



RESEARCH ARTICLE

REVISED The indigenous meaning of dysmenorrhea: using modified photovoice to document perspectives of traditional health practitioners (THPs) and indigenous knowledge holders (IKHs) [version 2; peer review: 1 approved, 1 approved with reservations]

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Abstract

Background: Globally, health understanding and beliefs vary across sub-cultural groups, depending on geographical location. Increasingly, various parts of the world recognize these perspectives to offer culturally sensitive healthcare services at primary level. Understanding the indigenous perspectives of dysmenorrhea meaning from the custodians of knowledge holders may add to the value of literature that may be used to advocate humanized culturally sensitive healthcare. This article aimed to explore and describe the perspectives regarding the meaning of indigenous dysmenorrhea among Batlokwa traditional health practitioners (THPs) and indigenous knowledge holders (IKHs).

Methods: A qualitative, explorative study with a modified photovoice design, which included photographs, interviews and lekgotla discussion was employed to engage THPs and IKHs residing in Botlokwa Limpopo province, South Africa. Initially, a purposive sampling technique was used to select the participants, followed by snowball sampling. The participants themselves analyzed the photographs and described their meaning during individual interview using the acronym "PHOTO". The researchers employed thematic analysis of interviews and Lekgotla discussion, in which themes were identified, formulated and analyzed from the codified data set.

Results: In total, eight women participated in the photovoice study. The findings showed that indigenous understanding of dysmenorrhea stems from the African belief about health and illness with special

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emphasis on importance of holistic meaning. To the THPs and IKHs dysmenorrhea was a broad and integrated trend of a normal or abnormal process of illness that occurs periodically during menstruation.

Conclusions: The THP's and IKH's indigenous meaning of dysmenorrhea reflects physical, mental, emotional, social, environmental, political and economic dimensions. Therefore, dysmenorrhea should be understood from a holistic approach. With appropriate partnerships and processes in place, this knowledge may be well represented in dominant healthcare systems and health research.

Keywords

Dysmenorrhea; Indigenous; Indigenous Knowledge Holders; Lekgotla discussion; Photovoice; Traditional Health Practitioners; South Africa



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REVISED Amendments from Version 1

The following changes has been made Introduction line 4, "literature view" changed to "literature review". Added a reference for sample size of 7-10 is ideal for a photovoice study, this automatically changed the referencing order from number 15. Last sentence of data collection added the language used during individual interviews and Lekgotla discussion.

Any further responses from the reviewers can be found at the end of the article

Introduction

Dysmenorrhea has been the focus of global public health efforts for many years now. Dysmenorrhea is common among women of reproductive age including adolescents and it is known to be the cause of pelvic pain during menstruation.¹ Although researchers have reported a general stabilization in the management of dysmenorrhea, it continues to affect a large number of women. A literature review conducted in 2016 to better understand the epidemiology of dysmenorrhea and its effect on public health in different countries revealed that the prevalence of dysmenorrhea varied from 34% to 94% depending on the country.² A survey that investigated the prevalence of menstrual disorders and its impact amongst Tshivenda speaking teenagers in rural South Africa reported that 61.27% of teenagers suffer from dysmenorrhea and 56.4% experience severe abdominal pains during menstruation.³ Although dysmenorrhea is a universal burden, the meanings and practices are different from culture to culture and society to society. However, the primary focus of understanding dysmenorrhea and interventions in this regard have been on Western ways. Indigenous meanings and healthcare are consistently identified as less likely to make sense. The indigenous meanings and healthcare system involve cultural health promotion, prevention of illness, treatment, and rehabilitation, it differs from the Western health system in its integral and holistic approach. Many communities, in South Africa had their own well-developed indigenous knowledge health systems that positively enhance the understanding of illnesses such as dysmenorrhea. Indigenous knowledge has a significant influence in health-related beliefs and practices.⁴ This knowledge forms an integral part of the health care history in South Africa.⁵ The Protection, Promotion, Development and Management of Indigenous Knowledge Act 6 of 2019 in South Africa provide access of this knowledge to indigenous communities.

