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PREVALENCE, MANAGEMENT AND EFFECTS OF MENSTRUAL CYCLE DISODERS IN TEENAGERS OF SELECTED SCHOOLS IN BOMET COUNTY

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ABSTRACT :

Menstrual cycle Disorders (MCDs) among teenage girls has been identified by many medical and education professionals as a major cause of significant anxiety for the adolescent and their families. The World Health Organization reports that up to 70% of Women experience Menstrual Disorders. Globally and also in Kenya, dysmenorrhea as one of the abnormalities has been cited as responsible for the greatest number of school absenteeism among girls leading to subsequent effects on educational outcomes. This study sought to find out the prevalence, management and the effects of menstrual Cycle disorders on health and educational outcomes of the adolescents between 14 and 19 years drawn from 12 schools in Bomet County. Cross-sectional Research Design was used in this study. The study population constituted all girls attending secondary schools in Bomet County and met the inclusion criteria. Cluster sampling technique was used to obtain the schools to participate in the study and simple random sampling was used to obtain participating students. A sample size of 277 drawn for the study was calculated using Fisher's et al formula. Authority to carry out the research was sought from National Commission for Science, Technology and Innovation and thereafter Bomet County education office. Data was collected using a self-administered questionnaire containing closed and open ended questions and the data collected was analyzed using Statistical Package for Social Sciences (SPSS) Software program. The study found out that the prevalence of menstrual cycle disorders was high at 15.69% compared to WHO's 8.75%. Dysmenorrhea accounted for 81% of the cases compared to 60% (dysmenorrhea) globally reported by W.H.O. 76% of the respondents preferred self-management for their menstrual disorders though they were aware of other options for management of menstrual disorders. Menstrual Disorders frequently interfered with class concentration in up to 3.3% of the respondents. Two thirds of the schools did not have a trained health professional to manage Menstrual Disorders. The study concluded that the prevalence of MCDs in Bomet County was high at 15.69% though dysmenorrhea accounted for the highest (81%) number of cases and only one school had a trained health professional. In view of this, employing trained health personnel within the school and offering a compensatory tutorial assistance where the effects of Menstrual Cycle Disorders have a debilitating impact on educational outcomes were some of the recommendations provided.

Keywords: Menstrual Cycle Disorders, World Health Organization, Statistical Package for social Sciences, Dysmenorrhea, Oligomenorrhea, Amenorrhea, Pre-menstrual Tension Syndrome

INTRODUCTION

Adolescence is a transitional stage of physical and psychological development, marked by the onset of puberty and menarche in females. Menstrual health is an essential component of female health and well-being. However, menstrual cycle disorders including dysmenorrhea, oligomenorrhea, menorrhagia, and premenstrual syndrome (PMS) are widespread among adolescent girls globally, yet frequently neglected in health policies and school health programs. In developing regions, particularly in Sub-Saharan Africa, menstrual management is further complicated by socio-economic factors, cultural taboos, and inadequate infrastructure in educational institutions. In Kenya, and specifically in rural counties like Bomet, teenage girls face unique hurdles related to menstrual hygiene management (MHM), lack of accurate reproductive health education, and limited access to medical consultation for painful or irregular cycles.

MATERIALS AND METHODS

Study Site and study

The study was conducted in Bomet County, situated in the South Rift region of Kenya. A descriptive cross-sectional design was utilized to gather quantitative data on prevalence and qualitative insights regarding management practices and effects.

Target Population and Sampling Technique

The target population comprised female secondary school students aged 13–19 years across selected public and private schools in Bomet County. Stratified Cluster sampling technique was used to select the schools for the study i.e. out of the three constituencies in Bomet County; four schools were picked randomly from each constituency. The schools to participate were later sampled in proportion to size i.e. the school with the highest number of girls was eventually picked from each of the four schools. Simple random sampling technique was later used to select the students to participate in the study. Table I shows the number of girls selected per school.

