. I steam today, I skip the next day and steam the following day or sometimes I skip two days then on the third day, I steam".

A 61-year-old older woman shared how members of her family were smelling of a medicinal plant used for steam inhalation as they steamed regularly by saying: *"We are smelling of umsuzwane (traditional herb to cure flu), it is working, you do it today and the following day".*

3.2.2. Theme 2: Reasons for Using Steam Inhalation as Self-Care During the Pandemic

Some older adults narrated their reasons for using steam inhalation as self-care during the pandemic. They described steam inhalation as an accessible and effective self-care practice to protect the body from infections. The three sub-themes below describe their reasons for using steam inhalation as self-care.

- Use of steam inhalation as accessible self-care practice during the pandemic

Some older adults used steam inhalation as self-care practice because there were no other forms of treatment accessible during the COVID-19 pandemic while others used it for its known effectiveness in treating and protecting the body against infections. A 66-year-old older male living with his wife, children and grandchildren said:

> "*There is no help received regarding health that was special during that time…except for the help we were doing for ourselves, we were steaming*".

Another older male of 61 years added by sharing how members of his family encouraged each other to care for themselves: *"In my household, we were encouraging one another to steam".*

A 61-year-old older woman shared how her children encouraged her to care for herself by saying: *"…my children call me; they tell me that I must steam myself".*

- Use of steam inhalation as self-care practice to protect the body from infections during the pandemic

Some older adults narrated how they used steam inhalation as self-care to strengthen their bodies against infection. A 63-year-old older woman said: *"…sometimes I steam to keep my body warm, you see… because we heard that this disease is against hotness".*

Another older woman of 65 years added: "I steam with lippia javanica (fever-tea-tree) and eat onions. I take any traditional medications that they advise me to take to prevent infection."

- Steam inhalation is an effective self-care practice

Some older adults indicated that they used steam inhalation because it has been an effective self-care practice in treating respiratory tract infections even before COVID-19 pandemic. A 67-year-old older male said:

> *"It really helps, it really helps because even my wife who is on treatment (for diabetes), sometimes she would catch flu then I would recommend that she takes eucalyptus leave and steam. After steaming she recovers completely".*

A 61-year-old older woman who was steaming with a medicinal plant and believed it was effective added: *"We are smelling of umsuzwane; it is working."*

3.2.3. Theme 3: Medicinal Substances Used for and with Steam Inhalation as Self-Care Practice During the Pandemic

Some older adults used medicinal plants for steam inhalation while others used over the counter (OTC) medicinal substances. The various substances used are described in the two subthemes below.

- Medicinal plants used for and with steam inhalation as self-care practice during the pandemic

Some older adults named the various medicinal plants they used for and with steam inhalation during the pandemic. A 71-year-old older woman named three medicinal plants she used by saying:

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> *"My son came and prepared umhlonyana, I steam with it and umsuzwane like that, and I also use gumtree for steaming".*

Another older woman of 65 years added: "I steam with lippia javanica and eat onions".

Another woman of 65 years said: *"My husband uses mint leaves".*

A 67-year-old male added: "…sometimes she would catch flu then I would recommend that she takes eucalyptus leave and steam".

- Other substances used for and with steam inhalation as self-care practice during the pandemic

Some older adults narrated that they took anything they believed would strengthen their bodies and prevent infection during the COVID-19 pandemic. These include medicine prescribed by health practitioners and OCT medicinal substances. An older adult narrated taking treatment prescribed for DM, another took flue pills bought over the counter and mentioned eating onion. A 65-year-old older woman said:

> *"My children bought me flu pills then I just steam with umsuzwane, and I felt better. I steam with lippia javanica (fever-tea-tree) and eat onions. I take any traditional medications that they advise me to take to prevent infection"*

A 67-year-old man said: "…even my wife who is on treatment, sometimes she would catch flu then I would recommend that she takes eucalyptus leave and steam"

3.2.4. Theme 4: Family Support for Using Steam Inhalation as Self-Care Practice During the Pandemic

Some older adults narrated how they encouraged and supported each other within their families to use steam inhalation as self-care practice during the pandemic. An older woman of 71 years narrated the support from her son:

> *"...my son came and prepared umhlonyana, I steam with it and umsuzwane like that, and I also use gumtree for steaming".*

Another older woman of 61 years added: "…even when my children call me, they tell me that I must steam myself".

An older man of 61 years added: "In my household, we were encouraging one another to steam".

Another older man of 67 years further added by narrating that he encouraged his wife to use steam inhalation: "…even my wife who is on treatment, sometimes she would catch flu then I would recommend that she takes eucalyptus leave and steam".

