

East African Medical Journal Vol. 102. 11 November 2025

MENSTRUAL HYGIENE MANAGEMENT PRACTICES AMONG HADZABE FEMALES AGED 15-45 IN YAEDA CHINI, MBULU DISTRICT, TANZANIA

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MENSTRUAL HYGIENE MANAGEMENT PRACTICES AMONG HADZABE FEMALES AGED 15-45 IN YAEDA CHINI, MBULU DISTRICT, TANZANIA

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ABSTRACT

Background: Menstrual hygiene management (MHM) constitutes a critical dimension of hygiene for adolescent girls and women. Its inadequate and unsanitary management is linked to a plethora of adverse health effects. Marginalized indigenous females in rural settings necessitate a conducive MHM environment to facilitate consistent school attendance and mitigate health risks. In Tanzania, particularly within the Hadzabe community, knowledge is scarce regarding the understanding and implementation of MHM practices during menstruation.

Objective: This study explored the practices of menstrual hygiene management among Hadzabe females aged 15-45 in Yaeda Chini ward in Mbulu district.

Methods: A cross-sectional study was conducted, using structured questionnaires to gather primary data from 192 respondents. Descriptive statistics were employed to determine the frequencies and percentages. Additionally, thematic analysis was employed for the qualitative analysis of data collected from in-depth interviews and focus group discussions.

Results: The study found that the majority of respondents rely on traditional MHM methods, using rag cloth 94.3% and animal skin 67.7% as absorbent materials. A significant proportion (31.8%) changes materials only once a day, and disposal methods primarily involve open space disposal (57.3%) and burning (42.7%). Poor practices towards MHM were prevalent, with 54.2% of the respondents unaware of menstruation before menarche and a general discomfort in discussing menstruation openly.

Conclusion & recommendations: The study concludes that MHM practices among Hadzabe women and girls are largely traditional, with poor practices towards MHM. The study therefore, underscores the need for community-led education and sensitization campaigns programs with adolescent peer support,

and promotion of affordable and culturally acceptable reusable menstrual products.

Keywords: Hadzabe, Health, Menstruation, Menstrual Hygiene Practices,

INTRODUCTION

Menstruation is a natural biological process that marks an important milestone in the reproductive lives of females aged 15-45 who have not yet reached menopause.¹ It is the transitional phase for girls as they move from childhood into womanhood.² Girls experience menstruation at different ages; some may start as early as 10, while others may not begin until they are 17 or even older.³ It's estimated that over 800 million women aged 15 to 49 are currently menstruating. This highlights the importance of focusing on menstruation as a health issue that requires proper and hygienic management to reduce women's vulnerability.⁴

Menstrual Hygiene Management (MHM) emphasizes effective methods for managing menstruation, specifically how women maintain cleanliness and health during their periods, as well as how they obtain, utilize, and dispose of menstrual products.³ This topic is increasingly acknowledged as both a fundamental right and a significant development challenge, highlighted in the Sustainable Development Goals (SDGs). It is particularly relevant to Goals 3 (Good Health and Well-being), 4 (Quality Education), 5 (Gender Equality), and 6 (Clean Water and Sanitation).⁴

The WHO specifies appropriate menstrual hygiene management practices for women and adolescent girls, including the use of clean menstrual materials to absorb blood that can be changed in private as frequently as needed throughout the menstrual period, utilizing soap and water for body washing as necessary, and having access to disposal

facilities for used menstrual products.⁴ Both adolescent girls and women are expected to follow these WHO guidelines; without adherence to these practices, the community remains unhealthy, gender-discriminatory and inadequate.

