Menstrual Health Practices among Physically Disabled Women and Girls in Masaba North Sub-County, Nyamira County, Kenya

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Abstract

Background: Menstrual health is crucial for achieving Sustainable Development Goals (SDGs) and gender equality. Disabled women and girls may experience double prejudice during menstruation. This study aimed to establish menstrual health practices of physically disabled women and girls in Masaba North Sub-county, Nyamira County, Kenya.

Methods: A cross-sectional study design was used. A census was conducted for all (111) registered physically disabled women and girls (15-49 years). A structured questionnaire was used to collect quantitative data through face-to-face interviews. Purposive sampling was used to select 12 physically disabled women and girls for Focus Group Discussions (FGDs), ten caregivers and four physically disabled women and girls for in-depth interviews, two Water, Sanitation, and Hygiene (WASH) experts, three public health officers, three representatives of persons with disabilities, and one policymaker for key informant interviews. Chi-Square test and binary logistic regression were used to test the association between menstrual health practices and the independent variables. OR, 95% CI, and p-value < 0.05 were considered statistically significant.

Results: More than half (55%) of physically disabled women and girls had unsafe menstrual health practices. Maternal education level (OR 3.794, 95% CI 1.345-10.705) modified toilets (OR 2.937, 95% CI 1.135-7.602) and ability to shower and change in privacy (OR 2.845, 95% CI 1.211-6.683) were significantly associated with safe menstrual health practices. The qualitative study's themes included WASH services, awareness, experiences, and the unique needs of physically disabled women and girls.

Conclusion: Mothers' education level, modified toilets, ability to shower, and change in privacy were independently associated with safe menstrual health practices.

Keywords: Menstrual health, disability, water, sanitation, hygiene

Introduction

Menstrual health is crucial for achieving Sustainable Development Goals (SDGs) and gender equality (Sommer et al., 2021). The term "menstrual health" refers to a state of complete physical, social, and mental wellbeing rather than the absence of disease or infirmity in relation to the menstrual cycle (Hennegan et al., 2021). Menstruation is a monthly natural part of life for 1.9 billion women and girls of reproductive age (United Nations International Children's Emergency Fund [UNICEF], 2019). However, millions of menstruators worldwide repudiate the

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right to manage their menstruation with dignity (UNICEF, 2019).

Menstruators who lack proper menstrual health are susceptible to various health problems including recurrent genital infections (Ademas et al., 2020). Menstrual health is supported by multiple factors, including access to appropriate water, sanitation, and hygiene (WASH) facilities and a supportive environment without discrimination or stigma (Hennegan et al., 2021; UNICEF, 2020). The majority of menstruators in low- and middle-income countries (LMICs) are unable to handle their menstruation hygienically because of inadequate knowledge about menstruation and insufficient WASH services (Scherer et al., 2021; Wilbur et al., 2021). In many African cultures, people with disabilities (PWDs) are considered contagious and dirty. Thus, they may be banned from using public WASH facilities (Wilbur et al., 2022). PWDs depend on informal or paid caregivers for help including menstrual hygiene support.

Physical disability refers to a limitation in mobility, which may affect the upper or lower limbs or the ability to coordinate multiple body parts (World Health Organization & The World Bank, 2011).

Access to WASH services that fully satisfy the needs of physically disabled women and girls, especially in LMICs, is a challenge, although these services are essential for Menstrual Hygiene Management (MHM) (Scherer et al., 2021; Wilbur et al., 2021). Furthermore, menstruation is seldom openly discussed, and many girls are not informed about it before menarche, preventing the dissemination of accurate menstruation knowledge. This study investigated the menstrual health experiences of women and girls with physical disabilities, focusing on their access to water, sanitation, bathing facilities, and menstrual products in Masaba North sub-county, Nyamira County, Kenya.

Literature Review

Globally, over 1.3 billion people are currently disabled; of these, 2-4% face significant functional challenges (WHO, 2022). Approximately 80% of people with disabilities (PWDs) live in developing countries (WHO, 2022). Globally, women and girls with disabilities represent more than half of all disabled people living with disabilities. Approximately 300 million women and girls worldwide have physical disabilities (WHO, 2022). As a result of their impairment, disabled women and girls need a supportive social environment, education, menstrual products and materials, WASH facilities, and assistance to overcome the obstacles and challenges they endure (Phillips-Howard, 2022; Sommer et al., 2021; Wilbur et al., 2021). However, the definition of menstrual health aims to remove social restrictions that limit people with differences in their menstrual cycles from having healthy periods (Hennegan et al., 2021).

