Original Article

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Perception of Menstruation among Adolescent Secondary School Girls in Akwa Ibom State, Nigeria: An Implication For Sexual Health Education for Secondary School Girls

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Background: This study is a comparative interventional study which examined the effect of Information Education and Communication (IEC) on the perception of menstruation among adolescence secondary school girls in Akwa Ibom State, South-South, Nigeria. Adolescent perception of menstruation was assessed based on how they perceive the importance of menstrual knowledge, attitude to menstrual problems and menstrual problems that require treatment.

Methodology: Sample size of 600 adolescent females, 300 from rural and 300 from urban areas were selected from a population of 431,293 adolescent females by multi-stage sampling technique. Randomization was done with the use of table of random numbers. Frequencies and percentages were used to analyse categorical variables and descriptive statistics were computed for continuous variables. Chi-square test was used to determine association between sociodemographics of the respondents and their perception of menstruation. The effect of this intervention was evaluated after three months and the Statistical Package for Social Sciences (version 20.0) was used to enhance data analysis. Statistical significance was tested at 0.05 level.

Results: Of the 600 copies of the questionnaire administered, 559(93.2%), 286 from urban and 273 from rural were retrieved. Results showed some statistically significant difference in the perception of menstruation between rural and urban school girls ($p<0.05$). There was also a significant improvement among rural and urban respondents after intervention ($p<0.05$).

Conclusion: As a result, health education on menstruation should be started early enough in secondary schools and this should be done on a regular basis for reinforcement of the messages.

Keywords: Adolescent girls, health-seeking behaviour, menstrual problems, Urban, Rural

Introduction

Adolescence is a stage of rapid development during which human beings acquire new capacities and are faced with many new situations. It is a period when specific health concerns and issues emerge, and hence at this stage the risk of ill health increases (1). Of all challenges facing adolescents, those associated with sexual maturation are the most distinctive as well as the most problematic (2, 3). 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 (3).

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The definition of illness or a problem depends primarily on the perception and statement of the subjects (4). Perception is inescapably an antecedent to behaviour. One acts not in response to an objective interpretation of events or language but, rather, in accordance to one's perceptions, surrounding events or language (5). A study by Adinma and Adinma gives a range of perceptions about menstruation from being a physiological process to being an assurance of fertility. Other perceptions include: release of 'bad blood', cleansing of the womb, and washing off of an undeveloped baby (6). Drakshayani and Venkata in an Indian study, Agyekum in a Ghanian study, and Koff and Rierdan in an American study, have noted that some even perceive events like menstrual bleeding to emanate from the abdomen, intestines, and kidneys, or occurring as a consequence of curse from god, sin, and disease (7, 8, 9). The major reason behind such misconceptions is lack of education and awareness as well as personal and social inhibitions in discussing such matters especially in rural areas (10).

Furthermore, it is not an uncommon experience for girls to attain menarche without knowing about menstruation (23). Fatusi and Hindin in a sub-sahara African contextual study, Pswarayi in a Zimbabwean study, Gupta and Nutan in an Indian study, Turker, and Whisnant *et al* in America all agree that there are several misconceptions and traditional beliefs regarding menstruation, and that practices during menstruation are mostly unsafe and unhygienic (11-15). Issues of psychological or emotional changes and the real significance of the event are lacking, probably as a result of parents' carefulness to avoid the introduction of the subject of sex (13,16); yet many adolescent and pre-adolescent girls have been reported by some studies to be sexually active (15, 17, 18).

Osujih in a Nigerian study, and Dilorio et al and Turker have expressed that there is a great need to prepare girls adequately for menstruation, else they will be led to look for information from sources which may be unreliable (14, 19). The specific objective of this study is to examine how menstruation is perceived among adolescent secondary school girls in urban and rural LGAs of Akwa Ibom State, South-South, Nigeria.

Study Design

This study is a comparative interventional study design conducted among adolescent secondary school girls in some select rural and urban areas of Akwa Ibom State South-Southern, Nigeria, the State lying between latitudes 4° 32' and 5° 53' North, and longitudes 7° 25' and 8° 25' East (24). The population of this study comprised 431,393 adolescent female in Akwa Ibom State. A minimum sample size of 546 was calculated and to allow for attrition, the total sample was rounded up to 600, and 150 female adolescents were selected from each of the 4 locations. Sample of 150 subjects were selected from two rural and two urban communities in the study area by multi stage random sampling. 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) (25).

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. 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 10-19 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 recruited for the study Data collection was carried out at the school site during school hours, during the break period, with permissioon from the respective school principals. Pre-tested self-administered questionnaires, following an anonymous respondent approach were shared to the selected students who gathered at the assembly hall without the presence of teachers and male students. The questionnaire sought for information about demographic variables and perception of menstrual problems. The administration of the questionnaire was facilitated through the help of three female registrars. The intervention was by Information, Education and Communication (IEC) in which teaching and learning were approached through creative and involving methods. The researcher appropriately educated the girls on what normal menstruation is, in adolescents.