Initiatives to enhance menstrual hygiene management (MHM) globally have been diverse, emphasizing education, infrastructure, and policy interventions. In many regions, efforts have included education on menstrual health and hygiene to dispel myths, reduce stigma, and empower girls with accurate information. Infrastructure facilities such as gender-sensitive sanitation facilities, access to clean water, and disposal mechanisms for menstrual products have also been prioritized. Policy interventions including the integration of MHM into national education curricula, provision of free or subsidized menstrual products in schools, and the development of national MHM guidelines have further supported these efforts. Yet, significant gaps remain in addressing MHM in remote rural areas of Sub-Saharan countries like Tanzania, where limited resources, cultural taboos, and inadequate infrastructure continue to hinder progress.^{5, 6}

The government of Tanzania has taken significant steps to address MHM by waiving value-added tax (VAT) on imported sanitary pads, making them more affordable for women and girls, especially in rural areas.⁷ In addition, various sensitization campaigns have been conducted to empower women and girls to participate freely in development activities, such as economic opportunities

and education, specifically to increase school attendance and participation among school-age girls.⁷ In the past 10 years, MHM initiatives such as “girls in control”, empowering girls through WASH, “maji safi” group’s menstrual hygiene program that intended to enhance the management of menstruation and the sanitation conditions in schools across Tanzania, “sauti ya binti” (daughter’s voice) have been launched by the government, local and international organizations.⁸ Additionally, different societies in Tanzania have been sensitized to enhance MHM for all communities; however, there is gradual change in some communities especially those in remote areas like Hadzabe in particular on their perception and cultural influence which might have consequences on safe and MHM. Despite the concerted efforts to promote modern and hygienic MHM practices, traditional and unsafe menstrual hygiene practices persist across different regions of Tanzania, influenced by diverse cultural practices and beliefs.⁸ Notwithstanding, report on sanitation and hygiene practices in Babati District indicate that 72% of women and girls in rural areas especially marginalized indigenous communities, rely on traditional methods such as cloth, leaves, and animal skins for menstrual management, posing health risks as most of them are unhygienic.^{9,24} Marginalized indigenous communities, for example Hadzabe community in Mbulu district, known for its unique way of life and limited exposure to modern amenities, exhibit specific traditional MHM practices that remain under-documented. Their distinct cultural norms and practices might have impacts on MHM practices, potentially hindering their access to modern hygiene services and contributing to school absenteeism among young girls.^{10,26}

Significantly, local reports and observations indicate that these circumstances have led to serious issues such as elevated occurrences of

urinary tract infections (UTIs), rashes, and other hygiene-related illnesses²³. Moreover, menstruation has become a barrier to education for adolescent girls, with frequent school absenteeism reported during menstrual periods due to inadequate facilities, fear of stigma, and embarrassment.^{10,21}

Though various studies on MHM have been conducted in Tanzania, there is a notable lack of studies on the unique experiences of marginalized indigenous females aged 15-45 in rural areas.^{1, 8, 9, 21, 24, 25, 26} Therefore, this study seeks to investigate MHM Practices among Hadzabe females aged 15-45 in Yaeda Chini, Mbulu district, Tanzania.

Materials and Methods

Study design Study

A cross-sectional research design was employed to investigate practices on MHM among marginalized indigenous communities in the Mbulu District, Tanzania. This design was chosen for its ability to facilitate data collection at a single point in time, making it both efficient and cost-effective.¹¹

Study Area

This study was conducted in Yaeda Chini ward, located in the Mbulu district, Tanzania. This ward was selected due to its significance as the home of the Hadzabe community, which possesses unique traditional and cultural practices. These practices have either gradually changed or remained largely unchanged owing to limited interaction with other communities. The Ward is situated within the Mbulu Highlands of the Manyara Region, with geographic coordinates of 3° 58' 21" S and 35° 10' 14" E. The area experiences a tropical savanna climate, characterized by wet conditions. The forest in Yaeda Chini ward is crucial for wildlife movement, acting

as a key connection between the Ngorongoro Conservation Area, Lake Manyara National Park, and Lake Eyasi.

