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RESEARCH ARTICLE

HEALTH SEEKING BEHAVIOUR FOR MENSTRUAL PROBLEMS AMONG SCHOOL GIRLS AND ITS ASSOCIATED FACTORS: AN IMPLICATION FOR HEALTH EDUCATION

\*Ibanga Eyo Ekong

Department of Community Health, University of Uyo Teaching Hospital, P.M.B. 1136, Uyo, Akwa Ibom, Nigeria

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ABSTRACT

A comparative interventional study was conducted over a four month period in 2 urban and 2 rural secondary schools in Akwa Ibom State. Multistage sampling method was used to select 600 girls. Data was analyzed using the SPSS version 20.0. Chi – Square test and Multiple Logistic regression were used to analyze the data and level of significance was set at  $p < 0.05$ . Results revealed that the mean age for attainment of menarche among urban respondents was  $12.7 \pm 1.15$  years, with the mean age for attainment of menarche being  $13 \pm 1.24$  years among the rural adolescents [ $t = 2.9$ ;  $p = 0.002$ ]. It was also observed that a sizeable proportion, (21.6%) of girls in the rural areas stayed away from school due to menstrual pains while 15.7% did so in the urban areas and more respondent indulged in self- medication (51.6% rural and 47.2% urban) rather than seeing a doctor for menstrual health problems (3.3% rural and 8% urban). Experience at the health clinic was found to be significantly associated with health seeking behaviour in the urban (OR = 0.09, C.I = 0.028-0.0279,  $p < 0.001$ ) while proximity showed a statistically significant association with the health seeking behaviour among the rural school girls (OR = 0.34, C.I = 0.116-0.992,  $p < 0.001$ ).

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INTRODUCTION

Adolescents, according to the World Health Organization, are people between the ages of 10 and 19 years. Adolescence is that period between puberty and adulthood. It is also defined as the "...post pubertal population younger than 20 years who have a distinct life style" (Caldwell, 1998). According to the 1991 census, adolescents account for about 23% of the Nigerian population (Federal Ministry of Health, 2007). Adolescents are in a stage of rapid development during which they acquire new capacities and are faced with many new situations. It is a period when specific health concerns and issues emerge, and the risk of ill health increases (Kolbe *et al.*, 1997). Of all challenges facing adolescents, those associated with sexual maturation are the most distinctive as well as the most problematic (Katchadourian, 1990; Nath and Garg, 2008). In female adolescents, the main sign of sexual maturation is menstruation. Menstruation is defined as the discharge of blood, secretions, and tissue debris from the uterus that recurs in non-pregnant breeding-age primate females at approximately monthly intervals and that is considered to

represent a readjustment of the uterus to the non-pregnant state following proliferative changes accompanying the preceding ovulation (Retrieved from [www.chuv.ch/dgo/en/dgo\\_home/.../dgo\\_fer\\_glossaire.htm](http://www.chuv.ch/dgo/en/dgo_home/.../dgo_fer_glossaire.htm) on 23/07/09).

Help-seeking generally refers to the use of "formal" supports, which is defined as health facilities, youth centres, formal social institutions or professional care providers, either in the public or private sector. In many cases, "help-seeking" is used interchangeably with "health-seeking," which refers more narrowly to seeking services or remedies for a specific ailment or illness (Frydenberg, 1997). A proposed definition of help-seeking in a study by Barker is: Any action or activity carried out by an adolescent who perceives herself/himself as needing personal, psychological, affective assistance or health or social services, with the purpose of meeting this need in a positive way. This includes seeking help from formal services – for example, clinic services, counselors, psychologists, medical staff, traditional healers, religious leaders or youth programmes – as well as informal sources, which includes peer groups and friends, family members or kinship groups and/or other adults in the community (Barker, 2007). Health-Seeking Behaviour is not just a one-off, isolated event. MacKian *et al.* in their study suggest it is part and parcel of a person's, a family's or a community's identity, which is the result of an evolving mix of social, personal, cultural and experiential factors (MacKian

\*Corresponding author: Ibanga Eyo Ekong,  
Department of Community Health, University of Uyo Teaching  
Hospital, P.M.B. 1136, Uyo, Akwa Ibom, Nigeria.