Name of school	Number of Girls selected per school
Mulot Girls High School	610
Chebonei Girls High School	583
Mengit Gilrs High School	400
Total	1593
(Source: Bomet District Education Office, 2014)	

Sampling Size Determination

Sample size was calculated using Fisher et al formula as shown below;

Sample n = (Z^2 * p * (1 - p) / d^2

Where; n = Required sample size

Z = Z-value corresponding to the desired confidence level (e.g., 1.96 for a 95% confidence interval)

P= Prevalence of the population (8.75%) (This is the prevalence of teenagers with MCDs

obtained from W.H.O) - the data in Kenya is currently unavailable.

Q=l-P which is 1- 0.15= 0.85

d= Degree of accuracy usually 0.05

Desired sample

J.96 X J.96(8.75x0.85) = 28.57

0.05 X 0.05

nf= 1583 divideded by (l+ 1583/28) nf= 1583/5.7

nf = 277 students

Data Collection

Data collection was carried out using self-administered structured questionnaires covering demographic data, menstrual history, symptom severity (evaluated using visual analogue scales), management practices, and school attendance records. Focus group discussions (FGDs) were conducted with selected students and school nurse/matron representatives.

RESULTS

Sociodemographic Characteristics of Respondents

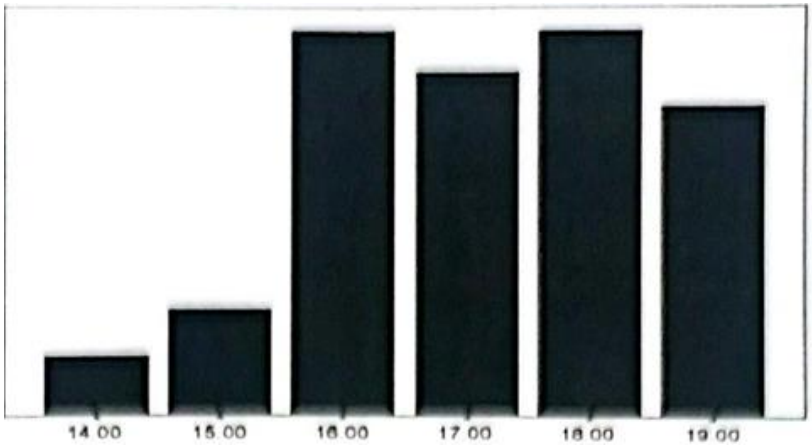
A total of 380 female students participated in the study. The mean age of respondents was 16.2 years, with mean age at menarche reported at 13.4 years. Among the three schools that participated in the study, only one school had a trained health professional that handles students with various ailments including menstrual disorders. The school however largely handles issues with pain whereas other complications are referred for specialized care. In the remaining two schools, students with such disorders seek permission from teachers on duty to be attended either at home or nearby health facility.

Distribution of Respondents by Age

The figure below shows the distribution of respondents based on age.

Figure 1; Age of Respondent

Age of respondent



Most of the girls in high school are between the age of 16 and 19 accounting for 89.8 % of the total simple. There mean age was 17.14 years. Those aged 14 and 15 years accounted for 12.2 percent.

Distribution of Respondents by Religion

The data collected showed that majority of the respondents are Christians accounting for 99.3% of the respondents. Table 3 summarizes the analysis results based on religion.

Table 3: Religion of Respondent

Religion	Frequency	Percent
Christians	270	99.3
Muslims	1	0.4
Hindus	1	0.3
Total	272	100.0

Distribution of Respondents by Other Characteristics of Menstruation

The study also sought to determine the distribution of the respondents by other characteristics of menstruation. Table 5 shows the results of the analysis of data collected on these characteristics.