Among those who have knowledge of indigenous healthcare in South Africa are traditional health practitioners (THPs) and indigenous knowledge holders (IKHs). The THPs and IKHs are commonly known to be the custodian holders of indigenous knowledge. They also have a particular value of wisdom and influence in issues that are of indigenous health care.⁶ Accordingly, they are commonly consulted privately to establish the origins of illnesses and prediction of treatment success, especially as a first line of care or when western medicine is failing.

It can be argued that the multicultural beliefs and practices make it necessary to explore and understand the perspectives in dysmenorrhea meaning, as it might offer insights that have been neglected by the Western health care system. Understanding indigenous perspectives of dysmenorrhea meaning from its practitioners is a high priority for individuals, communities, healthcare systems and government because it might provide effective ways to deal with illnesses and health promotion at the primary healthcare level. Moreover, the National Department of Health (NDoH) in South Africa has taken firm steps in transforming and recognizing indigenous health since the end of apartheid.⁷ Currently few studies have explored the indigenous perspectives of dysmenorrhea.⁸⁻¹⁰ Further, none of the studies have provided comprehensive information on the indigenous meaning of dysmenorrhea in which THPs and IKHs as indigenous knowers were co-researchers. Thus, women who prefer indigenous knowledge health systems can experience barriers in receiving this care if it not known and documented. A study conducted in 2017 indicated that a lack of knowledge and acceptance of indigenous healthcare disadvantages many people from accessing culturally sensitive healthcare.¹¹

Developing understanding and acknowledging dysmenorrhea meaning from the perspectives of Batlokwa THPs and IKHs has the potential to serve as a basis for future research. This in return may lead to formulation of partnerships with indigenous health practitioners, and may contribute to development of strategies, protocols, processes, and cultural appropriate intervention programs to improve women's health services. Therefore, the purpose of our study was to better understand and document indigenous perspectives of dysmenorrhea meaning among Batlokwa THPs and IKHs.

Methods**Research design**

Qualitative research using a photovoice design was used to gather and explore the social and personal meanings that Batlokwa THPs and IKHs ascribe to dysmenorrhea. Photovoice is a qualitative method to be used within community based participatory research.¹² It positions participants as co-researchers since they are involved in taking photographs and making sense out of them. It is also of value when the issue under study is sensitive and involves vulnerable groups such as indigenous or traditional women. Photovoice entails the participants taking photographs, assign meanings to their

photographs during individual interviews and/or group discussions. Participants become directors or coresearchers and speak through photography.^{13,14}

Study site and participants

The research was conducted in Botlokwa a small village located in Limpopo province, South Africa. The village primarily consists of the Blacks, dominated by the Batlokwa ethnicity group. The recruitment was done through the local authority gatherings, placing posters in public areas and presentations in women gatherings. Eligibility criteria included 18 years and above Black women, Batlokwa ethnicity group, residing in Ga-Ramokgopa village Limpopo province, known in the community as THPs or IKHs. The study excluded all the women who were still undergoing training to be THPs and the THPs that are from other regions, provinces, and foreign countries.

The first step in the sampling was to purposively select the women who contacted the researcher and agreed to participate in the study. The snowball technique was used to further identify potential participants through the informed network and recommendation of the women who were already recruited by the researcher. They directed the researcher to others whom they knew and trusted as genuine IKHs of dysmenorrhea and treatment modalities. This referral process continued until the researchers had reach sample size of 15 participants who showed interest in the study and met inclusion criteria. However, three did not come for the photovoice training session and four did not hand back cameras and photographs even after several reminders. Therefore, only eight THPs and IKHs took part. The size of the study sample was estimated based on the fact that 7 to 10 participants are ideal group size for any photovoice study to allow practical ease and in-depth discussion.¹⁵ The main reason for using both purposive and snowball sampling was that the number of IKHs in South Africa is not known. In addition, to gain access to their knowledge one has to rely on those who consented to assure others that the study meant no harm to their knowledge.