*et al.*, 2004). The probability of seeking any type of health care at all is significantly predicted by age (the probability is greater among those aged 16-30 years), gender (the probability is 1.73 times greater among male patients) and literacy of household head (the probability is 1.33 times greater for those in households where the head is literate) (Ahmed *et al.*, 2000). Hence, Ogunfowokan and Babatunde, and Meyer-Weitz *et al.* advocate the need for adolescents to be aware that self-treatment often results in delay in seeking health care (Ogunfowokan and Babatunde, 2010; Meyer-Weitz *et al.*, 2000). Unrau *et al.* note that requests for help could be made by young persons in need, or by caregivers on their behalf, and that help-seeking behaviours are regarded as skills that can be learned (Unrau and Grinnell, 2005). Many studies have found a strong relationship between the reliable presence of parental support and health-seeking or risk-avoiding behaviour among teens (Kington and O'Sullivan, 2001). Three categories of adolescent help-seeking behaviour are hereby proposed by Barker (Barker, 2007):

The first is help-seeking for specific health needs, including health services (in the formal health care system or from traditional healers and pharmacists), as well as seeking health-related information. This is generally called health-seeking behaviour. The second is help-seeking for normative developmental needs, including help in completing school, or help related to vocational orientation/training, or employment-seeking, relationship formation and concerns, understanding the changes associated with sexuality or puberty, and/or other concerns that are frequently associated with adolescence. The third is help-seeking behaviour related to personal stress or problems, as in the case of family crises, family violence or victimization by abuse, relationship stresses, acute financial needs, homelessness, and/or needs related to chronic or acute ill-health. These are specific, problem-related psychosocial needs that go beyond the normative needs of young people (Barker, 2007). It can therefore be adduced that help-seeking for menstrual issues can be referred to as health-seeking behaviour. Moronkola and Uzuegbu in an urban western Nigerian study revealed that adolescent girls recorded more than one health seeking behaviour for menstrual problems (Moronkola and Uzuegbu, 2006). Though these proportions were not mutually exclusive, 53% prayed, 50% engaged in self medication, 50% endured it while only 20% consulted medical doctors. Forty three percent of the participants used paracetamol.

Chan *et al.* in an urban study in Hong Kong enumerated factors affecting the decision to seek medical attention to be the severity of their symptoms 85.2%, opinion of a family member 75.7%, the doctor's gender 68.7%, anxiety about facing embarrassing questioning 65.3%, cost of the consultation 57.4%, worry about physical examination 56.6%, and time constraints 52.9% (Chan *et al.*, 2009). Majority of the girls preferred seeking advice from their family members 70.0% and friends 40.7%, while only 12.7% and 6.5% preferred advice from doctors and teachers, respectively; this shows a marginal difference in the pattern seen in the Nigerian studies. In another urban Nigerian study by Esimai and Esan, it was observed that about 10.5% of the students decided to seek medical attention for menstrual abnormalities (Chan *et al.*, 2009). They also

observed that it was far above the report of 5.3% of rural young adolescents that consulted doctors, and 22.4% of the respondents were observed to indulge in self medication in a previous rural study by Singh *et al.* (1999). This finding was in keeping with the previous reports, by various authors, of adolescent girls not seeking medical attention for menstrual-related symptoms because menstruation was considered personal and highly secretive, or because of fear they preferred self medication as an alternative technique (Deligeoroglou *et al.*, 2007; Lee *et al.*, 2006; Sharma *et al.*, 2008; Garg *et al.*, 2001; Houston *et al.*, 2006; Thomas *et al.*, 1990; O'Connell *et al.*, 2006; Demir *et al.*, 2000; Fakeye and Adegoke, 1994; Durge and Varadpande, 1995).

