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Menstrual problems and their prevalence among adolescents in Akwa Ibom

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A B S T R A C T

Dysmenorrhoea, premenstrual syndrome and menstrual hygiene are leading contributors to the burden of disease borne by adolescent secondary school girls and this study sought to determine the prevalence of menstruation-related problems among adolescent school girls in southern Nigeria. A cross-sectional study design was used with a minimum sample size of 601 derived over 4 different centres (2 rural and 2 urban) using a multi-stage sampling technique. Analysis was done using SPSS version 17, and Odds ratio, Chi square and t test were used to compare possible differences between urban and rural variables and significance was at the 95% confidence level. Tables were used to highlight the results obtained. Menstrual problems of public health importance such as dysmenorrhoea, heavy bleeding and weakness, and premenstrual symptoms were a burden to adolescent school girls in both rural and urban areas in this study. A renewed approach to adolescent health provision will help negate the negative developmental, educational and socio-economic consequences of their menstrual problems.

Introduction

Menstrual problems are common, and can be disruptive to a woman's daily life and productivity (Walraven, 2001). Dysmenorrhoea, premenstrual syndrome and menstrual hygiene are leading contributors to the burden of disease borne by adolescent secondary school girls (Sharma and Gupta, 2003; Avasarala and Panchangam, 2008; El-Gilany *et al.*, 2005).

Furthermore, the most frequent problem for which adolescents and their parents seek medical attention is dysmenorrhoea, because of its painful nature (Sule and Ukwenya, 2007). During adolescence, dysmenorrhoea leads to high rates of absence from school and non-participation in activities (Mark and Gluckman, 2006; Lee *et al.*, 2006).

Adinma and Adinma reported that dysmenorrhoea manifesting either as abdominal pain, or waist pain, constitutes the commonest medical problem amongst 66.2% adolescent girls (Adinma and Adinma, 2008). This is corroborated by other studies that dysmenorrhoea is the most common gynaecological disorder among female adolescents, with a prevalence of 61.27% from a study in Kaduna (Sule and Ukwenya, 2007). Similarly the result of a Malaysian study showed the prevalence of dysmenorrhoea in adolescent school girls to be 67.7% (Lee *et al.,* 2007). Also, a study in Nepal reported the prevalence of spasmodic dysmenorrhoea to be 67% with impairment of daily routine in as many as 20% of the girls (Sharma *et al.,* 2008a). However another study done in India by Sharma *et al.* (2008b) puts the prevalence at 33%. Avasarala and Panchangam (2008) in an Indian study which compared to rural and urban adolescent girls had a prevalence of dysmenorrhoea of 55.7% for rural girls and 52.5% for urban girls. El-Gilany *et al.* (2005) in a study of Egyptian adolescent female students got the rural-urban prevalence of dysmenorrhoea as 80.1% and 69.6% respectively. Apart from the associated physical discomfort, dysmenorrhoea is also believed to be a manifestation of functional anomalies of the female reproductive system along with associated gastro-intestinal symptoms include vomiting, anorexia, and increased appetite (Adinma and Adinma, 2008).

Another commonly reported menstrual problem is premenstrual syndrome, which was reported in 24.4% of the participants in a study that was conducted in Onitsha (Adinma and Adinma, 2008). However; a higher prevalence of 74.6% was observed in a Malaysian study where the participants had similar sociocultural characteristics (Lee *et al.,* 2006).

Irregular menstruation, regarded as unpredictable duration, amount of flow, and length of menstrual flow, was reported with a 53% prevalence in an Indian study by Khanna *et al.* (2005) A lower level prevalence of 16.2% was noted in a Malaysian study by Lee et al; they also observed irregular menstruation to be higher within the 1st two years of menarche (Lee *et al.,* 2006).

This study sought to determine the prevalence of menstruation-related problems among adolescent school girls in southern Nigeria.

Materials and Methods

The study was conducted in Akwa Ibom State which is located in the coastal south-southern part of Nigeria. The study subjects were in-school adolescent girls who had attained menarche; adolescent girls from secondary schools in selected rural and urban local government areas of the State took part in this study.

Inclusion criteria: Girls aged 10–19 years in the selected secondary schools who had attained menarche.