Data collection

Data was collected through photographs, individual interviews and lekgotla discussion and lasted for 6 months between May and November 2018. Four stages of photovoice were followed; First session was a brainstorming and photograph taking training, which took place with individual participant in their own homes until they are competent. The session was to familiarize the participants with the research topic, reasons for the study and photograph taking technique; 2): Taking photographs – When the researcher was satisfied that the participant could use and was able to take photographs, each was handed a 27-exposure disposal camera. Thereafter, the researcher revised the usage instructions with the participant. The participants were then directed to take pictures of anything related to indigenous perspectives of dysmenorrhea for four weeks. For example, environment, objects, symbols, plants, people. They were advised to refer to the guiding questions when choosing things to photograph, to avoid taking photos of people without their consent, and hide people's faces; 3): Individual interviews – To attach meaning to own captured photographs, a principal researcher (MMR), who is a female, Nurse lecturer and PhD student conducted individual interviews in different settings convenient to participants. Most participants preferred their own homes. A female research assistant (psychologist and PhD student), helped in taking field notes. Both principal researcher and research assistant were experienced in conducting individual interviews, maintaining confidentiality for the research study, and interested in women's health. Interviews lasted 40 to 120 minutes and audio recorded only if the participant gave consent. Each interview was guided by questioning acronym "PHOTO".¹⁶ which made questions to be consistent in meaning across 8 participants without follow-up interviews; 4) Lekgotla discussion – One lekgotla discussion which is an open forum in which indigenous community members in Sub-Saharan Africa use to debate and reach agreements on raised issues¹⁷ was conducted with same eight participants and a research assistant. The discussion lasted for five hours and was audio recorded. Field notes were also taken. The individual interviews were conducted in both English and local language as preferred by each participant. The Lekgotla discussion was only conducted using the local language. The local language was only translated to English after been transcribed. All study materials can be found as extended data.³⁸

Ethical considerations

Ethical approval to conduct the study was obtained from the university of Pretoria, faculty of health Ethics Committee, Ref 20/2018. Permission from local authority leadership was obtained in order to affirm the relevance of the current research and to ensure that the research was conducted in ways appropriate to local customs. In addition, the participants provided written informed consent prior to taking part in the study.

Data analysis

Data analysis was done concurrently with individual interviews. During the interviews the photographs acted as "codes" that represented the participants' perspective descriptions of dysmenorrhea. No software was used to analyze data. Analysis of the individual photographs was left solely at the discretion of the participants during individual interviews, guided by questioning the acronym "PHOTO".¹⁶

- What is in this **photo** related to indigenous meaning of dysmenorrhea/describe the activities on dysmenorrhea in this **photo**?
- What is **happening** in this photo related to indigenous meaning of dysmenorrhea knowledge?
- How does a photo **of** this object link to indigenous meaning of dysmenorrhea?
- What does this photo **tell** us about indigenous meaning of dysmenorrhea?
- How does this photo provide **opportunities** to understand indigenous dysmenorrhea?

When analyzing photographs, participants used words to explain further and effectively communicate their thoughts, and to stimulate discussion among themselves and the researcher. The researcher was guided by the information provided by the participants to ask more questions. After each individual interview, the principal researcher manually documented the emerging ideas from the narratives and stories recorded alongside the notetaking in a table created to organize and manage data. Thereafter, the ideas were compared and synthesized to form themes and sub-themes.

During Lekgotla discussion, all the photographs discussed during individual interviews were re-analyzed again with all the participants present to confirm and identify more themes and gaps. Analysis of the photographs as data involved the group discussing possible meanings, referring to the research question. The researchers and participants reviewed photographs and stories to assess the congruency between the two and contextualize selected photographs by providing details and meaning of the photographs alongside their stories in relation to the Batlokwa cultural beliefs and practices. The significant statements identified regarding dysmenorrhea were listed and grouped according to similarities in patterns of ideas and associations. In the process, the participants chose the photographs that best represented the main themes. Thereafter, it was discussed how these photographs may contribute to the knowledge of indigenous dysmenorrhea among the Batlokwa ethnicity.