Kenya is regarded as one of the world's most water-scarce nations. This is due to the increased frequency of extreme weather and the depletion of natural resources, and thus the availability of less water for agricultural and domestic use

(United States Agency for International Development [USAID] & Government of Kenya [GOK], 2022). WASH services are not equally accessible in Kenya's counties, cities, and rural areas (Kim et al., 2022).

There is an increased demand for water in Nyamira County, yet its residents do not have sufficient water for domestic and agricultural use. Springs, wells, rivers, and streams that once flowed continuously have dried up or have much less water than they formerly had (Bosire et al., 2021). Masaba North sub-county inhabitants are currently forced to travel great distances in search of water for domestic use. Given the hilly landscape and the location of rivers and streams in the sub-county, it is a challenge for physically disabled women and girls to access water sources or carry water for long distances for domestic use and self-care during menstruation.

WASH, Menstruation and Disability

Everyone has a fundamental human right to WASH services. However, to a large extent, certain groups in LMICs, those living in vulnerable circumstances such as refugees and PWDs, are disproportionately supplied with WASH services (Sommer et al., 2021; WHO, UNICEF, 2021). PWDs often experience obstacles to accessing WASH services, particularly in their households (Mactaggart et al., 2021). These obstacles incorporate challenges with the WASH facilities' physical accessibility or routes to the facilities, limited information on inclusive WASH technologies, fear of violence, stigma or violence and not being involved in policy development and implementation (Mactaggart et al., 2021; Sommer et al., 2021).

Challenges Facing Physically Disabled Women and Girls in Accessing WASH Services During Menstruation

Compared to girls and women without disabilities, girls and women with disabilities encounter more difficulties in managing their menstruation hygienically and with dignity (Wilbur et al., 2022). These include physical, institutional/ organizational, and societal/attitudinal barriers.

Physical/Infrastructural Challenges. The unfriendly nature of WASH infrastructure is one of the main barriers women and girls with impairment in mobility encounter when using the WASH facilities (Wilbur et al., 2021). These include uneven paths to water sources, navigating slippery or uneven surfaces, uneven ground for those using wheelchairs and those with lower limb amputation. Some toilets lack privacy because they do not have lockable doors or superstructures (Banks et al., 2019).

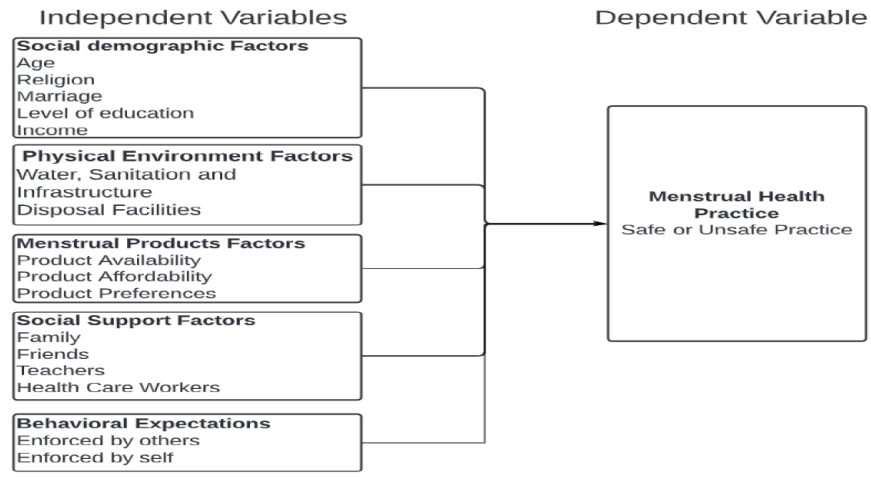
Societal/Attitudinal Challenges. Society's attitude towards persons with disabilities varies from one location to another and the type of disability, including skipping social events and eating alone during menstruation (Scherer et al., 2021). In Vanuatu, PWDs are five times more likely to use separate bathing facilities than other family members (Wilbur et al., 2022).