Data generated from this study was entered into the Statistical Package for Social Sciences (SPSS version 20). Percentages were used to analyse qualitative variables (where they did not add up to 100%, the responses were mutiple, and where they did not add up to the required percentage, there were no responses). Chi-square test was used to determine association between selected socio-demographic variables and their perception towards menstruation. Odds ratios and 95% confidence interval were estimated. Of the total 600 copies of the questionnaire administered, 559(93.2%), 286 from urban and 273 from rural were retrieved.

Results

Table-1 displays the socio-demographic variables of adolescent girls in the urban and rural areas. Result shows that respondents from urban were younger (mean age 14.9 years) than those from rural (mean age 15 years), though the observed difference in their mean age was not statistically significant (t =1.2; p=0.232, p>0.05). In both groups majority of respondents were aged between 10-15 years. They were almost equally shared between SS1 and SS2 classes, and the majority of the subjects were of the Christian faith. Also, the fathers of subjects from 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 and 3.7% for rural.

Table-2 displays the perception of menstrual issues (menstrual knowledge) among adolescent girls in the rural and urban areas. For the rural respondents, 57.1% and 31.9% had little and no knowledge, respectively. About the function of menstruation at the inception of menarche, whereas in the urban areas, 61.9% and 16.8% of the respondents had little and no knowledge, respectively, about the function of menstruation at the inception of menarche; the observed difference between both group of girls was statistically significant pre-intervention (17.858; p<0.001) and post-intervention (22.861; p<0.001). The suggested age range for menarche was 9-20 years, with a mean of 12.6 years in the rural areas but it was 8-18 years, with a mean of 11.8 years in the urban areas. The observed difference was also statistically significant pre and post-intervention (48.373; p<0.001 and 46.667; p<0.001 respectively).

Table-1: Socio-Demographic Character of Respondents

Socio-Demographic Characteristics	Urban (n=286) N (%)	Rural (N=273) N (%)
Respondents' Age		
Range	13- 19 years	12 - 19 years
Mean	14.9 ±1.1 years	15.0±1.56 years t= 1.2; p= 0.232
Class 12-15 years Class 16-19 years	214(74.8) 71(25.2)	177(64.8) 96(35.2)
SS1	143(50)	136(49.8)
SS2	143(50)	137(50.2)
Religion		
Christianity	284(99.7)	267(97.8)
Islam	1(0.3)	1(0.4)
Traditional	1(0.4)	4(1.5)
Father's Occupation		
Public Servant	151(54.2)	91(33.3)
Businessman	87(30.3)	151(54.3)
Professionals	32(10)	2(0.8)
Unempl./student	1(0.3)	8(3.0)
Politician	4(1.4)	0
Farmer	4(1.4)	9(3.3)
No response	7(2.4)	12(4.4)
Father's Highest Education		
None	3(1.0)	10(3.7)
Primary	22(7.7)	39(14.3)
Post primary	113(39.5)	153(56.0)
Tertiary	143(50)	62(22.7)
Mother's occupation		
Public servant	119(41.7)	64(23.5)
Businesswoman	105(35.1)	183(61.4)
Professionals	41(16)	9(3.3)
Unempl./Student	10(3.4)	9(3.3)
Politician	3(1.0)	0(0)
Clergy	2(0.7)	1(0.4)
Farmer	2(0.7)	16(5.9)
No response	4(1.4)	6(2.2)
Mother's highest education		
None	2(0.7)	12(4.4)
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(2.8)	2(0.7)

Table-2: Adolescent Girls Perception of Menstruation: Menstrual Knowledge

Variables	*Pre-intervention*			*Post-intervention*		
	RURAL N (%)	**URBAN N (%)**	**χ^2 ; df;p**	**RURAL N (%)**	**URBAN N (%)**	**χ^2 ; df; p**
Knowledge about mens.			*17.856; 2;<0.0001*			*22.861; 2; <0.0001*
Little idea of function	156(57.1)	177(61.9)		156(57.1)	177(61.9)	
Fair idea of function	30(11)	61(21.3)		30(11.0)	61(21.3)	
No idea of function	87(31.9)	48(16.8)		87(31.9)	48(16.8)	
Age menarche should occur			*48.373;11;<0.0001*			*46.667; 10; <0.0001*
Range	9-20 years	8-18 years		9-20 years	8-20 years	
Mean	12.6±1.8 years	11.8±1.5 years		12.3 years	11.6 years	
CI @ 95%	12.3-12.8	11.5-12.1		12.05-2.5	11.378-11.742	
Personal view about menses			*31.353; 2; ;<0.0001*			*33.303; 2; <0.0001*
It is Normal	233(85.3)	281(98.3)		238(87.2)	284(99.3)	
It is Abnormal	29(10.6)	3(1)		28(10.3)	2(0.7%)	
It is a curse	11(4)	2(0.7)		7(2.6)	0(0)	
Importance of menses			*30.414; 3;<0.0001*			*23.243; 2; <0.0001*
For reproductive development	178(65.2)	238(83.5)		188(68.9)	240(83.9)	
For physical development	62(22.7)	38(13.3)		57(20.9)	40(14.0)	
It is Unnecessary	33(12.1)	8(2.8)		28(10.3)	6(2.1)	
Sign that one is not pregnant	0(0)	2(0.8)				