Exclusion criteria: Adolescent girls who had not attained menarche

This was a cross-sectional study design among adolescent secondary school girls in rural and urban areas.

A minimum sample size of 546 was calculated. To allow for 10% (i.e. 55) invalid, incomplete and non-responses, the total sample was 546+55= 601 for the four locations giving an average of 150 students per location.

This study used quantitative research methods. It consisted of a survey to identify the actual menstrual problems and their prevalence among this group of girls, options utilized by the girls when they need help with regards to menstrual issues in selected local government areas of Akwa Ibom state. The sampling frame consisted of adolescent girls attending the 237 co-educational and girls' school from the list of rural and urban secondary schools in Akwa Ibom State.

A multi-stage sampling technique was used to select the study sample. The first stage involved the stratification of local government areas into rural and urban (seven out of the thirty one local government areas in Akwa Ibom State are classified as urban, the other twenty four are rural) (Okon, 2008). Two local government areas were selected from each stratum using the simple random sampling technique, by use of table of random numbers. In the second stage, among the thirty eight secondary schools (co-educational and girls') that were listed in the four local government areas, one school each was selected per local government area (total of 4) using the simple random sampling technique, by use of table of random numbers, after stratification had been done. In the third stage, each school was stratified into lower (31) and upper (42) senior secondary classes to represent junior and senior adolescents.

Selection of the classes was by stratified and then simple random sampling, using the table of random numbers, within each strata. The fourth stage involved selection of eligible students (2,867) that met the inclusion criteria (in-school girls aged between 10 and 19 years who had attained menarche) distributed over the selected streams of each class by the simple random sampling technique by use of table of random numbers. In the use of table of random numbers, every list was itemized. Six hundred and one adolescent girls were selected.

Pre-test was carried out in a rural girls' school and an urban girls' school after the study sites had been selected. At each site, Junior Secondary class 3 (10) and Senior Secondary class 1 (10) female adolescents were involved at this stage. The outcome led to the re-phrasing of certain terms in the questionnaire.

Data collection was carried out at the school site during school hours, during the break period, with informed consent from the respective school principals. Pre-tested self-administered questionnaires, following an anonymous respondent approach were shared to the selected students (who had gathered at the assembly hall) without the presence of teachers and male students. The questionnaire sought for information about demographic variables, types of menstrual problems. Three female field research assistants were trained to assist with the conduct of the survey, confidentiality and procedures for responding to students' questions. Quantitative data generated from the survey was entered into the Statistical Package for Social Sciences (SPSS) software, Version 17 for Windows, and analyzed. Percentages were calculated to draw out differences in variables between urban and rural adolescent girls (where they did not add up to 100%, the responses were mutually exclusive, and where they did not add up to the required percentage, there were no responses). Cross tabulation and Chi-square tests were used to determine any association between selected socio-demographic variables, and perception and health-seeking behaviour variables. Odds ratio, Chi square and t test were used to compare possible differences between urban

and rural variables and significance was at the 95% confidence level. Tables were used to highlight the results obtained.

Ethical clearance was received from Ethical Committee of the University of Uyo Teaching Hospital, while approval was obtained from the Ministry of Education and the respective school authorities. Informed consent was obtained from parents/guardians of participating students for minors; and from students that had attained the age of 18.

Anonymity and confidentiality of the respondents were maintained in all phases of the study. Due to the sensitive nature of the study, female assistants were used at all times in administering the quantitative and qualitative surveys.

Informed consent was sought from participants with respect to voluntary participation and freedom to discontinue the interview/discussion at any stage.

There were no risks to the participants in the study.

Results and Discussion

Table 1 displays the common menstrual problems and their prevalence among the rural and urban adolescent girls. There was a very high prevalence of dysmenorrhoea among both groups: 64.8%-rural and 68.9%-urban. This was followed by some symptoms of premenstrual syndrome like general body weakness which was 53.1% and 56.6% among rural and urban residents respectively; abdominal pains 50% among urban residents as against the 28.3% among rural residents; menorrhagia (heavy menstrual flow) 41.8% among rural respondents compared to the 30.1% among urban respondents; oligomenorrhoea (irregular menses) 31.8% among urban respondents as against 18.7% among rural respondents. About one-third of all respondents had scanty menstrual flow, and also felt sad (a premenstrual symptom). Very few of the respondents (≤ 4%) had prolonged menstrual flow and prolonged interval of menstrual flow. Observed rural-urban differences that were statistically significant were abdominal pains, oligomenorrhoea, menorrhagia and very scanty flow.