The researcher clustered all the selected photographs (24) into various groups, according to what was seen on the photograph, such as plants, animals, environment, person, and other objects. This exercise formed unique clusters with overlapping groups of associations that helped the researcher to develop, connect and discuss themes from the photographs to form the indigenous perspectives of the dysmenorrhea meaning among Batlokwa women. In addition, all authors examined photographs and attached meanings extracted from the interview transcripts to confirm themes related to dysmenorrhea meaning. Thus, audio recordings and field notes assisted in identifying keywords and phrases related to indigenous perspectives of dysmenorrhea meanings. Thereafter, the researchers classified IKHs and THPs photos and context according to concepts identified in the individual interviews and modified Lekgotla discussion. The understanding was compiled into a report and given to the participants for review prior to dissemination.

Results

Women were the central participants in this study. The total number of women who participated were 08. Their ages were between 28 and 89 years old. They all have indigenous knowledge in treating dysmenorrhea at Botlokwa village, Limpopo Province. Three of the women were trained THPs, and five of them acquired indigenous knowledge through oral translation and observation either from the elders in the family or community or when they were treated for dysmenorrhea. [Table 1](#) outlines the demographic data of the participants.

Table 1. Demographical data of the participants.

| Age | Practice type | Years of practice | Educational status |
|----------|---------------|------------------------|----------------------------|
| 28 years | THP | 6 years | Teachers diploma |
| 33 years | IKH | 21 years | Teachers diploma |
| 47 years | IKH | 30 years | Administration certificate |
| 47 years | IKH | Unsure (Teenage years) | Social worker |
| 55 years | IKH | 20 years | High school level |
| 63 years | THP | 27 years | Retired nurse |
| 67 years | IKH | Unsure (Teenage years) | High school level |
| 89 years | THP | 53 years | Never schooled |

The data produced were rich descriptions and narratives that were oral and visual. The central theme that emerged strongly was *holistic understanding of dysmenorrhea meaning* and was associated to *process or journey connected to women health*, the description further *grouped women's health issues* together. The findings showed that the participants of Batlokwa ethnicity had their own point of view towards the meaning of dysmenorrhea, which is influenced by their cultural orientation.

Holistic understanding of dysmenorrhea meaning

The presented photographs and meanings attached revealed that Batlokwa women understand dysmenorrhea as a holistic illness. Dysmenorrhea is understood as not only a physical illness, but interdependent with mental, emotional, spiritual, social, economic, and environmental factors.

Participant #3: *“selumi” (dysmenorrhea) means that mind, body, emotion, spirit and environment are not balancing”*.

Participant #6: *“Dysmenorrhea is addressed within a holistic approach, we consider emotional, mental, spiritual, including the environment in which the woman comes from”*.

Participant #8: *“It is women reproductive system illness affecting body, mind, spirit, because our ways of healing look holistically at the body, mind and spirit”*.

Process or journey connected to women's health

In terms of dysmenorrhea as a process or journey, a photograph (Figure 1) was presented, which was interpreted as embarking on the health journey, but interrupted and distracted by physical and emotional pain throughout reproductive age or as a process that occurs over some time in the women's' lives. Participant #6: *“dysmenorrhea builds up with time, other parts of the women reproductive system are affected”*. Participant #2: *“when experiencing dysmenorrhea, we think of how long the person has been in this journey because symptoms increase with time”*.



Figure 1. Woman carrying luggage.

Drawing from [Figure 1](#), participant #1 said “*selumi ke leeto le bohloko!!!*” (dysmenorrhea is a painful journey!!!), “*poor woman is looking forward for the menstruation every month in preparation for falling pregnant, then what supposed to be a pleasant journey turn out to be a suffering*”.

Participant #7: “*Some of the women walk this road every month, taking a very painful journey for the sake of womanhood*”

In the lekgotla discussion the participants debated on how the process or journey of dysmenorrhea affects women emotionally. Participant #7: “*being unable to perform house chores because of “selumi” is depressing*”. Participant #3: “*thinking of the stigma attached to “selumi”, been labelled with names such as “moopa” (barren) really affects women emotionally*”.

On the other side, women talked about the process of dysmenorrhea in terms of it reoccurring. Participant #8: “*Well, “selumi” is a process, it reoccurs if not treated well. If not treated, it will remain a monthly journey*”. Participant #5: “*It continues throughout the reproductive age if not properly treated*”.