Conceptual Framework

Figure 1 illustrates the conceptual framework of the study. Data on the dependent variable (menstrual health practices of physically disabled women and girls) were collected, and respondents were classified as having safe or unsafe menstrual practices. Data on sociodemographic, socioeconomic, physical environment, menstrual products, social support, and behavioral expectations were collected and analyzed to determine the significance of the association with the dependent variable.

Figure 1

Conceptual Framework



Source: MacRae et al., (2019)

Research Questions

The following research questions were addressed based on this conceptual framework.

1. What are the current menstrual health practices for physically disabled women and girls?
2. What are the barriers to menstrual health for physically disabled women and girls?

Methodology

Study Design

The study used a cross-sectional study design. Mixed methods were used for data collection regarding access to water, sanitation facilities, bathing facilities, and menstrual products among physically disabled women and girls. Physically disabled women and girls aged 15-49 years as of December 2022 were recruited as study participants. Data were collected in December 2022 and January 2023.

Study Area

The study was conducted in Masaba North Sub-county, Nyamira County, Kenya. The study area lies within the latitudes of 340 40' 0" E,350 15' 0"E and longitudes of 00 52' 0"S, 0 0 31'0"S. It comprises three administrative wards: Rigoma, Gachuba, and Gesima.

Study Population

Physically disabled women and girls aged 15-49 years as of December 2022, were the primary participants in this study. Qualitative data were collected through focus group discussions (FGDs), key informant interviews (KIIs), and in-depth interviews, with purposively selected participants. The sample size for the qualitative component is based on data saturation. FGDs were conducted on 12 physically disabled women and girls. In-depth interviews were conducted with four physically disabled women, girls, and ten caregivers. KIIs were conducted with two WASH experts, three representatives of PWDs, three public health officers, the county National Council for Persons with Disabilities (NCPWD) coordinator, and county executive committee members for youth, sports, gender, culture, and social services.

Sample Size

As of December 2022, 111 physically disabled women and girls aged 15-49 have been registered by the National Council of Persons with Disabilities in Masaba North Sub-county, Nyamira County, Kenya. Owing to the small number of physically disabled women and girls, a census was conducted targeting 111 registered physically disabled women and girls.

Sampling Technique and Procedures

One hundred and eleven physically disabled women and girls participated in the quantitative survey. Purposive sampling was used to select 12 physically disabled women and girls for the focus group discussions. In addition, four physically disabled women and girls and ten caregivers were selected for in-depth interviews based on their unique experiences. Two WASH experts and three healthcare professionals (PHOs) were purposively selected for the study based on their roles in promoting and providing inclusive WASH services in the community.

Data Collection

A structured questionnaire was used to collect quantitative data, and FGDs, KIIs, and in-depth interviews were used to collect qualitative data. The qualitative component allowed further probing for clarification and a detailed understanding of menstrual health experiences, requirements, and challenges in accessing WASH services. Those who participated in the FGDs were required to participate in the quantitative survey. Participants in the in-depth interviews participated in the quantitative survey but did not participate in the focus group discussions.

Measurement of Menstrual Health Practices

Respondents were classified into two categories based on their menstrual health practices: "safe practices" or "unsafe practices." Participants' menstrual health was assessed using nine practice-related questions and indicators from the existing literature (Ahmed Shallo et al., 2020; Bhusal, 2020; Ha & Alam, 2022; Hussein et al., 2022; Shibeshi et al., 2021). Each correct response to a question was scored one point, while incorrect or 'do not know' answers received no points. The cumulative scores were calculated using a 9-point scale. The average menstrual health practice score was 7.0, and all respondents who scored between 0 and 7 were grouped as having unsafe practices, whereas respondents who scored above seven were grouped as having safe practices.

Table 1

Measurement of Menstrual Health Practice

	Indicators	Correct Response=1	Incorrect responses=0
1.	Menstrual blood absorbed by some form of material	Yes	No
2	Material used to absorb menstrual blood	New piece of cloth, Sanitary pad, new cloth and sanitary pad interchangeably	Old cloth
2.1	Cloth washed before reusing	Yes	No
2.2	Substance (s) used for washing clothes before using it again	Water, soap,	Water only
2.3	Where to dry cloth after washing it	Sunny, open areas	a closed space with shade
2.4	Where to store cloth before using it again	With other clothes	secluded areas in the bathroom, the bedroom
3	Absorbent material is changed in a day	at least three times every day	Less than thrice a day
4	Wash her genitalia when having a period	Yes	No
5	How often the respondent washes their genitalia when having a period	At least four times every day	Less than four times a day