Sample size and sampling

A power analysis was conducted to ascertain the requisite sample size utilizing the formula,

$$n = z^2 p (1-p) / \epsilon^2.$$

In this equation, n represents the minimum sample size necessary, z denotes the confidence level established at 1.96, ϵ signifies the maximum permissible error set at 5%, and p is equal to 0.533, representing the proportion of females belonging to the 15-45 age group.¹²

$$n = \frac{1.96^2 \times 53.3(100 - 53.3)}{5^2} \times \text{Deff}$$

The sample size for this study is 192 respondents. This number takes into account the clustering of females aged 15-45 in the study area, with an adjustment factor of 0.5 applied to ensure accurate representation.

Sampling frame

The sampling frame for this study was the list of females aged 15-45 who live in Yaeda Chini ward. The sampling frame was used to generate a random sample of individuals who participated in the study.

Sampling unit

In this case, the sampling unit was an individual female aged 15-45. Moreover, key informants such as teachers, ward community development officer, district reproductive health coordinator, and ward environmental health officer (EHO) were employed to capture an in-depth

understanding of MHM practices in the study area.

Simple random sampling

The research employed a simple random sampling method to ensure a representative sample. To make certain that each individual in the population had an equal opportunity to be part of the sample, 192 females aged 15 to 45 years from the Yaeda Chini ward were selected randomly.

Purposive sampling

A purposive sampling method was utilized to identify key informants with specific characteristics pertinent to the study. For this research, teachers, the ward community development officer, and the ward Environmental Health Officer (EHO) were intentionally chosen for their relevant insights and expertise.

Inclusion criteria

The inclusion criteria were females aged 15-45 who had reached menarche, lived in Yaeda Chini ward, and were willing to participate by providing informed consent.

Exclusion criteria

Males, pre-menarche girls, post-menopausal women, and the non-Hadzabe tribe were excluded from participating in the study.

Data collection procedure

Structured interview

Structured interviews were carried out with a structured questionnaire to collect data from respondents. The questionnaire was specifically designed to investigate different facets of menstrual hygiene management practices, including the types of materials

utilized, the frequency of changing these materials, and methods of disposal. Research assistants, conducted these face-to-face interviews, creating a supportive atmosphere for participants to share their experiences.

Focus group discussion (FGD)

Two focus FGDs were conducted, one with adolescent school girls and another with out-of-school adolescent girls. These discussions were conducted separately to foster an environment where participants could speak openly and honestly about menstrual hygiene management practices. Each FGD was facilitated by a trained research assistant who guided the conversation using a pre-determined checklist of questions on practices and experiences of adolescent girls.

Documentary review

The documentary review involved gathering secondary data on menstrual hygiene management practices in rural areas from various published sources. This included national sanitation guidelines, health reports from Mbulu district, research articles, reports from the Mbulu sanitation program, and annual plans from government departments and non-governmental organizations. These documents were systematically reviewed and analysed to identify common themes and trends related to menstrual hygiene practices.

Validity and Reliability

The study's validity was strengthened by utilizing established tools and methods for gathering data on menstrual hygiene practices. The tools were developed following an in-depth examination of current literature and customized to align with the local context, guaranteeing both content and face validity. To further enhance this validity,

a pre-test (or pilot test) of the data collection tools was conducted in a village with similar socio-cultural characteristics but not included in the main study sample. The pilot study enabled essential modifications based on input from participants and field researchers.

Reliability was ensured by implementing standardized data collection procedures across all sites. All research assistants and facilitators received thorough training to minimize interviewer bias and maintain consistency in administering the tools. Likewise, rigorous data analysis techniques, including double data entry and verification, were employed to reduce errors.