Grouping of women’s health issues

On the other vein, meaning of dysmenorrhea was influenced by the women reproductive system makeup. They viewed dysmenorrhea as inclusive to all other reproductive health issues. [Figure 2](#), a chain, emphasizes the connection of a women’s reproductive system. It conveys a strong sense of why and how dysmenorrhea is connected to other reproductive organs and connected to other women’s health issues. The arguments seemed to be rooted in cultural beliefs and practices.

Participant #2: “*I check the whole reproductive system to identify the root of dysmenorrhea including infertility*”.

Participant #6: “*With “selumi”, it means somehow the whole reproductive system is affected*”.

Participant #8: “*I think “selumi” eats up the lining of the uterus. It affects the whole reproductive system because the whole abdomen and back will be painful*”.

Metaphors of bridges and messengers were also used to better understand grouping of women’s health issues.

Bridge

The findings revealed that dysmenorrhea is not just a pain; it is seen as the bridge ([Figure 3](#)), linking the sufferer to other chronic pain conditions associated with woman’s reproductive system problems.



Figure 2. Chain.



Figure 3. Bridge.

Participant #1: *“Dysmenorrheal pain is not only from menstruation; it is linked to other women illnesses”.*

Participant #5: *“bridge emphasizes the connection between dysmenorrhea and other women’s health issues to reinforce holistic meaning”.*

Participant #6: *“The symbol of a bridge means move to the other side of reproductive system”.*

Messenger

The pain of dysmenorrhea was regarded as a message informing that there is something wrong with the woman’s reproductive system. They explained that dysmenorrhea is a message that the woman will be infertile in future or is already infertile. The logic here was that dysmenorrhea sends the message to the woman and family to seek help and correct complications of infertility early. The following phrases were extracted from the discussions: *“inability to have children”*, *“unable to fall pregnant”*, *“will not have children”*, *“childless”*, and *“moopa”* meaning barren (Participants #3, #7, #8).

The participants’ expressions of dysmenorrhea as a messenger for infertility were based on the following arguments: Participant #5: *“Indigenously when we treat women for dysmenorrhea, within a month or so the woman will fall pregnant, that’s how we discovered that dysmenorrhea was just a sign for infertility”.*

Participant #4: *“Look ... a woman will present with pain during menstruation, but when you do divination check (consulting ancestors), you find many reproductive health problems that are linked and related to what she is complaining about ... and all will complicate to infertility”.*

A couple of women talked about *“selumi”* being related to blocked fallopian tubes, sores in the womb (disturbing implantation), and untreated sexually transmitted infections. They believed that if all of these are not adequately treated, a sufferer would not fall pregnant. For instance, a photograph of a chained and locked padlock was presented and analyzed as a message that a woman is blocked from conceiving a baby (Figure 4). A knotted robe (Figure 5) was also presented as blocked tubes (noga e bofile).



Figure 4. Padlock.



Figure 5. Knotted rope.

Discussion

This paper offers insight into the indigenous meaning of dysmenorrhea from THPs and IKHs. The findings of this study support the notion that health beliefs and practices vary across countries, sub-cultural groups, and geographical location.¹⁸ Therefore, socio-cultural factors influence on how people understand their health issues and on how to treat them. Analysis of the photographs explored similarities and differences between objects or people portrayed by the

participants and complemented the interviews and thematic analysis.¹⁹ In a traditional Batlokwa ethnicity, THPs and IKHs understood dysmenorrhea as a holistic illness. During meaning-making, they used metaphors of process and journey to conceptualize dysmenorrhea as an illness that results from a woman reproductive system but show during menstruation. They also related and grouped dysmenorrhea with other gynecological problems.