	Indicators	Correct Response=1	Incorrect responses=0
6	Supplies used to wash one's genitalia	Water and soap,	Water only
7	Bath during menstruation	Yes	No
8	Frequency of bathing during menstruation	At least once every day	irregular bathing
9	Disposal of used sanitary materials	Burial in the ground, thrown in a pit latrine	Throwing in open areas bodies of water

Data Analysis

Data were analyzed using SPSS software, and all variables were subjected to descriptive and inferential statistics. Chi-Square test and binary logistic regression were used to test the association between menstrual health practices and the independent variables. Odds ratios (OR), 95% confidence intervals (CI), and p-value < 0.05 were considered statistically significant. Odds ratio was used as the final measure of the association. Thematic analysis was used to analyze the qualitative data.

Results

Quantitative Study

In total, 111 physically disabled women and girls participated in this study. Regarding the age of physically disabled women and girls, 20.7% were 15-19, while 25.2% were 45-49. Approximately 36.9% of respondents had a primary level of education. Regarding parents' educational level, 37.8% of mothers had a primary level of education, while 40.5% of fathers had a primary level of education. Most of the respondents (64.9 %) were Protestants. The majority (67.6%) of the respondents were single, 93.7% of mothers were unemployed, and 82% of their fathers were unemployed.

Table 2

Sociodemographic and Socioeconomic Characteristics of Physically Disabled Women and Girls in Masaba North Sub-County, Nyamira County, Kenya

Characteristics of Respondent (n = 111)	Frequency	Percentage
Age		
15-19	23	20.7
20-24	14	12.6
25-29	13	11.7
30-34	8	7.2
35-39	16	14.4
40-44	9	8.1
45-49	28	25.2
Educational level		
No formal education	21	18.9
Pre-primary education	14	12.6
Primary education	41	36.9
Secondary education	27	24.3
College education	6	5.4
University	2	1.8
Religion		
Catholic	39	35.1
Protestant	72	64.9
Marital status		
Divorced	10	9.0
Married	23	20.7
Single	75	67.6
Widowed	3	2.7
Mother's education level		
No formal education	42	37.8
Pre-primary education	3	2.7
Primary education	42	37.8
Secondary education	20	18.0
College education	3	2.7
University education	1	0.9

Characteristics of Respondent (n = 111)	Frequency	Percentage
Father's education level		
No formal education	31	27.9
Pre-primary education	3	2.7
Primary education	45	40.5
Secondary education	24	21.6
College education	8	7.2
Occupation of mother		
Civil servant	2	1.8
Self-employed	5	4.5
Unemployed	104	93.7
Occupation of father		
Civil servant	7	6.3
Self-employed	13	11.7
Unemployed	91	82.0

Menstrual Health Practices of Physically Disabled Women and Girls in Masaba North Sub-County, Nyamira County, Kenya

Most of the respondents (89.2%) used absorbent materials during menstruation. Regarding the type of menstrual material used, 46.5% of the participants used disposable sanitary pads. Table 3 shows the menstrual health practices of physically disabled women are girls.

Table 3

Menstrual Health Practices of Physically Disabled Women and Girls

	Indicator	Category	Frequency	Percentage
1.	Use any form of absorbent material during menstruation (n=111)	Yes	99	89.2
		No	12	10.8
2	Type of absorbent material used during menstruation (n=99)	Sanitary pad only	46	46.5
		Old cloth only	40	40.4
		Sanitary Pad/cloth	13	13.1
2.1	Cloth washed before reusing it (n=52)	Yes	36	69.2
		No	16	30.8
2.2	Materials used to wash cloth (n=36)	Water and soap	35	97.2
		Water and antiseptic	1	2.8