Table 5: Table of other Menstrual Disorders

Characteristic	**Response**	**n=272**	Percentage (%)
Amenorrhea other than pregnancy	YES	9	**3.3%**
	NO	263	**96.69%**
Duration of flow	l-3days	204	75%
	4-7days	56	**20.58%**
	>7days	12	**4.41%**

Number of times pad is changed on day of heaviest flow

Sanitary pads	**Frequency**	**Percentage**
l-3pads	184	**67.64%**
4-8pads	72	**26.47%**
>8pads	16	**5.88%**

The study indicates that most students have not missed menses for three or more months (96.69%). 75% of the girls have a normal duration of the cycle, but extreme cases of prolonged bleeding was also realized at 4.41% of the study sample. Many students do change

School Administration Check List

Table 2 shows the various schools, available health services and respective service providers.

SCHOOL	HEALTH SERVICE PROVIDER	AVAILABLE SERVICES
1	Trained Health Professional (Nurse)	Largely Pain Meds, anatacids, antibiotics, make referrals to hospitals
2	Teacher on Duty	Pain meds stored in the office, students mostly given permission to seek treatment outside school
3	Teacher on Duty	Pain meds stored in the office, students mostly given permission to seek treatment outside school

Among the three schools that participated in the study, only one school had a trained health professional that handles students with various ailments including menstrual disorders. The school however largely handles issues with pain whereas other complications are referred for specialized care. In the remaining two schools, students with such disorders seek permission from teachers on duty to be attended either at home or nearby health facility.

Prevalence of Menstrual Disorders

Disorder/symptom	Prevalence	Primary Description
Dysmenorrhea	74.5%	Moderate to severe lower abdominal pain/cramping during menstruation
Irregular Cycles	28.2 %	Lengths shorter than 21 or longer than 45 days
Menorrhagia	18.4%	Heavy Bleeding requiring frequent pad changes (>6 pads/day)
Premenstrual Tension syndrome	62.1%	Mood changes , headaches, fatigue and bloating prior to flow

Overall, the findings suggest that menstrual health problems are relatively common among the study participants. Dysmenorrhea and Premenstrual Tension Syndrome were the most frequently reported conditions, demonstrating that menstrual pain and premenstrual symptoms constitute the greatest reported burden. Although irregular cycles and menorrhagia were less prevalent, they remain important reproductive health concerns that require attention.

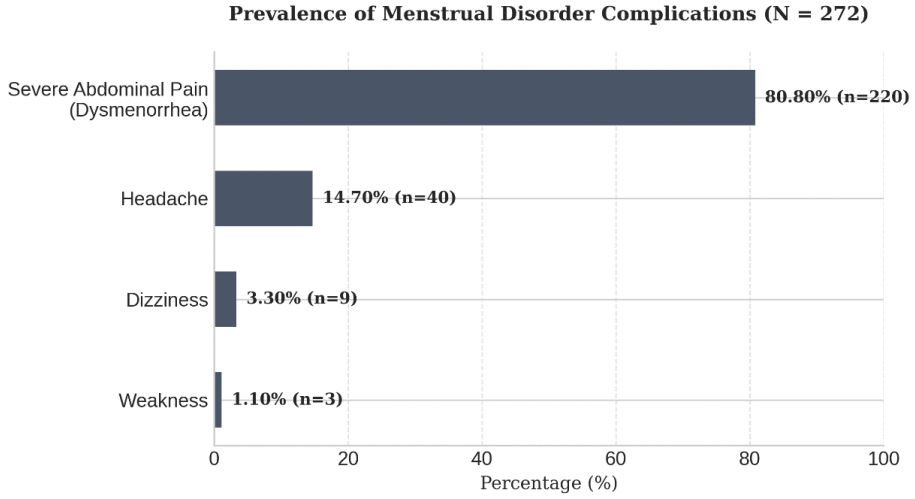
Distribution of Respondents by how their MCDs are managed

Data collected on the distribution of respondents by how MCDs are managed showed that majority of the respondents opt to take a bed rest accounting for 65.89%. Others go for herbal medication, painkillers, referral to health institution, exercise and coffee or tea in the following proportions 11.98%, 8.75%, 1.84%, 5.06% and 6.45% respectively. Table 7 shows these results.