Holistic understanding means that dysmenorrhea does not affect the physical being only, but also affects the emotional, spiritual, cultural wellbeing of the whole community and the environment.²⁰ The photographs taken were of woman carrying luggage, chains, padlocks, bridge and knotted robes. These photographs were to serve as visual descriptions, to back up the discussion on dysmenorrhea meaning. Connection of all these photographs and discussions were found essential in creating a relationship when making meaning of dysmenorrhea as a holistic illness. Physical symptoms of dysmenorrhea were connected to emotions, spirituality, culture, and the relationships they have with the land and centered on their belief that there should be harmony between all the elements.²¹ Notably, disharmony between the elements was understood as the cause of dysmenorrhea. Moreover, they argued that when one element is affected, care should be extended to the other elements (holistic) to re-establish harmony. The findings further, showed that although symptoms of dysmenorrhea are predominantly physical, Batlokwa are not content with the physical illness of the body only but include emotions and spirit. The relationship, therefore, between the physical, emotional and spiritual elements can be determined to nurture and benefit each other within the cultural environment to understand dysmenorrhea from holistic perspective.^{20,21} Thus, indigenous people often view illnesses from a holistic perspective that includes spiritual, mental, emotional, and physical health.²²

Of more value is that, the Batlokwa's holistic understanding of dysmenorrhea has elements of primary health care as stipulated.²³ The Batlokwa THPs and IKHs' principles of understanding dysmenorrhea holistically provided practical guidance in the management of menstrual and gynecological health problems in a holistic approach.⁸ This put THPs and IKHs in a unique position to understand and heal the illness of their patients because they have a thorough knowledge and understanding of the history of their patients and they also share similar customs and beliefs. A holistic understanding of dysmenorrhea may also assist health care practitioners in both indigenous and Western worldviews with a conceptual base when diagnosing, treating and preventing dysmenorrhea and other women's health illnesses. Indigenous understanding of health and illness is complex; as such, it is necessary to be holistic when making meaning of illnesses. Therefore, this suggests that a holistic understanding of dysmenorrhea should be prevalent in efforts aimed at improving the health of individual women experiencing dysmenorrhea and preventing dysmenorrhea within the rural communities.

To emphasize on the point of holistic meaning, the metaphor of process and journey was used to make meaning of dysmenorrhea; at the same time, the participants connected dysmenorrhea to other gynecological problems to approach it holistically. The description of a photograph in [Figure 1](#) revealed that a meaningful dysmenorrhea concept was made using a metaphor of a process and journey. These metaphors were used to understand dysmenorrhea holistically. This does not mean that the contextual and basic meanings of dysmenorrhea are literally a processes and journeys in which women partake. It is merely a comparison. A journey points out a road that one travels on, while process times out and measures the period that one travels the road of the illness and the luggage (struggles or battles) carried through the journey. The use of metaphors was found to assist in adding clarity and depth of illness meaning rather than presenting factual information of the illness; making metaphors was seen as an easier task to convey specific facts using non-medical language, preferably a language that makes sense on a deeper level. Indigenous researchers in other domains have documented the use of metaphors as a familiar sense-making mechanism that allows everyone in the community to contribute to teaching and learning.²⁴ In addition, battle and journey reflect and reinforce how an illness is experienced.²⁵

The essence of a metaphor is to understand and experience one kind of thing in terms of another.²⁶ Metaphors, therefore, are used cross-culturally as a tool that reflects on illness experience and may help people to express their perspectives of self physically, emotionally, spiritually, and environmentally.²⁷ The metaphors of journey are better to use as they give a sense of purpose and control for the patient.²⁸ It was also evident that women take this journey throughout their reproductive age and the journey only ends with pregnancy, menopause or if treated successfully.

The metaphor of the journey was also used to describe the process that women experience from being diagnosed with dysmenorrhea until being cured. The journey in this regard meant that as women go through experiencing dysmenorrhea, it is also a process from being ill to becoming healthy. The journey metaphor was found to be the language frequently used by patients, family and health caregivers.^{25,28,29} The metaphor of a journey, therefore, emerged as an apt description of this process, because that was how the participants spoke about their knowledge of dysmenorrhea. A journey was used to remind the women that there is a destination at the end of the travelling, although at times the road is not easy.