Singh *et al.* agree with Durge *et al.* that such a practice could cause harm rather than reduce their problem (Singh *et al.*, 1999; Durge and Varadpande, 1995). There was some contrast in a rural study by Poureslami and Osati-Ashtiani where the results revealed that an average of 67% of students with dysmenorrhoea practiced self-medication using over-the-counter medications and only 18% consulted a healthcare provider (Poureslami and Osati-Ashtiani, 2002). It was also realized by Esimai and Esan (Esimai and Omoniyi-Esan, 2010), as reported by Chan *et al.* (Chan *et al.*, 2009) that severity of pain was a principal factor affecting decision to seek medical care for dysmenorrhea.

The aim of this study was therefore to assess the health-seeking behaviour for menstrual problems and associated factors among rural and urban adolescent secondary school girls in Akwa Ibom state, South- South Nigeria.

## MATERIALS AND METHODS

This study was a comparative interventional study design among adolescent secondary school girls in rural and urban areas. The study subjects were in-school adolescent girls who had attained menarche. Adolescent girls from secondary schools in the selected rural and urban local government areas of Akwa Ibom State took part in this study. Inclusion criteria are school girls aged 10 – 19 years in the selected secondary schools who had attained menarche. The exclusion criterion is adolescent girls who had not attained menarche. The estimated population of this study comprised 431,393 adolescence girls in Akwa Ibom State. The sample size for this study was determined using sample size formula for comparative study. Based on an African study (Egypt), the prevalence of health seeking behaviour was taken to be 80% and 69.6% for rural and urban. Minimum sample size of 546 was obtained and to allow for 9.9% non response, the sample size was rounded up to 600 with 150 students selected from each of the four locations in the study area.

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). 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 stratification and then simple random sampling, using the table of random numbers, within each stratum. The fourth stage involved selection of eligible students (2,867) that met the inclusion criteria (in-school girls aged between 10-19 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 adolescent girls were selected.

Health seeking behaviour for menstrual problem and associated factors questionnaire was divided into two sections. Section A comprised of 10 items which assessed the demographics of the respondents while section B comprised of 18 items which assessed the health seeking behaviour for menstrual problem among the respondents. This instrument was pretested on 20 female adolescents who did not take part in the main study. The outcome of this pretesting led to the rephrasing of certain items on the questionnaire. The questionnaire was administered at the baseline and after intervention; intervention was by Information, Education and Communication (IEC) in which the teaching and learning were approached through creative and involving method.

Quantitative data generated from the survey was entered into the Statistical Package for Social Sciences (SPSS version 20.0) software 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 test Univariate association between variables while the multiple logistic regression was used to test association between health seeking behaviour and its possible determinant factors. Hence, odd ratios and its 95% confidence interval was estimated and  $p < 0.05$  was considered to be statistically significant.

## RESULTS

A total of 600 secondary school girls were recruited for this study of which 559 respondents representing 93.2% correctly filled and returned the questionnaire. Result in Table 1 displays the socio-demographic variables of adolescent girls in the urban and rural areas. It shows that majority of the urban and rural girls were between 12-15 years, the observed differences in their ages was not statistically significant ( $p = 0.08$ ,  $p > 0.05$ ). They were almost equally shared between SS1 and SS2 classes, and the majority of the respondents were of the Christian faith. The fathers of girls in the urban areas were mostly public servants (54.2%), whereas they were mostly (54.3%) of the business class (especially trading in local wares e.g. food items, clothes etc.) in the rural areas. In the urban areas, 50% of fathers as compared with 23.5% in the rural areas had a tertiary

education. Only a few of respondents' fathers, 1%, were illiterates in the urban areas. The illiterates were also marginal (3.7% of respondents' fathers) in the rural areas. The distribution of fathers' occupation was significantly different between rural and urban girls selected ( $p < 0.01$ ).