Ethical consideration

Ethical considerations involved balancing the pursuit of scientific knowledge with the rights of the participants, especially those aged < 18 years. Approval was obtained from the IRDP, along with a permission letter from the Mbulu Executive Director to conduct the research. Furthermore, the information collected was treated with utmost confidentiality. The study considered important aspects such as the principles of protecting participants' rights related to autonomy and informed consent in expressing issues related to MHM practices.²⁷ Participants were informed about the purpose of the study on an individual basis and guaranteed that their answers would be kept confidential and utilised only for research purposes. Moreover, each participant was asked if she was ready to provide information concerning MHM practices and her experience. Furthermore, one who was willing to engage in the discussion related to MHM practices among the Hadzabe young girls was engaged to provide the required data for this research. In addition, ethical guidelines were strictly followed to avoid plagiarism,

ensuring that the research accurately reflected the findings of the field and other sources.

Data analysis

Before analysis, the collected quantitative data were coded and edited to identify any errors or omissions. After editing, the data were summarised, and the recorded data were entered into a computer for further processing. IBM SPSS version 25 was used to analyse the data gathered from the respondents through the questionnaires. Descriptive statistics were used to determine the frequencies and percentages of MHM practices among Hadzabe females aged 15-45. The collected qualitative data from different sources were organised to generate themes and thereafter coded based on the determined themes in relation to MHM practices. These data from different sources

were triangulated to enhance validity and were analysed through content analysis.

Results

Demographic characteristics of the respondents

A total of 192 girls were enrolled in the study, of whom 51% had no formal education and 47.9% had primary education. The majority, 60.9%, were aged between 15-18 years old while a few, 39.1%, were above 19 years old. Half of the respondents (55.2%) were single, and 34.9% were married. Furthermore, the results indicated that a significant portion of the respondents (91.1%) resided in temporary houses made of mud and roofed with thatch materials, while a few (8.9%) resided in permanent houses made of bricks and iron sheets or any advanced building construction materials.

Table1: Demographic characteristics of the respondents

Status of Respondents	Frequency N=192	Percentage (%)
Education level		
No formal education	98	51.0
Primary education	92	47.9
Secondary education	2	1.0
Age of respondents		
15-18	117	60.9
19-25	24	12.5
26-30	27	14.1
31-45	24	12.5
Marital Status		
Single	106	55.2
Married	67	34.9
Widowed	3	1.6
Divorced	16	8.3

Settlement type		
Temporary	175	91.1
Permanent	17	8.9

Methods of Menstrual Management Practices

Both traditional and modern methods are commonly used during menstruation. Findings in Figure 1 indicated that the majority 84.4 % of Hadzarbe adolescent girls and women rely on traditional materials,

while 15.6% rely on modern materials. Despite initiatives taken by the government and non-government organisations to support the use of modern menstrual materials, the findings affirmed that young girls and women in the Hadzabe communities rely on traditional sanitary pads.