4. Discussion

Older adults asserted using steam inhalation as self-care practice during COVID-19 pandemic where some used it daily while others used it on alternate days. As people in Africa and other continents have been using steam inhalation as self-care practice for many years to maintain their health and wellbeing through all the stages of life and thereby sustaining themselves [11,16,37,38], it is logical that they continue with self-care using steam inhalation during the COVID-19 pandemic. Some older adults living with chronic medical conditions used steam inhalation while others refrained. Studies show that steam inhalation is helpful for people living with diabetes as it can decrease the level of glucose in the blood [39], furthermore, steam inhalation can also lower blood pressure [8]. It was therefore rational for an older adult living with DM and the one living with hypertension to use steam inhalation as self-care practice during the COVID-19 pandemic.

Some older adults narrated their reasons for using steam inhalation as self-care during the pandemic. They described steam inhalation as an accessible and effective self-care practice to protect the body from infections. Some participants used steam inhalation as there were no other forms of treatment accessible during the pandemic. Lockdown restrictions, fear by healthcare users of getting infected and prioritization by healthcare providers of patients with COVID-19 let to limited access by healthcare users to health services in both the private health services and public health services in

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South Africa [40–42]. Some older adults used steam inhalation for its known effectiveness in treating and protecting the body against infections. Others described steam inhalations as effective in treating respiratory infections even before the pandemic while others narrated that steam inhalation strengthens their bodies against infection. As there were no known medical cures for COVID-19 during its early stages, many people across the world relied on indigenous knowledge and used steam inhalation, gargling and other self-care practices [10,17]. Steam inhalation is effective in relieving symptoms of respiratory tract infections such as fever, cough, malaise, and nasal congestion. This has been established through oral stories shared by indigenous people as well as through randomized controlled trials and review articles [8,10,17,43].

Some older adults used medicinal plants for steam inhalation while others used over the counter (OTC) medicinal substances. Steam inhalation is an established practice of inhaling steam from boiling water, and it is common for people to add medicinal plants and other substances such as honey to the boiling water [8]. As medicinal plants are used in all provinces of South Africa [44,45], some older adults, using different local languages such as English, isiXhosa and isiZulu, named umhlonyana, umsuzwane, gumtree, eucalyptus leave, mint leaves and lippia javanica as the medicinal plant they used for steam inhalation. Gumtree, mint, umhlonyana and uMsuzwane (lippia javanica) are popular medicinal plants in many countries used to treat, among others, respiratory tract infections [46–50]. Their use increased during the COVID-19 pandemic as COVID-19 presented with symptoms like those of respiratory tract infections [8,9].

Some older adults took anything, including prescribed medicines, medicinal herbs and OTC medicine, they believed would strengthen their bodies and prevent infection as self-care practice. The practice of taking prescribed medicine together with medicinal herbs and OTC medicine is common and it is called medical pluralism or the mix and match approach. Users take their prescribed medicine and choose what else to use from indigenous medicine and OTC medicine [51,52]. An older adult related taking treatment for DM while another took flue pills and stated eating onions as well. An onion is a vegetable and a medicinal plant that has been used by many indigenous people for treatment of several conditions such as, respiratory infections, cardio-vascular disorders and DM [53]. Taking medicinal substances, even those whose effectiveness is unproven, could be due to fear of contracting COVID-19 and dying, and misinformation which were prevalent during the pandemic [54,55]. Studies show that COVID-19 has a higher mortality rate in older adults with comorbidities of hypertension and DM than in younger people [56,57].

Some older adults narrated how they encouraged and supported each other within their families to use steam inhalation as self-care practice during the pandemic. Family encouraged and supported each other to use and benefit from steam inhalation because there is ubuntu in South Africa which makes people to unite and support each other within their families and communities in times of crisis [58–60].

5. Conclusion

This secondary analysis study reveals that older adults, as indigenous knowledge holders in South Africa, used steam inhalation as self-care practice to promote health and well-being before, during and post COVID-19 pandemic. They share this knowledge with their families and encourage each other to practice self-care. They regard steam inhalation as an acceptable, accessible and effective self-care practice within their community and it should be promoted. Steam inhalation can be used by people living with some chronic conditions if they feel comfortable with it and should not stop taking medications prescribed by health professionals. Depending on personal preferences, medicinal plants or over-the counter medicinal substances can be added to boiling water and the steam gets inhaled.

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY (protocol code SMUREC/M/376/2024:IR on 19 September 2024).

Informed Consent Statement: Not applicable as the author used secondary data obtained from FigShare, as such, the study does not involve direct contact with human participants.

Data Availability Statement: The original data presented in the study are openly available in FigShare at https://figshare.com/articles/dataset/Interviews_data_matrix/19738477?file=35067763.

Conflicts of Interest: The author declares no conflict of interest.

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