A photograph of a chain (Figure 2) and a bridge (Figure 3) provoked a critical discussion on how they understand women's health issues. The participants understood dysmenorrhea as a way of indicating that the whole female reproductive system is negatively affected by illness. Dysmenorrhea was interpreted to be a holistic condition that affects women other reproductive organs rather than a specific gynecological condition.³⁰ This means that the Batlokwa THPs and IKHs understand the science of the human body - that it is divided into systems and can identify the women's reproductive organs.³¹

The participants used bridge and messenger to argue on grouping women's gynecological issues in understanding dysmenorrhea holistically. The term bridge emerged from a photograph of a bridge (Figure 3) presented by some participants as one way of understanding the findings linking dysmenorrhea to other women's health issues. The discussion revealed that the use of a bridge was applied as a throughway to identify other women's health issues causing dysmenorrhea because the pain from dysmenorrhea was associated to other hidden illnesses that women might be suffering from such as infertility. The metaphor of the bridge closes a gap between the patient's experiences of illness and the way the health care practitioners perceive it.³² When connecting dysmenorrhea to other gynecological issues, some THPs and IKHs indicated that they suffered from dysmenorrhea themselves. This resulted with infertility which was treated indigenously and in turn corrected dysmenorrhea. This finding suggests that dysmenorrhea is related to some form of infertility in women and act as a messenger agent. The findings are aligned to the study that revealed dysmenorrhea caused by endometriosis as the most leading symptom that contributes to infertility.³³ The number of studies confirmed that dysmenorrhea might be a sign of infertility owing to the link between dysmenorrhea and endometriosis, which confirmed to be a cause of infertility.^{30,34,35} Furthermore, the authors indicated that penetrating menstrual cramps can be caused by several diseases that impact fertility. Moreover, all the participating women associated dysmenorrhea with infertility.

Additionally, the findings showed that the Batlokwa women believed that dysmenorrhea is a message indicating problems within the reproductive system of a woman. A metaphor of messenger create links between activities and behaviors to assist women to understand the signs and symptoms of dysmenorrhea that they experienced.³⁶ Therefore, messages of health have tremendous power to effect changes in the behaviors.³⁷ This provided evidence that messages can increase the effectiveness in the understanding and promoting health.

Limitation of the study

Despite the careful selection of the research design, this study was contextualised to a specific setting, in one village of the entire Molemole municipality, which potentially limits the generalization of findings to the entire population but only of the selected municipality. The photovoice methodology made it difficult to know if data saturation was reached or not. The researchers relied on the consensus reached during Lekgotla discussion.

Conclusion

In summary, this study engaged the Batlokwa THPs and IKHs to understand indigenous perspectives of dysmenorrhea meaning. The findings revealed that dysmenorrhea is a holistic illness that affects the woman's entire reproductive system. This finding has the potential to direct a more holistic focus of illnesses that incorporates attention to physical and spiritual, as well as emotional and mental aspects. Therefore, the holistic understanding of dysmenorrhea teaches us that we cannot compartmentalize or separate illnesses affecting women's reproductive system. This study provided indigenous knowledge in health that can be used in future research.

Data availability

Underlying data

The datasets are currently not publicly available due to data protection issues since participants data cannot be effectively de-identified. Readers may request access from the corresponding author (Melitah.Rasweswe@up.ac.za). Access will be granted for review purposes.

Extended data

Zenodo: The indigenous meaning of dysmenorrhea: using modified photovoice to document perspectives of traditional health practitioners (THPs) and indigenous knowledge holders (IKHs). <http://doi.org/10.5281/zenodo.5111345>.³⁸

The project contains the following extended data:

- F1000_consent_form.doc
- F1000_guidelines_for_photovoice_and_interview_guide.doc

Data are available under the terms of the [Creative Commons Attribution 4.0 International license \(CC-BY 4.0\)](https://creativecommons.org/licenses/by/4.0/).

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Reviewer Report 30 June 2023

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Omero Benedicto Poli-Neto 

University of São Paulo, São Paulo, Brazil

Dear authors,

Initially I would like to congratulate you for conducting the study. It is well written, and contains important insights.

The main point in my view is the discussion of the findings. I think it would be possible to make a deeper parallel between the indigenous view and the “western” view. The indigenous view is from detailed observers who may not know in depth the most current pathophysiological knowledge. In any case, they may reflect what we have observed in studying the condition.