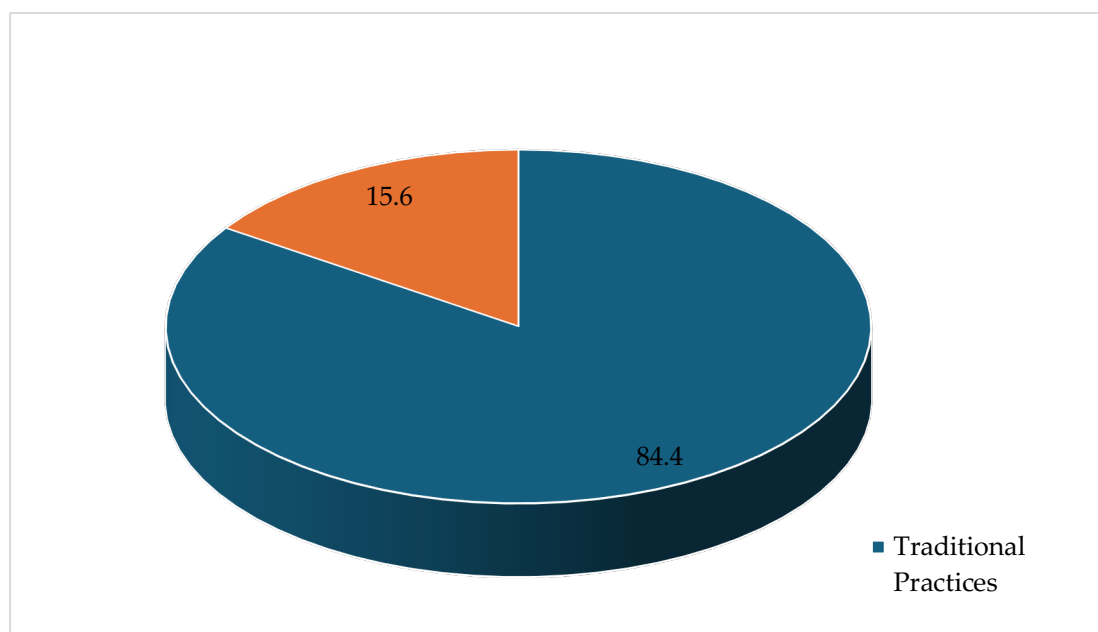


Figure 1: Methods used during menstruation

Types of materials used during menstruation

There were multiple responses from the study participants. The most frequently used material was rag cloth reported by 94.3% of the respondents, followed by 67.7% and the 3.1% who used animal skin and leaves respectively. Only 19.3% of the young girls relied on disposable pads. Moreover, various views were drawn from FGDs and Key

informants' interviews. For example, during the FGD, one of the out-of-school girls (participants) said:

"Most of the Hadzabe do not participate in income-generating activities like other tribes. Our primary work involves digging for shumu (roots) and foraging for embele (fruits), leaving us without the financial means to purchase modern sanitary pads. Furthermore, we are not familiar with how to use these products, as our traditional

practices have shaped our approach to menstrual hygiene". (FGD with out-of-school girls, 26/08/2025)

Furthermore, during an interview with one of the key informants at Yaeda Chini Primary School, it was affirmed that:

"In this community, adolescent girls prefer using locally made pads with either cloth or animal skin. Teachers exert significant pressure on them to use sanitary pads, but students commonly use modern pads during school hours. Once I return home, do continue using locally made pads." (KII with Primary school teacher 26/08/2025)