	Indicator	Category	Frequency	Percentage
2.3	Where to air washed cloth to dry (n=36)	Inside in the shade	15	41.7
		Outside in sunlight	21	58.3
2.4	Where dried clothes are kept before being re-used (n=36)	Hidden places	20	55.6
		Together with clothes	16	44.4
3	Frequency of changing absorbent material per day (n=99)	< 3 times	21	21.2
		>3 times	78	78.8
4	Washing of genitalia during menstruation (n=111)	Yes	105	94.6
		No	6	5.4
5	Frequency of washing genitalia per day (n=105)	< 4 times	35	33.3
		> 4 times	70	66.7
6	Materials used to wash genitalia (n=105)	Water and soap	101	96.2
		Water only	4	3.8
7	Bathe during menstruation (n=111)	Yes	108	97.3
		No	3	2.7
8	Frequency of bathing during menstruation (n=47)	At least once a day	108	97.3
		Irregular	3	2.7
9	Where used material is disposed (n=99)	Pit latrine	97	98.0
		Burn	2	2.0
	Safe menstrual health practice		50	45
	Unsafe menstrual health practice		61	55

Barriers to Menstrual Health among Physically Disabled Women and Girls

Physical/infrastructural barriers. Most respondents (77.5%) did not collect water from water sources, whereas 62.2% could not access water for personal hygiene during menstruation. More than half (55.9%) of the respondents could not bathe as frequently as they needed during menstruation. Of the respondents, 78.4% and 75.7% bathing and toilet facilities, respectively were not modified to make them comfortable. Most (75.7%) of the respondents' toilet facilities were not modified to make them comfortable to use during menstruation. Only 24.3% of respondents' toilet facilities were modified to make them comfortable for use during menstruation. The ability to collect water, access water when needed, and bathe as frequently as needed were not statistically associated with safe menstrual health

practices. Modification of toilet facilities was statistically associated with safe menstrual practices.

Table 4

Physical/Infrastructural Barriers and Chi-Square Values Associated with Menstrual Health

Variable		Menstrual health practice status			Chi-square values
		Safe (n=50) n (%)	Unsafe (n=61) n (%)	Total n (%)	χ2/df/P value at 0.05
Access to water services					
Collect water for personal hygiene	Yes	13	12	25 (22.5)	χ2=0.166
	No	37	49	86 (77.5)	df=1
					Sig.=0.828
Able to access water when needed to bathe/clean during menstruation.	Yes	20		42 (37.8)	χ2=0.181
	No	31	22	69 (62.2)	df=1
			38		Sig.=0.698
Access to hygiene (bathing) services					
Able to bathe as frequently as needed during menstruation.	Yes	25	24	49 (44.1)	χ2=1.019
	No	25	37	62 (55.9)	df=1
					Sig.=0.341
Bathing facility modified to make it easy and comfortable to bathe.	Yes	15	9	24 (21.6)	χ2=3.769
	No	35	52	87 (78.4)	df=1
					Sig.=0.065
Access to sanitation services					
Toilet facility modified to make it comfortable to use.	Yes	20	7	27 (24.3	χ2=12.146
	No	30	54	84 (75.7)	df=1
					Sig.=0.001*

* Significant at $p < 0.05$

Social environment barriers. More than half (62.2%) of the respondents had forgone social events due to mensturation. Most respondents (67.6%) had missed cooking or eating with others during menstruation. Most (60.4%) of the physically disabled women and girls could not shower and change in privacy at home. Forgoing social events and missing out on cooking/eating with others were not significantly associated with safe menstrual health practices. The ability to shower and change in privacy at home was statistically associated with safe menstrual health practices.

Table 5

Social Environment Barriers and Chi-square Values for Menstrual Health

		Menstrual health practice status			Chi-square values
Variable		Safe (n=50) n (%)	Unsafe (n=61) n (%)	Total n (%)	χ2/df/p value at 0.05
Recently forgone a social event due to menstruation.	Yes	33			χ2=0.570
	No	17	36	69 (62.2)	df=1
			25	42 (37.8)	Sig.=0.556
Missed cooking/eating with others due to menstruation.	Yes	34			χ2=0.008
	No	16	41	75 (67.6)	df=1
			20	36 (32.4)	Sig.=1.000
Able to bathe/shower in privacy at home during menstruation.	Yes	27			χ2=7.842
	No	23	17	44 (39.6)	df=1
			44	67 (60.4)	Sig.=0.006*

* Significant at $p < 0.05$

Association between Safe Menstrual Health Practices and the Sociodemographic/ Socioeconomic Characteristics of Physically Disabled Women and Girls

The age of physically disabled women and girls was not significantly associated with safe menstrual health practices (χ2=5.701, df=6, P= 0.466). Similarly, religion was not statistically associated with safe menstrual health practices (χ2=2.032, df=1, P=0.168). The marital status of the women and girls was not statistically associated with safe menstrual health practices (χ2=1.709, df=3, P=0.664).