Table-3: Adolescent Girls' Perception of Menstruation; Menstrual Attitude

Variables	*Pre-intervention*			*Post-intervention*		
	RURAL N (%)	**URBAN N (%)**	**χ^2 ; df;p**	**RURAL N (%)**	**URBAN N (%)**	**χ^2 ; df;p**
Stay away from people during menses			*42.351;1; 0.00*			*14.899;1; 0.00*
Yes	154(56.4)	203(71)		94(34.4)	57(19.9)	
No	119(43.6)	83(29)		179(65.6)	229(80.1)	
View about associated problems			*9.311; 2; 0.010*			*9.311; 2; 0.010*
Normal	122(44.7)	159(55.5)		125(45.8)	162(56.6)	
Abnormal	43(15.8)	25(8.7)		46(16.8)	26(9.1)	
Indifferent	108(39.6)	102(35.7)		102(37.4)	98(34.3)	
Need for treatment of associated problems			*7.403; 2; 0.025*			*5.622; 2; 0.06*
Yes	131(48)	105(36.7)		135(49.5)	113(39.5)	
No	68(24.9)	79(27.6)		66(24.2)	81(28.3)	
Don't know	73(26.7)	99(34.6)		72(26.4)	92(32.2)	
No response	1(0.4)	3(1)				
Reason for need of treatment			*6.407; 3; 0.093*			*10.274; 3; 0.016*
Pain relief	52(19)	48(16.8)		57(20.9)	52(18.2)	
Avoid problems like depression	13(4.8)	22(7.7)		0	24(8.4)	
Peace of mind	17(6.2)	18(6.3)		19(7.0)	19(6.6)	
Don't know	38(13.9)	68(23.8)		59(21.6)	18(6.3)	
No response	153(56)	130(45.4)				

Table-4: Adolescent Girls Perception of Menstruation; Menstrual Problems that Require Treatment*

Variables	*Pre-intervention*			*Post-intervention*		
	RURAL N (%)	**URBAN N (%)**	**χ^2; df; p**	**RURAL N (%)**	**URBAN N (%)**	**χ^2; df; p**
Pain of any kind	120(44)	101(35.3)	3.715; 2; 0.156	119(43.6)	100(35)	4.136; 2; 0.126
Severe menstrual pain	100(36.6)	108(37.8)	13.381;2; 0.001	102(37.4)	142(49.7)	15.652; 2; <0.0001
Heavy bleeding + weakness	122(44.7)	130(45.5)	12.723; 2; 0.002	123(45.1)	162(56.6)	11.734;2; 0.003
Bleeding lasting >8 days	83(30.4)	134(46.9)	12.693; 2; 0.002	87(31.9)	150(52.4)	25.773; 2; <0.001
Interval of menses <21 days	58(21.2)	46(16.1)	2.763; 2; 0.251	59(21.6)	60(21)	1.022; 3 ; 0.796
Interval of menses >35 days	39(14.3)	55(19.2)	2.038; 2; 0.361	42(15.4)	62(21.7)	3.919; 2; 0.141
No menses up to 16years	79(28.9)	101(35.3)	3.034; 2; 0.219	82(30)	140(49)	21.094; 2; <0.0001
Menses starting before 9years	71(26)	68(23.8)	1.876; 2; 0.391	72(26.4)	82(28.7)	2.687; 2; 0.261
Feeling upset during menses	106(38.8)	101(35.3)	0.769; 2; 0.681	111(40.7)	121(42.3)	0.195; 2; 0.907

*Appropriate responses only

In the rural areas, 85.3% of respondents felt menstruation was a normal process with 10.6% feeling it was abnormal and only 4.0% felt it was a curse unlike in the urban areas where 98.3% of respondents felt menstruation was a normal process with 1% feeling it was abnormal, and only 0.7% felt it was a curse. Here again, the observed difference was statistically significant pre and post-intervention (31.353; p<0.001 and 33.303; p<0.001, respectively). Among rural respondents, 65.2% felt that menstruation was important for reproductive development, 22.7% for physical development while 12.1% felt it was unnecessary, and among urban respondents 83.5% of the girls felt menstruation was important for reproductive development, 13.3% for physical development while 2.8% felt it was unnecessary and 0.4% felt it was a sign that one had not conceived. The observed difference was again statistically significant pre and post-intervention 48.373 and 30.414; p<0.001 and 48.373; 23.243; p<0.001, respectively.