Table 2 displays the health-seeking behaviour (school absence) for menstrual problems and associated factors among rural and urban adolescent school girls. A good proportion of respondents, 21.6% girls in the rural areas, stayed away from school due to menstrual pains while 15.7% did so in the urban areas and the observed difference was statistically significant (X^2=4.904, p=0.027); in the rural areas a higher proportion of respondents (15.8%) as against 6.6% of urban respondents, stayed away from school every 2–3months, but in the urban areas a higher proportion (7.7%) as against 4.8% in the rural areas, did so every month. There was an observed difference which was statistically significant (X^2=10.512, p=0.005).

Few girls had ever seen a doctor for menstrual pains among all respondents: 10.6% rural and 13.6% urban respondents, the observed difference was not statistically significant (X^2=0.954, p=0.329). Almost one-third of girls (28.9% rural and 30.8% urban) with menstrual pains took drugs (the observed rural- urban difference was not statistically significant X^2=0.110, p=0.740). The commonest drugs taken were Panadol, Bucopan, and then non steroidal anti-inflammatory drugs (NSAIDs) (ibuprofen, feldene, ladinax) and traditional medication. More girls in the rural than urban areas took traditional medication 2.6%**:** 1.7%; but more girls in the urban than rural areas took

NSAIDs 2.4%**:** 1.1% however, 52% rural and 55% of urban respondents took panadol.

For the associated menstrual factors, 24.5% girls stayed away from school in the rural areas while 12.2% stayed away in the urban areas (the observed difference was statistically significant {X^2=14.337, p=0.000}).

Table 3 displays the health-seeking behaviour (consultation) for menstrual problems and associated factors among rural and urban adolescent school girls. Self-medication (51.6% rural and 47.2% urban respondents) rather than consultation with healthcare personnel was preferred in both groups. 'Visit to a traditional healer' had the least proportion: 4% rural and 1% urban respondents. Statistically significant observed differences were noted in health consultation with a medical doctor, medicine vendor and traditional healer (X^2= 5.777; 7.432; 5.081 and p= 0.016; 0.006 and 0.024 respectively). A higher proportion of urban (45.8%) than rural (35.5%) respondents would insist on visiting a health centre if they knew a health condition was harmful.

Poor health seeking behaviour for menstruation and associated problems in adolescents as a public health problem cannot be over-emphasized.

This work explored the type of menstrual problems they experience and their respective prevalence and their health-seeking behaviour for menstrual problems and associated factors among the girls with respect to their locales with the object of informing the design and delivery of health interventions in this part of the country. The urban girls were younger with a mean age of 14.9 years within the range of 13–19 years while the rural girls were 15.0 years and 12–19 years respectively. The observed difference in the mean age between the urban and rural girls was not statistically significant (t=1.2, p=0.232), implying that both groups were comparable. Age ranges for both groups are within the range in a south eastern and south western Nigeria studies (Adinma and Adinma, 2008; Abioye-Kuteyi, 2000).

Also, the urban girls attained menarche earlier than the rural girls with the mean age of attainment of menarche being 12.7 years within the range of 9-16 years for the urban group and 13 years within the range of 10–18 years for the rural group. These are consistent with most studies: those obtained in studies in Malaysia, northern Nigeria, India, and Egypt (Lee *et al.,* 2006; Sharma *et al.,* 2008a; Avasarala and Panchangam, 2008; El-Gilany *et al.,* 2005). A western Nigeria study however had 14 years as the menarcheal age (Moronkola and Uzuegbu, 2006). There was however a statistically significant observed difference in the mean age of onset of menarche between the rural and urban respondents, the urban girls had an earlier onset of menarche compared with the rural girls (t= 2.9, p= 0.002). This is in tandem with the findings of an Indian study which suggests that socio-economic conditions determine the age for onset of menarche, favouring early onset for girls of higher socioeconomic status (Mehta *et al.,* 1991).