**Table 1. Demographics Characteristics of Secondary School Girls**

Demographics characteristics of the subjects	Urban (n =286)	Rural (n=-273)	p value
Age (years)			
12- 15	214(74.8)	177(64.8)	0.08
16-19	71(25.2)	96(35.2)	
Class			
SS1	143(50.0)	136(49.8)	0.965
SS2	143(50.0)	137(50.2)	
Religion			
Christianity	284(99.7)	267(97.8)	0.373
Islam	1(0.35)	1(0.37)	
Traditional	1(0.35)	4(1.47)	
Fathers' occupation			
Public servant	151(54.2)	91(33.3)	<0.001**
Businessmen	87(30.3)	151(54.3)	
Farming	4(1.4)	9(3.3)	
Unemployed	1(0.3)	8(2.9)	
Others	36(12.6)	2(0.7)	
No responses	7(2.4)	12(4.4)	
Mothers' occupation			
Public servant	119(41.7)	63(23.1)	<0.001**
Business men	105(35.1)	171(62.6)	
Unemployed	10(3.4)	9(3.3)	
Farming	2(0.7)	16(5.9)	
Others	46(16.1)	8(2.9)	
No response	4(1.4)	6(2.2)	
Fathers' highest education			
None	3(1.0)	10(3.7)	<0.001**
Primary	22(7.7)	39(14.3)	
Post primary	113(39.5)	153(56.0)	
Tertiary	143(50.0)	62(22.7)	
No response	5(1.7)	9(3.3)	
Mothers' highest education			
None	2(0.7)	12(4.4)	<0.001***
Primary	23(8.0)	57(20.9)	
Post primary	125(43.7)	149(54.6)	
Tertiary	128(44.8)	53(19.4)	
No response	8(2.3)	2(0.7)	
Age at menarche (years) (Means $\pm$ SD)	11.8 $\pm$ 1.5	12.6 $\pm$ 1.8	

A higher proportion of mothers (41.7%) in the urban areas were public servants and 23.5%, of the business class. But among mothers in the rural areas, 61.4% were of the business class compared with 23.5% who were public servants. In the urban areas, 44.8% urban and 19.4% rural respondents' mothers had a tertiary education. Only a few (0.7% of respondents' mothers) were illiterates in the urban areas; the illiterates were also marginal (4.4% of respondents' mothers) in the rural areas. The distribution of mothers' occupation between rural and urban girls was also significantly different ( $p < 0.01$ ).

Results in Table 2 display the health-seeking behaviour for menstrual problems and associated factors among rural and urban adolescent school girls. A good proportion of respondents, 13.6% girls in the urban areas have seen a doctor for menstrual pain pre intervention but after intervention, the percentage was increased to 16.15%. The number of respondents in the urban area who were absent from school as

a results of menstrual pain reduced after intervention (15.7% and 14.3% respectively), that of the rural also reduced significantly after intervention (21.6% and 12.8% respectively,  $p < 0.001$ ). Percentage of respondent who have seen doctor in the rural area also increased after intervention (10.6% pre intervention and 12.8% post intervention). The rate of students' absenteeism from school as a result of menstrual symptom was reduced from 12.2% to 9.4% pre and post intervention in the urban while in rural it reduced from 24.5% to 23.8% respectively. There was an improvement in the number of respondents who seek health consultation from doctor in the rural (3.3% and 6.2% pre and post) and in urban (8.0% to 10.8% pre and post intervention). The intention to visit health centre at any time increased significantly pre and post in among rural girls ( $p < 0.001$ ) and urban school girls ( $p < 0.001$ ). Also, intention to visit health centre when health condition is harmful also increased significantly from 45.8% to 65.0% pre and post intervention among urban school girls ( $p < 0.001$ ) and from 35.5% to 40.3% among rural school girls. These differences were statistically significant ( $p < 0.001$ ). Persons with whom menstrual issues were discussed had a similar pattern in both groups: the most preferred person was the mother but the observed difference was not statistically significant. This was followed by female friends, sisters and female cousins.