Management of Menstrual Cycle Disorders

Characteristics	Remedy	Frequency	Percentage (%)
Dysmenorrhea, headache, and dizziness	Rest	141	65.89%
	Herbal medication	25	11.68%
	Pain medication from school	17	7.94%
	Referral to health institution	11	5.14%
	Coffee and tea	12	5.61%
	Multiple methods	5	2.34%
Total	—	**211**	**100.00%**

The findings on the management of menstrual cycle disorders indicate that rest was the most commonly used remedy for managing dysmenorrhea, headaches and dizziness, reported by 141 participants (65.89%). This suggests that the majority of participants preferred resting as their primary approach to managing menstrual-related discomfort. Herbal medication was the second most commonly used remedy, reported by 25 participants (11.68%), indicating that some participants relied on traditional or herbal approaches to relieve menstrual symptoms. Pain medication obtained from school was reported by 17 participants (7.94%), suggesting that a relatively small proportion accessed conventional pain relief through school-based services. Additionally, 12 participants (5.61%) reported using coffee and tea to manage their symptoms, while 11 participants (5.14%) sought referral to a health institution for medical attention. Only 5 participants (2.34%) reported using multiple management methods, making this the least commonly reported approach.



The findings on the prevalence of menstrual disorder complications among the 272 participants indicate that severe abdominal pain associated with dysmenorrhea was the most commonly reported complication, affecting 220 participants (80.8%). This suggests that menstrual pain was the major complication experienced by the majority of the participants, highlighting the significant burden of dysmenorrhea on their menstrual health and general well-being. Headache was the second most frequently reported complication, affecting 40 participants (14.7%). This indicates that some participants experienced headaches associated with menstrual disorders, which may contribute to physical discomfort and interfere with their daily activities. Dizziness was reported by 9 participants (3.3%), while weakness was the least reported complication, affecting only 3 participants (1.1%). Although these complications were less common, they remain important because they may affect participants' physical functioning and overall well-being.

Table 10: Table on the extent of interference of periods on concentration per age of the students Respondents

Nature of the effect	Age (years)	N=206	% of Total
Slight	14	10	-1.85%
Slight	17-19	112	5-1.36%
Severe	15-16	84	-W.77%

Data analysis on the effect of MCDs on concentration of respondent per age shows that those aged between 15 and 16 are severely affected while those between 17 and 19 are less affected.

Management Strategies

The majority of students (68.0%) relied on non-pharmacological self-care practices such as hot water bottles, resting, or herbal teas. Over-the-counter analgesics (e.g., paracetamol, ibuprofen) were utilized by 52.3% of participants, though often in non-standard dosages due to lack of medical guidance. Only 8.5% of students had sought clinical medical attention for severe menstrual pain or excessive bleeding.

Effects on Education and Quality of Life

Over 55% of respondents reported missing at least one school day per cycle due to menstrual pain or heavy bleeding. Furthermore, 81.2% reported decreased concentration and active engagement during classroom lessons while experiencing symptoms.

Discussion, Conclusion and Recommendation

Conclusion

On the basis of the findings of this study, the only one school had a trained health professional (school nurse). A majority of school girls who had MCDs (76%) did self-management whereas 13% were attended to by health professional and 11.86% used herbal medication. Consequently, up to 35% of the respondents have ever been absent from class due to menstrual disorders. Out of these, almost half (52%) of them have often been absent due to MCDs. This means at one time or another or at least once but not always. However, those who menstrual disorders had severe impact on class concentration were 3.3%. 2.5% and who consequently reported that menstrual disorders interfered very much with extra curriculum activities. Therefore, the county government's education department should consider employing trained health personnel for each of the schools who can address Menstrual Cycle Disorders and symptoms within the school. Finally, the study recommended offering compensatory tutorial assistance to those students whose menstrual disorders had a debilitating impact on class attendance and making appropriate referrals.

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