Dysmenorrhoea was the commonest menstrual problem noted among the respondents (though the observed rural-urban difference was statistically insignificant with the implication of a similar distribution), as in various studies, (Adinma and Adinma, 2008; Sule and Ukwenya, 2007; Chan *et al.,* 2009) this was followed by a combination of premenstrual symptoms, as also noted in two Indian studies (Sule and Ukwenya, 2007; Chan *et al.,* 2009).

Table.1 Menstrual problems encountered by respondents

VARIABLE	RURAL(N=273) n(%)	URBAN(N=286) n(%)	X^2, df, p
Dysmenorrhea	177(64.8)	197(68.9)	0.830,1,0.370
Oligomenorrhea(prolonged interval of menses)	11(4)	3(1)	18.329,3,0.000
Oligomenorrhea(irregular menses)	51(18.7)	91(31.8)	18.329,3,0.000
Menorrhagia(prolonged flow)	4(1.5)	10(3.5)	8.578,2,0.014
Menorrhagia(heavy flow)	114(41.8)	86(30.1)	8.305,2,0.004
Very scanty flow	97(35.5)	72(25.2)	18.329,2,0.000
Premenstrual symptoms			
Abdominal pains	77(28.2)	142(50)	26.036,1,0.000
Abdominal bloating	18(6.6)	14(4.9)	1.839,2,0.399
Breast swelling	29(10.6)	41(14.3)	1.758,1,0.185
Breast pain	50(18.3)	45(15.7)	0.659,1,0.417
Feeling sad	83(30.4)	76(26.6)	0.125,1,0.724
Crying easily	33(12.1)	43(15.0)	0.000,1,0.992
Getting angry easily	40(14.7)	61(21.3)	1.685,1,0.194
Headache	51(18.7)	64(22.4)	0.926,2,0.629
Facial pimples	2(0.7)	7(2.4)	1.935,1,0.164
Waist pain	4(1.5)	7(2.4)	1.935,1,0.164
Severe weakness	145(53.1)	162(56.6)	4.185,2,0.123

*Multiple responses

Table.2 Health-seeking behaviour for menstrual problems and associated factors; school absence

VARIABLE	RURAL. N=273 n(%)	URBAN. N=286 n(%)	(X^2; df; p)
School absence due to menstrual pains?	59(21.6)	45(15.7)	4.904; 1; 0.027
Frequency of absence			10.512; 2; 0.005
Every month	43(15.8)	19(6.6)	
Every 2-3 months	13(4.8)	22(7.7)	
Every 4 months or more	3(1.1)	4(1.4)	
Ever seen a doctor for menstrual pains?	29(10.6)	39(13.6)	0.954; 1; 0.329
*Take medicine for menstrual pain?	79(28.9)	88(30.8)	0.110; 1; 0.740
Panadol	52(19.0)	55(19.2)	
Buscopan	23(8.4)	24(8.4)	
NSAIDs	3(1.1)	7(2.4)	
Traditional	7(2.6)	5(1.7)	
School absence due to associated factors?	67(24.5)	35(12.2)	14.337; 1; 0.000
Frequency of absence-associated factors			3.073; 2; 0.215
Every month	41(15)	15(5.2)	
Every 2-3 months	18(6.6)	12(4.2)	
Every 4 months or more	8(2.9)	8(2.8)	

*Multiple responses

Table.3 Health-seeking behaviour for menstrual problems and associated factors; consultation

VARIABLE	RURAL (N=273) n(%)	URBAN (N=286) n(%)	(X^2; df; p)
*Health consultation with:			
Dr	9(3.3)	23(8)	5.777; 1; 0.016
Nurse	45(16.5)	43(15)	0.221; 1; 0.638
Medicine vendor	53(19.4)	32(11.2)	7.432; 1; 0.006
Traditional healer	11(4.0)	3(1)	5.081; 1; 0.024
Nobody/nothing	33(12.1)	31(10.8)	0.215; 1; 0.643
Self medication	141(51.6)	135(47.2)	1.104; 1; 0.293
Mother	7(2.6)	34(11.9)	0.215; 1; 0.643
Insists on visiting health centre when ill	97(35.5)	131(45.8)	5.361; 2; 0.069

*Multiple responses

This indicates to dysmenorrhoea and premenstrual symptoms as common menstrual problems in most settings across the globe. In this study, heavy menstrual flow was also a serious problem among the respondents as was also noted in an Indian study (Chan *et al.,* 2009). The implication of this is a high rate of absenteeism and non- or poor performance among adolescent girls especially in school (Sule and Ukwenya, 2007; Sule and Ukwenya, 2007).