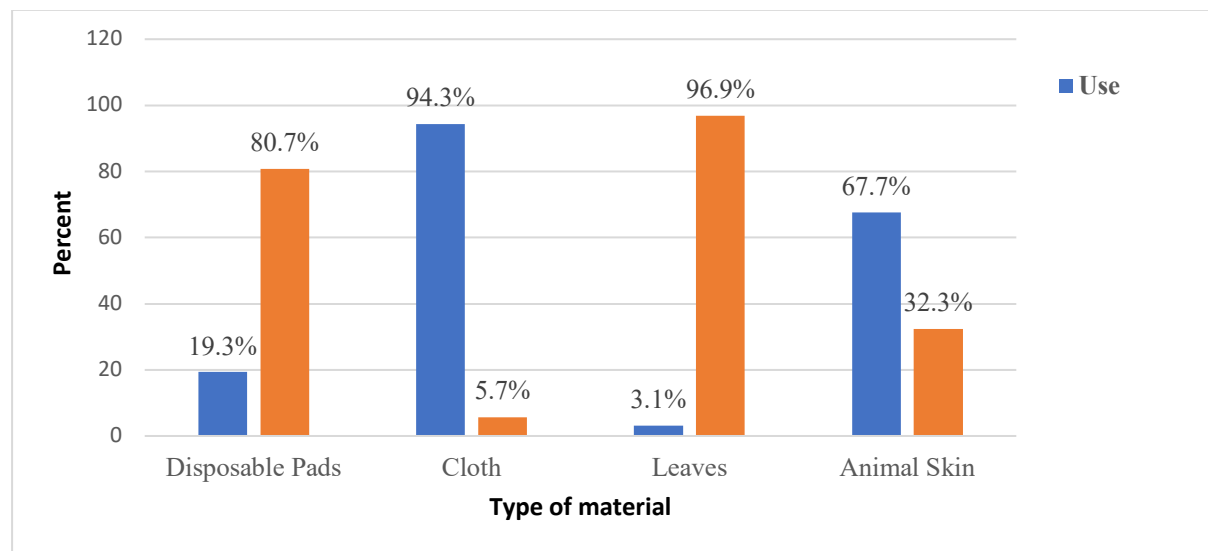


Figure 2: Materials used during menstruation

Frequency of changing absorbent materials

As shown in Table 2, almost half (49%) of the respondents changed their materials twice a day, 31.8% of the respondents changed once, and only 19.3% changed three times or more, depending on the individual situation. Responding to the same issue during the

FGD, one of the participants (an adolescent girl) reported that:

"Since I use "shaashoo" (animal skin), I often do not change it at all; I just clean it with sand or dry it using "shaashoo" and then reuse it again. If it becomes stiff, I apply natural oils from plants to make pliable the material used." (FGD with adolescent girls, 24/08/2025).

Table 2: Frequency of material change

Change material used	Frequency	Percent (%)
Once	61	31.8
Twice	94	49
Thrice	37	19.3
Total	192	100.0

Methods utilized to dispose the used sanitary material

Two methods were used to dispose of sanitary materials: burning of used materials and open space disposal, including throwing

in open spaces. Figure 3 presents the methods used to dispose of used sanitary pads. Majority 57.3 % of the respondents opted for open space disposal, while 42.7% used the burning method, as indicated in Figure 3.

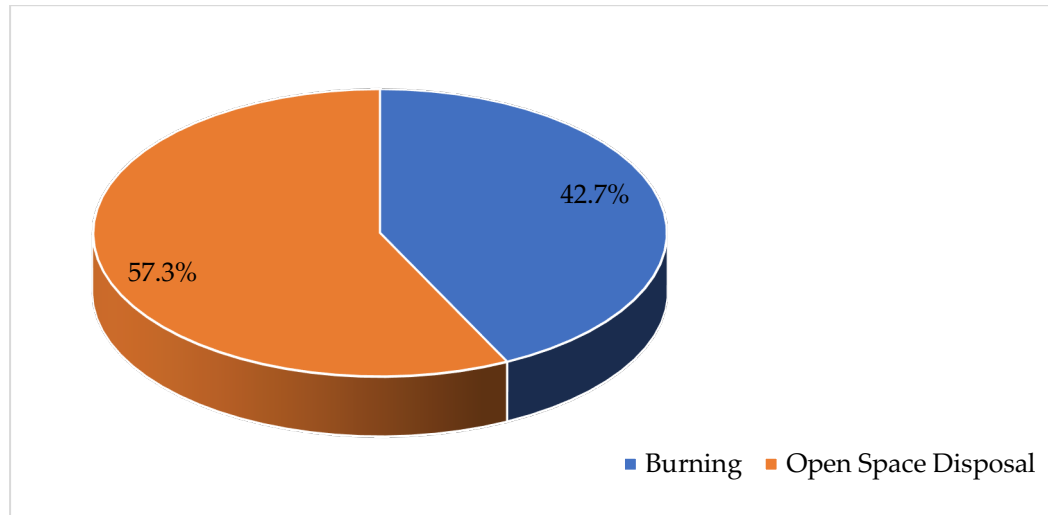


Figure 3: Methods of Disposal of Used Materials.

Hand washing practices

Handwashing is an element of hygiene practice. Handwashing every time menstrual materials are changed is necessary to enhance hygiene. In this study, the majority

(56.8 %) of the respondents reported that they did not wash their hands while changing menstrual materials, 30.7% reported always washing their hands, and 12.5% reported sometimes washing their hands.