Table-3 shows the perception of menstrual issues (*menstrual attitude*) among adolescent girls in the rural and urban areas. On the need to stay away from people during menstruation, 56.4% and 71% of the girls in the rural and urban areas respectively concurred; the observed difference was statistically significant between the rural and urban respondents pre and post intervention (χ^2 = 42.351; p<0.0001 and χ^2=14.889; p<0.0001, respectively).

For problems associated with menstruation, 44.7% and 55.5% of rural and urban respondents, respectively, felt they were normal (should normally occur with menstruation) and the observed differences pre and post intervention were statistically significant (χ^2=9.311; p=0.01, p<0.05) and (χ^2=10.109; p=0.006, p<0.01) respectively; 48% rural respondents and 36.7% urban respondents felt some form of treatment was needed, the observed difference was statistically significant pre-intervention (χ^2=7.403; p=0.025), but not statistically significant post intervention (χ^2=5.622; p=0.06, p>0.05); however, 24.9% and 27.6% of rural and urban respondents, respectively, did not see the need for any treatment.

Various reasons were given on the need for treatment of menstrual problems: 19% and 16.8% of rural and urban respondents respectively, felt treatment was needed for pain relief; 4.8% rural respondents and 7.7% urban respondents felt it was to prevent problems like depression; 6.2% and 6.3% rural and urban respondents, respectively, felt it gave peace of mind. Though the observed difference was not statistically significant pre-intervention (χ^2=6.407; p=0.093, p>0.05), it was statistically significant post intervention (χ^2=10.274; p=0.016, p<0.05). *Table-4* displays the perception of menstrual issues (*menstrual problems that require treatment*) among subjects. More than one-third of all respondents felt that severe menstrual pain needed

treatment, and more than two-fifths of all respondents felt that heavy bleeding and weakness needed some treatment. The observed difference was statistically significant pre (χ^2=13.381; p=0.001, p<0.001 and χ^2 =12.723; p=0.002, p<0.001, respectively) and post intervention (χ^2=15.652; p<0.0001, p<0.001 and χ^2 =11.734; p=0.003, p<0.01, respectively).

Discussion

This work explored the perception of menstruation among adolescent girls in some select rural and urban areas in Akwa Ibom, South-South Nigeria with respect to their locales with the aims of informing the design and delivery of health interventions in this part of the country. This study has shown that 4% of the rural girls and 0.7% of the urban girls perceived menstruation to be a curse unlike the 18.5% in a study in India (7), and nil in a study in Anambra (6). In an Indian comparative study, 9% urban respondents and 26 % rural respondents perceived menstruation to be a curse (10).

Majority of respondents in both settings of this study, 98.3% urban and 85.3% rural adolescent, perceived menstruation to be a normal process, this is in line with the majority of girls' perception in an Indian study which recorded 66.15% (10). Also, majority of the respondents in this study (65.2% rural and 83.5% urban) felt it was for reproductive development. The observed rural-urban differences pre and post intervention were statistically significant; both groups had marginal increases in perception with regards to the importance of menstruation. This shows a fair knowledge of the significance of menstruation among respondents in contradict findings of 39.3% who perceived menstruation to be a physiological process in an Anambra study (3).

Moreover, more urban respondents (71%) than rural respondents (48%) felt they should stay away from people during menstruation; this conforms to the pattern noted in two Indian studies where more than 50% of respondents were restricted from various domestic and social activities. Hence the existence of cultural taboos cannot be ruled out in our environments (7,20).

Also, about half of the rural and urban respondents felt that associated menstruation problems were normal, but about two-fifths of rural and urban respondents felt there was a need to treat these associated problems. This is in tandem with the findings in the study by Khanna *et al* where these problems were seen as necessary (21).

Conclusion

This Observed rural-urban difference that was statistically significant pre-intervention became statistically insignificant post intervention, showing an appreciable improvement in knowledge that treatment was needed for such problems. The first issue that needs to be addressed is adolescents' knowledge about the physiology of menstruation, and then the right perceptions and practices. Cultural practices have crept into this modern day and age in terms of various forms of restriction from domestic and social activities during menstruation. O' Connell *et al* had stressed on cultural practices and perception as determinants for health seeking behaviour (22).

Conflict of Interest

The authors declare that no conflict of interest exists in publishing this article.

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