The proportion of respondents in this study (21.6% rural and 15.7% urban) that had been absent from school due to dysmenorrhoea is similar to findings from other studies. The urban proportion is as reported by a northern Nigeria study (15.03%) and an Indian study (12.1%) (Sule and Ukwenya, 2007; Chan *et al.,* 2009).

Another Indian study reported a low 7%, but several other studies have 34–50% as their findings for absenteeism due menstruation-related problems (Andersch and Milsom, 1982; Sundell *et al.,* 1996; Banikarim *et al.,* 2000). Unlike findings in an Indian study (Andersch and Milsom, 1982), more rural than urban girls played truancy in this study. Also in this study, absence from school due to other associated factors had the same pattern as that due to dysmenorrhoea. These proportions are high enough to result in gender-based inequalities in schools' performance (El-Gilany *et al.,* 2005).

A lower proportion of rural respondents (10.6%) and urban respondents (13.6%) had ever consulted a doctor due to menstrual pains as compared with the 17.93% from a study in northern Nigeria (Coker *et al.,* 1994). An even lower proportion of 6.45% as reported in an Indian study consulted a doctor for menstrual pains (Chan *et al.,* 2009). Worse still, an Egyptian study reported that only 2.7% did consult a Physician (El-Gilany *et al.,* 2005). This establishes the need to delineate barriers to

proper health-seeking behaviour of adolescents in our environment.

Respondents of both settings had a favourable disposition to taking drugs for menstrual pain: 28.9% rural and 30.8% urban, among which panadol was the most frequently taken drug and then buscopan; this fits into the finding of 34.7% in an Egyptian study (El-Gilany *et al.,* 2005). It also conforms to an Israeli study findings that more urban than rural adolescents resort to treatment for dysmenorrhoea (Goldstein-Ferber and Granot, 2006).

On the other hand, an Indian study maintains that more rural (36%) than urban respondents (28%) sought treatment (Khanna *et al.,* 2005). A northern Nigerian study had more than 50% of respondents taking drugs for menstrual pain, and mostly analgesics too (Sule and Ukwenya, 2007). Similarly, a south eastern Nigeria study observed that 75% respondents took drugs (mainly analgesics) for relief of menstrual pain (Adinma and Adinma, 2008). Indulgence in self medication for the treatment of associated menstrual problems was high among the respondents (51.6% rural and 47.2% urban). This is consistent with findings from Egyptian, Indian and Hispanic studies (El-Gilany *et al.,* 2005; Davis and Westhoff, 2001; Zegaye *et al.,* 2009). A good number of adolescents were noted to resort to self-treatment and a few to the use of traditional medicines. The negative effects of self-treatment ought to be emphasized to the adolescents. Adolescents need to be made aware that self-treatment often results in a delay in seeking health care. Medicine vendors and nurses were also preferred during consultations over associated problems than the desire to consult with medical doctors. It could be inferred that the need for treatment of these problems is high.

Conclusions

Menstrual problems of public health importance such as dysmenorrhoea, heavy bleeding and weakness, and premenstrual symptoms were a burden to adolescent school girls in both rural and urban areas in this study, as menstrual symptoms negatively affect school attendance and study time among adolescent female students. Health-seeking behaviour for menstrual problems among the respondents in this study was generally poor. Truancy in schools due to menstrual and associated problems was a common finding among the respondents, especially among the adolescent girls in the rural areas. When tied to consultation with a healthcare personnel and readiness to take drugs, especially self medication, an underlying coping strategy (in the name of 'home remedy') among the rural respondents could be inferred in contrast to the eagerness for ingestion of drugs by the urban respondents.

Recommendations

There is a need to enrich the contents of sources of health information with relevant information for adolescents that early health seeking and simple but effective interventions could reduce the burden of dysmenorrhoea and other menstrual problems with a resultant gender mainstreaming with respect to the academics and others aspects of life of these girls.

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