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**Poverty and Sexual Morbidity among Rural Women in Nigeria in an Era of HIV/AIDS**

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**Abstract**

Addressing rural women's sexual health issues is important to the global social agenda because of the rapid spread of HIV/AIDS and increasing rates of sexually transmitted infections (STIs) in Nigeria. Rural women live in precarious and impoverished conditions which predispose them to sexual morbidities. We explored the magnitude of self-reported sexual morbidity, its impact, perceived causes and cultural definitions, and treatment-seeking behaviours among women in rural Ado-Ekiti, Ekiti State, Nigeria. The study interviewed a total of 110 women irrespective of their marital status, using a multistage random sampling technique and a mixed methodology for data collection. Data analysis was done with SPSS software version 17. Majority reported that they had genital itching frequently, for older women, while vaginal discharge and menstrual disorders were reported more for younger women. Almost half of the younger women sought care for their sexual morbidities while only a quarter of the older women sought other care after self-treatment with herbal remedies. The  $\chi^2$  test revealed that some socio-demographic/household characteristics were significantly related to the magnitude of sexual morbidity and treatment seeking behaviours. Women in rural areas have multidimensional, culturally defined, socially constructed, and emotionally experienced sexual morbidities. Financial and educational empowerment of women is recommended to assist in treatment-seeking and sustainability in community health care.

**Keywords:** Sexual health, Sexually Transmitted Infections, Sustainability, Empowerment, Well-being, Poverty, Rural Women, Nigeria.

## **Introduction**

In 1994, the International Conference on Population and Development, held in Cairo, acknowledged that population and poverty are closely linked and that efforts to eradicate poverty could not ignore population issues. It also acknowledged that sexual and reproductive health is essential for individuals' well-being and that universal access to information on reproductive health and services, can positively affect population trends through the voluntary reduction of fertility, by reducing maternal and infant mortality and morbidity, and preventing HIV/AIDS (United Nations Population Fund (UNFPA), 2005).

Poverty in Nigeria according to World Bank (1995) is massive, pervasive and chronic. It is largely a rural phenomenon and severe with 8.4million of the 10 million extremely poor people living in rural areas. Rural women are the hardest hit by poverty and this affects their living conditions, decision-making, nutrition, sexual and reproductive health and right and access to health care. Poverty and disease are tied closely together with each factor aiding each other. Many diseases that primarily affect the poor serve to also deepen poverty and worsen conditions. Poverty significantly reduces people's capabilities making it more difficult to avoid poverty related diseases (Singh and Singh, 2008). In general, poor people become ill more often and have less access to health services than more affluent people (UNFPA, 2002).

Women's sexual health has been recognized as a major cause of morbidity and mortality in Nigeria. It affects their physical, mental, physiological and psychological well-being and these are acknowledged as core aspect of sexuality. As is the case everywhere, female health, ill-health, and mortality in sub-Saharan Africa unfold within, and are shaped by, their socio-cultural, economic, and political contexts. All these affect and are affected by one another, and all have implications for human well-being (Howson, Harrison and Law, 1996).

## **Statement of the Problem**

Sexual health according to WHO (2006a) is "a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled". Sexual health encompasses reproductive health, but goes beyond medical conditions and remains relevant throughout the life-course (Collumbien, *et al*, 2012) while sexual morbidity encompasses all health problems related to sexual

organs and functions. Sexual morbidity includes Sexually Transmitted Infections caused by organisms introduced from outside during sexual contact (WHO, 2005).

Sexually Transmitted Infections (STIs) constitute a significant cause of morbidity and mortality worldwide, particularly in developing countries. However, their importance had not been realized till only recently in the wake of the HIV epidemic (Ministry of Health, Republic of Uganda, 2003).

The impact of the STDs including HIV/AIDS, on female morbidity and mortality is becoming increasingly well-known. Human Immunodeficiency Virus (HIV) infection is considered by many to be the most serious STD because of its multiple debilitating manifestations, its high fatality rate, and the severe stigma and discrimination that surround it in communities around the globe (Howson, Harrison and Law, 1996).

To date, few research studies in Nigeria have examined women's sexual morbidity, health-seeking behaviours and more importantly, few studies focus on rural women considering the sexual health care inequalities, inequities and disparities that exist between urban and rural women. Hence, there is a need for a research on poverty and sexual morbidity among rural women in Nigeria. In view of the foregoing and to achieve the aim of this research, answers are required to the following questions:

1. What is the magnitude of self-reported sexual morbidity among rural women?
2. What is the impact of their self-reported sexual morbidities?
3. What are the cultural definitions of sexual morbidity among rural women?
4. What are the perceived causes of sexual morbidities?
5. What are rural women's treatment-seeking behaviours for self-reported sexual morbidity?

### **Hypotheses**

- i. There is no significant relationship between respondents socio-demographic characteristics and magnitude of their self-reported sexual morbidity.
- ii. There will not be a single best predictor of treatment-seeking behaviour for self reported sexual morbidity among predictor variables such as socio-economic status, education and occupation.