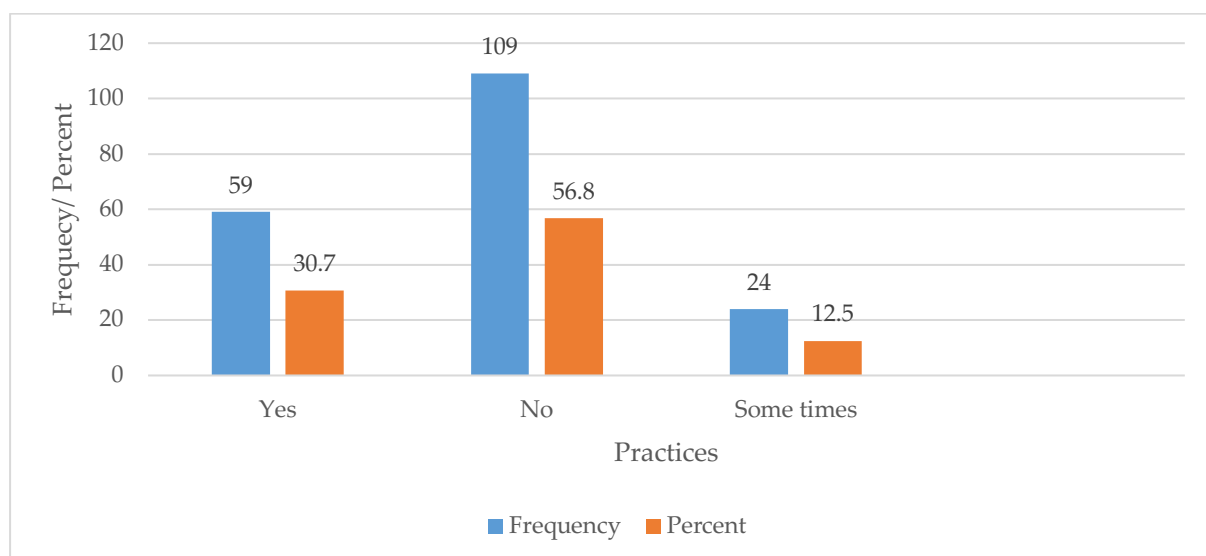


Figure 4: Hand washing practices

DISCUSSION

This study provides critical insights into menstrual hygiene management (MHM) among the Hadzabe community, a traditionally nomadic hunter-gatherer population in Tanzania. The study indicated that over half of the respondents did not have any formal education. Results of this study concurs with the study conducted in Mkalama district, Tanzania, which reports that the majority 67% of the respondents within Hadzabe hunters-gatherers had no formal education.¹³ The lack of access to formal education is linked to decreased exposure to health information and limited understanding of MHM practices.¹ Findings of this study are in line with the study conducted in Odisha, India, which observed that most respondents (Juang women), a marginalized tribal group with limited formal education. Thus, illiterate rate among Juang women resulted in a lack of awareness regarding improved menstrual health and hygiene practices.¹⁴ The Hadzabe community lived and experience nomadic kind of settlements. Nomadic lifestyles impede regular access to water, sanitation facilities, and commercial menstrual products. These findings align with research conducted in Niger, which reported that inadequate menstrual hygiene management practices were significantly more prevalent among nomadic women compared to those living in sedentary situations.¹⁵

Traditional sanitary materials remain dominant among the Hadzabe community, a pattern strongly linked to the persistence of traditional practices and the gradual pace of social change within the society. This continued reliance on traditional methods such as the use of cloth, animal hides, or natural absorbents is primarily due to limited awareness about the benefits and proper usage of modern sanitary pads.¹⁷ Many women and girls in the community have not been exposed to menstrual health

education, and the topic often remains taboo, leading to low levels of knowledge about hygiene, discomfort, and the health risks associated with using unhygienic materials. Furthermore, access to sanitary pads remains a significant issue among communities in remote areas like the Hadzabe. Access is limited not only due to a lack of awareness but also because of economic and geographic barriers. The low purchasing power of most families, coupled with the long distances to the nearest shops or health facilities that stock sanitary products, severely limits the ability of women and girls to obtain modern menstrual materials.¹⁴ This situation could be justified by examining both the low-income levels of the community and the remote location of retail outlets, which are often situated far from Hadzabe settlements and inaccessible without reliable transportation.