The education levels of physically disabled women and girls were not statistically associated with safe menstrual health practices (χ2=0.841, df=1, P=0.414). However, the mother's education level was statistically associated with safe menstrual health practices (χ2=5.783, df=1, P=0.021). Similarly, the fathers' educational level was statistically associated with safe menstrual health practices (χ2=4.586, df=1, P=0.036). The mother's occupational status was not statistically associated with safe menstrual health practices (χ2=0.819, df=2, P=0.828). However, the occupation status of the father was statistically associated with safe menstrual health practices (χ2=6.99, df=2, P=0.021).

Table 6

Sociodemographic and Socioeconomic Factors and Chi-Square Values Associated with Menstrual Health Practices

Characteristics of Respondent	Menstrual health status			Chi-square values
	Safe (n=50) n (%)	Unsafe (n=61) n (%)	Total n (%)	χ2/df/P value at 0.05
Age				
15-19	9	14	23 (20.7)	
20-24	5	9	14 (12.6)	χ2=5.701
25-29	5	8	13 (11.7)	df=6
30-34	4	4	8 (7.2)	Sig.=0.466
35-39	10	6	16 (14.4)	
40-44	2	7	9 (8.1)	
45-49	15	13	28 (25.2)	
Religion				
Catholic	14	25	39 (35.1)	χ2=2.032
Protestant	36	36	72 (64.9)	df=1
				Sig.=0.168
Marital status				
Divorced	5	5	10 (9.0)	χ2=1.709
Married	12	11	23 (20.7)	df=3
Single	31	44	75 (67.6)	Sig.=0.664
Widowed	2	1	3 (2.7)	
Educational level				
Primary level and below	32	44	76 (68.5)	χ2=0.841
Secondary level and above	18	17	35 (31.5)	df=1
				Sig.=0.414
Mother's education level				
Primary level and below	34	53	87 (78.4)	χ2=5.783
Secondary level and above	16	8	24 (21.6)	df=1
				Sig.=0.021*
Father's education level				
Primary level and below	31	49	80 (72.1)	χ2=4.586
Secondary level and above	19	12	31 (27.9)	df=1
				Sig.=0.036*
Occupation of mother				
Civil servant	1	1	2 (1.8)	χ2=0.819
Self-employed	3	2	5 (4.5)	df=2
Unemployed	46	58	104 (93.7)	Sig.=0.828
Occupation of father				
Civil servant	6	1	7(6.3)	χ2=6.991
Self-employed	8	5	13 (11.7)	df=2
Unemployed	36	55	91 (82.0)	Sig.=0.021*

* Significant at $p < 0.05$

Association between Safe Menstrual Health Practices and Independent Variables at Multivariate Level

All five significant independent variables from the chi-square test were used for the binary logistic regression analysis. Of the five variables, three remained statistically significant at the multivariate level. All three significant variables were positively associated with safe menstrual health practices.

Physically disabled women and girls whose mothers had attained a secondary level of education and above were 3.794 more likely to have safe menstrual health practices than those whose mothers had a primary level of education and below (OR 3.794, 95% CI 1.345-10.705). Physically disabled women and girls who were able to shower and change in privacy were 2.845 more likely to have safe menstrual health practices than those who could not shower and change in privacy during menstruation (OR 2.845, 95% CI 1.211-6.683). Physically disabled women and girls whose toilet (sanitation) facilities were modified were 2.937 more likely to have safe menstrual health practices than those whose sanitation facilities were not modified (OR 2.937, 95% CI 1.135-7.602).

Table 7

Significant Factors for Menstrual Health Practices of Physically Disabled Women and Girls

							95.0% C.I. for EXP(B)	
	B	S.E.	Wald	Df	Sig.	Exp(B)	Lower	Upper
Toilet facility modified	1.078	.485	4.934	1	.026	2.937	1.135	7.602
Shower and change in privacy	1.045	.436	5.757	1	.016	2.845	1.211	6.683
Mothers' education level	1.333	.529	6.349	1	.012	3.794	1.345	10.705
Constant	-1.192	.326	13.338	1	.000	.304		

Qualitative Study

Qualitative data were collected from 36 respondents. The qualitative findings were grouped into four emerging themes and their respective subthemes, as shown in Table 8.