### **Methods**

#### **Research setting**

The study was conducted in 4 villages in Ado-Ekiti Local Government Area in Ekiti State, Southwest, Nigeria. The local government has 61 villages and a population of 308,621 going by the 2006 population census (<http://ekitistate.gov.ng>). A large percentage of the population engages in agriculture.

## **Data Collection**

The villages were selected from those covered by programmes of Sound Health Development Initiative (SHIN), a Non-governmental Organization working for the past 8 years in Ekiti State. Data used in this paper was collected in the course of implementing a USAID funded project entitled “Revolt Against AIDS” (RAA Project, 2011-2012).

The need to conduct this study arose when rural women reported symptoms of sexual morbidity. The survey was conducted in 4 villages randomly selected based on population size, accessibility, presence of different types of SHIN Programmes and familiarity of SHIN staff with the villages. This selection produced Ilokun/Irasa, Elemi, Oke Osun and Igirigiri. Women in the reproductive age group (15 - 49 years) irrespective of their marital status were eligible for inclusion in the study. A convenience sample size of 110 women (which includes 27 women per village in 3 villages and 29 women in the remaining village) were successfully interviewed based on whether a woman reported one or more symptoms of sexual morbidities. This is consistent with the syndromic approach to STD management in most developing countries which was recommended by WHO in the nineties as the cost effective approach to the management of STIs (MOH, 2003). STD syndromes in this context refer to a group of consistent symptoms and/or easily recognizable signs caused by two or more STD agents. The symptoms were defined according to the criteria recommended by Zurayk et al (1993) and a WHO technical group on reproductive morbidities (1989). They included menstrual disorder; 2) Vaginal discharge, 3) lower abdominal pain, 4) urination problem, 5) Genital area boils/ulcers, 6) Genital itching; 7) Sexual intercourse problems, 8) Prolapse, 9) Infertility. A mixed method approach was adopted using a questionnaire to collect the quantitative data and focus group discussions and In-depth Interviews for the qualitative data. During the survey, individuals were identified for follow-up in-depth interviews based on their capacity to describe their experiences of sexual morbidities.

Questionnaires were administered by well-trained SHIN staff while analysis was done using SPSS version 17. Data obtained qualitatively were reported verbatim to corroborate the quantitative data. Informed consent of respondents was sought and they were assured confidentiality and anonymity.

## **Results**

### **Socio-Demographic Characteristics**

Table 1 summarizes details about the socio-demographic characteristics of rural women who participated in the study. Majority of respondents (22.7%) were between the ages of 35-39 years with a mean age of 15.7 years. Also, majority of respondents (62.7%) were

currently married, and 60.9% were in polygamous relationship while the Christian respondents were in the majority (59.1%). Other religious affiliations were Islam 25.5%, traditionalist 10.0%, and others 5.5%. Half of respondents 50.0% were farmers while 19.1%, 17.3%, 13.6% were artisans, traders and self-employed respectively. Those that are literate were 24.5% while majority of respondents 65.5% had a low socio-economic status. Majority of respondents 33.6% were of the predominant Ebira tribe. Respondents that have no assets 80.9% were the most prevalent.

**Table 1: Demographic Profile of respondents (N=110)**

<b>Variable</b>	<b>Category</b>	<b>Frequency</b>	<b>%</b>
<b>Current Age (In years)</b>	15-19	04	3.6
	20-24	11	10.0
	25-29	22	20.0
	30-34	18	16.4
	35-39	25	22.7
	40-44	17	15.5
	45-49	13	11.8
<b>Total</b>		<b>110</b>	<b>100.0</b>
<b>Mean = 15.7 years</b>		<b>Median = 17years</b>	<b>SD <math>\pm</math> = 7.1</b>
<b>Marital status</b>	Single	15	13.6
	Currently married	69	62.7
	Divorced	09	8.2
	Separated	17	15.5
<b>Total</b>		<b>110</b>	<b>100.0</b>
<b>Religious Affiliation</b>	Christianity	65	59.1
	Islam	28	25.5
	Traditional	11	10.0
	Others *	06	5.5
<b>Total</b>		<b>110</b>	<b>100.0</b>
<b>Education</b>	Literate	27	24.5
	Illiterate	83	75.5
<b>Total</b>		<b>110</b>	<b>100.0</b>
<b>Occupation</b>	Farming	55	50.0
	Artisan	21	19.1
	Trading	19	17.3
	Self employed	15	13.6
<b>Total</b>		<b>110</b>	<b>100.0</b>
<b>Socio-Economic status</b>	Low	72	65.5
	Medium	27	24.5
	High	11	10.0
<b>Total</b>		<b>110</b>	<b>100.0</b>
<b>Ethnic group</b>	Yoruba	35	31.8
	Hausa	09	8.2
	Fulani	15	13.6
	Itsekiri	04	3.6
	Edo	10	9.1
	Ebira	37	33.6
<b>Total</b>		<b>110</b>	<b>100.0</b>
<b>Household</b>	Monogamy	43	39.1
	Polygamy	64	60.9
<b>Total</b>		<b>110</b>	<b>100.0</b>
<b>Asset Ownership</b>	Yes	21	19.1
	No	89	80.9
<b>Total</b>		<b>110</b>	<b>100.0</b>

Others \* include Olumba Olumba

**Source: Field Survey, 2012**

**Questions 1:** what is the magnitude of sexual morbidity among the respondents?

In analysing this question, scores of responses that seek to find out the occurrence of symptoms and duration of occurrence of symptoms were used. The findings are shown in Table 2 and 3 respectively.