The multiple logistic regression results in Table 3 shows that proximity (OR = 1.93, C.I = 0.7252-4.950,  $p = 0.177$ ,  $p > 0.05$ ), special permission to visit any health centre (OR = 0.880, C.I = 0.334-2.320  $p = 0.797$ ,  $p > 0.05$ ) and denied request to go health centre (OR = 0.593, C.I = 0.184-1.919,  $p = 0.593$ ,  $p > 0.05$ ) were all insignificantly associated with health seeking behaviour for menstrual problems among adolescence school girls in the Urban but experience at the health centre was significantly associated with their health seeking behaviour ( $p < 0.001$ ). Secondary school girls in the urban who had unpleasant experience at the health centre had a significant reduced odds of seeking health services for menstrual problems in the hospital compare with those who have pleasant experience at the health centre (OR = 0.09, C.I = 0.028-0.279). Among rural school girls on the other hand, proximity to health centre was significantly associated with their health seeking behaviour ( $p = 0.048$ ,  $p < 0.05$ ), the odds of health seeking behaviour for menstrual problem among school girls who had health centre far from them was significantly less than those who had hospital close to them (OR = 0.09, C.I = 0.028-0.279).

Table 4 is a Multiple logistic regression showing associated Risk factors of health seeking behaviour for menstrual problems among adolescence in the rural (Odd ratios, 95% confidence Interval and 1% significant level).

**Table 2. Health seeking behaviour for menstrual problems and associated problems of menstruation among adolescence**

Variable	Urban (n =286)			Rural (n =273)		
	Pre intervention	Post intervention	p	Pre Intervention	Post intervention	p
Seen doctor because of menstrual pain	39(13.6)	46(16.1)	0.113	29(10.6)	35(12.8)	0.202
Absence from school because of pain	45(15.7)	41(14.3)	0.009	59(21.6)	53(12.8)	0.525
Absence from school because of menstrual symptoms	35(12.2)	27(9.4)	0.282	67(24.5)	65(23.8)	0.842
Taken medicine for menstrual pain on their own	39(13.6)	46(16.1)	0.411	79(28.9)	35(12.8)	<0.001
Frequency of absence from school as results of menstrual						
Every month	15(42.9)	15(55.6)	0.244	41(61.2)	39(60.0)	0.191
Every 2-3	12(34.3)	10(37.0)		18(26.9)	18(27.7)	
Every 4 months or more	8(22.9)	2(7.4)		8(11.94)	9(13.9)	
Health consultation						
Doctor	23(8.0)	31(10.8)		9(3.3)	17(6.2)	
Nurse	43(15.0)	51(17.8)		45(16.5)	55(20.1)	
Medicine vendor	32(11.2)	34(11.9)	0.817	53(19.4)	50(18.3)	0.559
Traditional healer	3(1.0)	3(1.0)		11(4.0)	11(4.0)	
Self medication	135(47.2)	121(42.3)		141(51.6)	130(47.6)	
Mothers	34(11.9)	34(11.9)		7(2.6)	8(2.9)	
Nobody	31(10.8)	36(12.6)		33(12.1)	26(9.5)	
Intention to visit health centre at any time	225(78.7)	244(85.3)	<0.001	170(62.3)	183(67.0)	0.033
Intention to visit health centre when health condition is harmful	131(45.8)	186(65.0)	<0.001	97(35.5)	110(40.3)	0.258
Who do you discuss menstrual problems with						
Mother	205(75)	212(77.7)		233(81.5)	235(82.2)	
Father	13(4.8)	13(4.8)		28(9.8)	28(9.8)	
Aunt	55(20.1)	55(20.1)	0.999	104(36.4)	104(36.4)	0.999
Uncle	7(2.6)	6(2.2)		8(2.8)	8(2.8)	
Sister	92(33.7)	96(35.2)		162(56.6)	162(56.6)	
Brother	5(1.8)	5(1.8)		12(4.2)	12(4.2)	
Male cousin	5(1.8)	5(1.8)		10(3.5)	10(3.5)	
Female cousin	58(21.2)	62(22.7)		123(43)	123(43)	
Female friend	96(35.2)	100(36.6)		176(61.5)	176(61.5)	
Male friend	9(3.3)	11(4.0)		26(9.1)	45(15.7)	
Female teacher	1(0.4)	2(0.7)		1(0.3)	1(0.3)	