Alarmingly, qualitative data revealed that some girls do not change their materials at all; they dried and reused animal skin softened with local plant oils. These results partly align with the research conducted in India among Juang women, which discovered that 53% of participants changed them once, while 41% changed them twice.¹⁴ Similarly, a study conducted in rural Anambra communities found that adolescent girls changed sanitary products twice per day.¹⁸ Again, the study finding is consistent with a study conducted in rural and urban India, which found that only 40.7% of adolescent girls changed absorbent materials more than once a day.¹⁹ These practices increase the risk of infections such as reproductive tract infections (RTIs) among adolescent girls.^{20,23} Infrequent replacement of menstrual absorbent products leads to women experiencing leaks onto their outer garments during their menstrual cycle.²¹ These results also have implications regarding management of menstruation used materials linked to health risks due to poor means used to control waste. As

mechanism used to dispose used sanitary pads may lead to land and water contamination which in turn may pollute water which is used by not only human being but also animals. Menstrual hygiene education, particularly on safe usage and appropriate frequency of material changes are important in supporting MHM practices. Disposal practices raise significant concerns regarding MHM. The study has shown that open space and burning are commonly experienced in the area. However, open dumping poses environmental hazards and public health risks, reflecting both a lack of appropriate waste management infrastructure and limited community awareness of safe disposal practices. Similar patterns have been observed among Tanzanian schoolgirls, who often dispose of used materials in open dumping sites.²¹ Results of this study are partly consistent with the study conducted in India, which found that in rural settings, adolescent girls disposed of absorbent materials through burying and throwing away in public spaces.²²

Access to water and community behaviour have influenced hand washing and affected hygiene practices among adolescent girls and women found in the study area. Such practices heighten the risk of urinary tract infections (UTIs), reproductive tract infections (RTIs), and other health complications.²³ This study showed that number of individuals were not following proper hygiene practices when managing their menstrual health. Though some awareness of MHM exists, poor hand hygiene suggests underlying barriers like a lack of access to water, soap, or dedicated sanitation facilities. This could be attributed to several reasons, including insufficient awareness regarding the significance of handwashing hygiene, limited access to soap and water, and social norms that do not prioritize menstrual hygiene. These findings

align with the study conducted among primary schools in Tanzania, which highlighted both infrastructural and behavioural challenges in maintaining menstrual hygiene.²¹

Limitations of the Study

The study focuses on Hadzabe females in Yaeda Chini, a unique indigenous community with distinct socio-cultural and environmental conditions. Therefore, the findings may not be generalizable to other populations or even other ethnic groups within Tanzania.

Conclusion

The findings of this study offer valuable perspectives into the menstrual hygiene management (MHM) practices among Hadzabe females aged 15-45. The study concludes that there was a significant reliance on traditional methods such as the use of rag cloths and animal skins among Hadzabe females during menstruation. The study also conclude that the Hadzabe community have no designated dumping area to handle used sanitary pads. In addition, most of the respondents reported infrequent changes of absorbents which not only pose serious health risks but also negatively impact their overall well-being.

Recommendations

The Health Department in Mbulu District in collaboration with local leaders should establish comprehensive educational programs in schools and communities to raise awareness about menstruation, its significance, and proper hygiene practices. Also, non-governmental organizations, together with the Mbulu district health department, should collaborate with Hadzabe leaders to form a task force focused on educating parents about the importance

of supporting their daughters during menstruation.

Contribution: AHL conceived the idea, designed the study, analysed data, and drafted the manuscript. HSF participated in the conception of the idea, design of the study, and critical review of the manuscript. EAK participated in the interpretation of the data, drafting, and editing the manuscript. All authors reviewed the final draft of the manuscript.

Conflict of interest. None

Data Availability statement. Data will be available upon request

Funding: No external funding was received.

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