Table 8

Themes and Subthemes Extracted from FGDs, KIIs, and In-depth Interviews conducted in Masaba North Sub-County, Nyamira County, Kenya.

Themes	Subthemes
1. WASH services	Challenges squatting in standard pit latrines, hygienic conditions
2. Menstrual experiences	Fear of accidental soiling of clothes, feelings of shame/stigma
3. Awareness	Families confine PWDs, ignorance of the needs of PWDs
4. Need	Type, price, and preference of product

1. **Theme one: WASH services.** Most respondents admitted to using inaccessible and unimproved sanitation and unhygienic facilities.

   "I cannot squat to use the pit latrine used by other family members. I have improvised a stool to help me squat and stand easily."

   KII, a physically disabled woman

2. **Themetwo:Menstrualexperiences.** Physically disabled women and girls described menstruation as a secret "unclean" experience. For instance, a physically disabled woman noted.

   "If I want to inform my mother or sister that I am menstruating, I will say "I am sick" or use a term that is only known/used by women to describe menstruation.

3. **Theme three: Awareness.** PWDs are not consulted in the design of WASH facilities in public places or homes. A healthcare professional reported.

   "The budget we receive from the county for construction of WASH facilities in our healthcare facilities is predetermined and does not cater to the needs of PWDs."

4. **Theme four: Needs of physically disabled women and girls.** The cited challenges included high-cost and low-quality sanitary pads and difficulties in placing the sanitary pad in position. During the FGD, a physically disabled woman was noted.

   "Sanitary towels are expensive; thus, we resolve to using an old blanket because it is readily available".

Discussion

The study revealed that more than half (55%) of physically disabled women 'sand girls' menstrual health practices were unsafe. This is consistent with 53.6% unsafe practices reported in Ambo, Western Ethiopia (Ahmed Shallo et al., 2020), and 71.80% in Central Ethiopia (Deriba et al., 2022). However, a higher prevalence of safe menstrual health practices has been reported in studies conducted in Nepal (Bhusal, 2020), Northeastern Ethiopia (Habtegiorgis et al., 2021) and Northeast Ethiopia (Shibeshi et al., 2021). A study conducted in Nepal showed that the educational status of the mother and father was significantly associated with safe menstrual health practices (Bhusal, 2020). Another study conducted in Lira Sub-County observed that fathers' occupation was statistically associated with safe menstrual health practices (Nakaweesi, 2023). This finding is consistent with the results of the present study.

Most physically disabled women and girls use absorbent materials during menstruation. This is consistent with studies conducted in Bangladesh (Ha &Alam, 2022), Ethiopia (Deriba et al., 2022), and Nepal (Bhusal, 2020). Inaccessible WASH facilities are a significant challenge for MHM among adolescents with disabilities in Nepal (Wilbur et al., 2021), Northeastern

Ethiopia (Habtegiorgis et al., 2021), Ghana (Mprah et al., 2021), and Vanuatu (Wilbur et al., 2022). Collecting water for personal hygiene was observed to be a challenge in this study. This finding is similar to the results of a study conducted in Vanuatu (Wilbur et al., 2022). The study showed that most of the physically disabled women and girls in the study had forgone social events, cooking, or eating with others due to menstruation, similar to a study done in Vanuatu (Phillips-Howard, 2022) where menstruators with disabilities were twice as likely to miss social events and three times more likely to eat alone during menstruation.

Conclusion

Safe menstrual health practices were low among physically disabled women and girls. Maternal education level, ability to shower, change in privacy, and modified sanitation facilities are significantly associated with safe menstrual health practices.

Recommendations

The National Council for Persons with Disabilities should ensure the registration of all persons with disabilities and increase access to assistive devices such as lifting devices to facilitate access to water, sanitation, and hygiene services. The Ministry of Water and Sanitation should ensure the involvement of persons with disabilities in the design and construction of the WASH facilities. Families should consult PWD regarding their WASH needs at home. Policymakers should involve Disabled Persons Organizations and disability service providers in policy development and in the planning and implementation of water, sanitation, and hygiene services. Health professionals should offer training and support to caregivers and mothers to enable safe menstrual health practices and support tasks for disabled women and girls

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