I also have some other considerations:

1. The term, “lekgotla”, is not familiar to most readers. You provided an explanation, but the term appears in the abstract and can lead to confusion. I would avoid using before explanation.
2. The “snowball” recruitment technique is interesting, but it can lead to interpretation errors, as the participant recruits other participants who are close acquaintances, and may have the same interpretation bias. This point needs to be added as a limitation in the “discussion” section.
3. Use only one decimal place in the first paragraph of the introduction.
4. Although the number of participants is considered sufficient by the authors, it is possible that it is not enough to guarantee a broad view of the condition. As described in Table 1, the group of participants appears to be significantly heterogeneous. Please mention this as a limitation.
5. Was the translation process validated or checked by a bilingual translator?

6. How were the photos selected? What proportion does the 24 selected photos represent?
7. Did the participants have no role in choosing the 24 photos? How to ensure that the researcher selected those most representative for the group?
8. The findings are interesting and, in my opinion, could also be discussed further. For example, the holistic view of dysmenorrhea may represent evidence of what we know today about the pathophysiology of the disease: the involvement of peripheral as well as central factors. Could you draw a parallel with that? The process and journey for me, reminded of the overload (burden) that these women support. And the photos also suggest this. Could a parallel be possible here as well?
9. The impact on fertility could also be further discussed. Simply mentioning the association with endometriosis is not enough.

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

Partly

If applicable, is the statistical analysis and its interpretation appropriate?

Partly

Are all the source data underlying the results available to ensure full reproducibility?

Partly

Are the conclusions drawn adequately supported by the results?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Pelvic pain, dysmenorrhea, endometriosis

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reviewer Report 01 February 2022

<https://doi.org/10.5256/f1000research.78950.r120232>

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**Firoza Haffejee**

Department of Basic Medical Sciences, Durban University of Technology, Durban, South Africa

I have viewed the corrections and these are suitable. The manuscript is now approved.

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

Partly

If applicable, is the statistical analysis and its interpretation appropriate?

Partly

Are all the source data underlying the results available to ensure full reproducibility?

Partly

Are the conclusions drawn adequately supported by the results?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Public Health, HIV

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 26 October 2021

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Firoza Haffejee

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In general, the paper is written well and suitable for research using the photovoice technique. The grammar however, requires improvement. Please also address the following queries:

1. Introduction line 4, "literature view" should be "literature review".
2. Reference required for sample size of 7-10 being adequate.
3. It is not clear whether the interviews were conducted in English, the local indigenous language or both. Please clarify. Also, indicate what measures were taken to ensure that translations were correct and captured the essence of what the participant was saying (if a language other than English was used).
4. In the results section – just before Figure 1 – in the quote of participant 2, "being" should be 'been'.
5. Last paragraph under the section process or journey.... – "on the other side" should be 'on the other hand'. Similarly, change "on the other vein" in the next paragraph.
6. In the discussion it is stated that the picture of the bridge evoked "critical discussion" but that is not given in the results. Please expand."

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are all the source data underlying the results available to ensure full reproducibility?

No source data required

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Public Health, HIV

I confirm that I have read this submission and believe that I have an appropriate level of

expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Comments on this article

Version 1

Author Response 30 Oct 2021

Melitah Molatelo Rasweswe

Thank you very much for showing interest and reviewing our article comprehensively. We addressed the comments as suggested.

1. Introduction line 4, "literature view" changed to "literature review".
2. Reference required for sample size of 7-10 being adequate. (Reference added)
3. It is not clear whether the interviews were conducted in English, the local indigenous language or both. Please clarify. Also, indicate what measures were taken to ensure that translations were correct and captured the essence of what the participant was saying (if a language other than English was used). (Added some information to address this comment)
4. In the results section – just before Figure 1 – in the quote of participant 2, "being" changed to 'been'.
5. Last paragraph under the section process or journey..... – "on the other side" should be 'on the other hand'. Similarly, change "on the other vein" in the next paragraph. (There is a very thin line between the 3, therefore no changes made.)
6. In the discussion it is stated that the picture of the bridge evoked "critical discussion" but that is not given in the results. Please expand."(The sentence has been rephrased)

Competing Interests: None

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