\*Multiple responses allowed

**Table 3. Multiple logistic regression showing associated Risk factors of health seeking behaviour for menstrual problems among adolescence in the Urban**

Variables	B value	S.E	Wald	P value	OR	95% C.I
Constant	2.144	1.096	3.824	0.051		
Proximity to health centre [Near] Far	0.657	0.481	1.868	0.177	1.93	0.752-4.950
Special permission to visit any health centre [Yes], No	-0.127	0.494	0.066	0.797	0.880	0.334-2.320
Denied request to go to health centre [Yes], No	-0.522	0.599	0.759	0.384	0.593	0.184-1.919
Experience at the health centre [Unpleasant], pleasant	-2.421	0.584	17.208	<0.001**	0.09	0.028-0.279

Adjusted for socio-demographics features of the subjects. \*p<0.01. Significant at 1%.

**Table 4. Multiple logistic regression showing associated Risk factors of health seeking behaviour for menstrual problems among adolescence in the rural (Odd ratios and 95% confidence Interval)**

Variables	B value	S.E	Wald	P value	OR	95% C.I
Constant	2.194	0.904	5.897	0.015		
Proximity to health centre [Far], Near	-1.081	0.547	3.903	0.048	0.34	0.116-0.992
Special permission to visit any health centre [Yes], No	-0.719	0.561	1.644	0.200	0.487	0.162-1.463
Denied request to go to health centre [Yes],No	-0.015	0.410	0.001	0.970	1.02	0.454-2.270
Experience at the health centre [unpleasant], pleasant	-2.421	0.584	17.208	<0.001**	0.09	0.028-0.279

Adjusted for socio-demographics features of the subjects. \*\*p<0.01. Significant at 1%.

There was a significant effect of experiences from a previous visit to a health centre on the girls' health seeking behaviour.

## DISCUSSION AND CONCLUSION

Poor health seeking behaviour for menstruation and associated problems in adolescents as a public health problem cannot be over-emphasized. This work explored the health-seeking behaviour for menstrual problems and associated factors. Majority of the respondents were Christians and were equally distributed between SS1 and SS2 classes. As expected there was a natural distribution of township: village habitation among both groups as more people in the urban areas resided in the township and vice versa in the rural areas. Also, the urban girls attained menarche earlier than the rural girls with the mean age of attainment of menarche being 11.8years and 12.6 years for 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.*, 2008; 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). 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 Ukwanya, 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 (Sundell *et al.*, 1996; Banikarim *et al.*, 2000; Coker *et al.*, 1994). Unlike findings in an Indian study (Avasarala and Panchangam, 2008), 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. 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.

In the face of a threatening health event, about one third of rural respondents as against more than two fifths of urban respondents said they would insist on visiting a health centre. Menstruation-related health consultation for associated problems showed some improvements over the pre-intervention stage, this is consistent with findings in an Indian study (Kington and O'Sullivan, 2001). Consultations with mothers among respondents remained the norm as alluded to in previous studies in India and Nigeria (Lee *et al.*, 2006; Drakshayani and Venkata, 1994; Koff E and Rierdan, 1995; Tiwari *et al.*, 2006). However, more rural than urban respondents preferred to discuss with their female friends, and their preference for female teachers more than doubled in this study unlike in a northern Nigeria where no girl preferred a female teacher (Sule and Ukwenya, 2007), but in keeping with the Ethiopian study where female teachers were preferred (Aga Khan University, 2003). This again establishes the need for well trained female counsellors in educational institutions.

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