**i. Occurrence of symptoms**

76.4% and 90% of respondents had experienced vaginal discharge and vaginal itching respectively. Other symptoms experienced by respondents were waist pain 46.4%, burning urination 37.3%, genital area boils/ulcers 29.1%, and lower abdominal pain 24.5%.

**ii. Duration of Occurrence of Symptoms**

More than half of respondents 59.1% have experienced their symptoms for less than a month while 24.5% and 16.4% have experienced their symptoms between 2-3 months and more than 3 months respectively.

**Table 2: Magnitude of Sexual Morbidity among respondents**

Variable	Category	Yes	%	No	%
<b>1. Occurrence of symptoms</b>	Vaginal discharge	84	76.4	26	23.6
	Genital area boils/ulcers	32	29.1	78	70.9
	Vaginal abdominal pain	99	90.0	11	10.0
	Burning urination	27	24.5	83	75.5
	Waist pain	41	37.3	69	62.7
	Sexual intercourse problems	51	46.4	59	53.6

**Source:** Field Survey, 2012

**Table 3: Duration of Occurrence of Symptoms**

Variable	Category	Frequency N =110	%
<b>Duration of Occurrence of Symptoms</b>	Less than 1 month	65	59.1
	Between 2-3 months	27	24.5
	More than 3 months	18	16.4
<b>Total</b>		110	100.0

**Source:** Field Survey, 2012

**Question 2:** what is the impact of self-reported sexual morbidity?

The occurrence of self-reported symptoms and duration of its occurrence has impacted rural women’s sexuality and reproductive capabilities as shown in table 4. Dryness during sexual intercourse was the most impact of self-reported sexual morbidity among respondents were pain during sex 46.4%, bleeding during or after sex 42.7%, bad odour 39.1%, menstrual disorder 37.3%, loss of sexual desire 30.9%, loss of satisfaction and difficulty in conceiving 20.9%.

**Table 4: Impact of Self- reported Sexual Morbidity**

Variable	Category	Yes	%	No	%
Impact of self-reported sexual morbidity	Loss of sexual desire	34	30.9	76	69.1
	Loss of satisfaction	23	20.9	87	79.1
	Dryness during sexual intercourse	65	59.1	45	40.9
	Pain during sex	51	46.4	59	53.6
	Bleeding during or after sex	47	42.7	63	57.3
	Menstrual disorder	41	37.3	69	62.7
	Bad odour	43	39.1	67	60.9
	Difficulty in conceiving	23	20.9	87	79.1

**Source:** Field Survey, 2012

**Question 3:** what are the cultural definitions of sexual morbidity?

Several authors have emphasized the need to consider the cultural beliefs and practices of people when studying and designing measures/programs aimed at improving their health ( Klein man, 1983 as cited in Blum et al, 2004; Singh & Khan, 2006). There are complexities in the social and cultural context of health and diseases in the Yoruba society. The essence of this question is to know whether the respondents could recognize these norms. This is considered necessary since it is assumed that it would affect their perception of sexual morbidity and treatment-seeking behaviours which is pertinent to this study.

All the participants had similar opinions on the cultural definitions of sexual morbidity. In analysing this question, responses from qualitative data in the group discussions and in-depth interviews were reported verbatim. Responses indicated several cultural definitions some of which varied by the symptoms. There are different local terms used to describe sexual morbidities as listed below:

Waist pain – *Jedijedi*

Menstrual disorder – *S’omuroro*

Gonorrhoea – *Atosi*

Bleeding/spotting – *Atosi eleje*

Vaginal discharge – *Eletutu*

Genital boil/ulcer – *Eewo oju ara/eewo n’arun*

Lower abdominal pain – *Ifibe*

A respondent had this to say:

*These are common women diseases that have been from generation to generation. It depends on what you eat, the water and toilet you use and most importantly, your environment..*

Corroborating this, another respondent stated that:

*I just discovered that I was not feeling comfortable on the day*

*the vaginal itching started. I remembered that I used water from the village brook.*

In the word of another respondent:

*This is not abnormal giving the nature of women's reproductive organ. It is opened which makes it susceptible to different diseases. I know that if you use toilet at a time when the weather is very hot You will have vaginal itching and discharge. It is commonly called "Toilet disease".*

From the above, it is clearly evident that there are different cultural definitions given to sexual morbidity in the study location.

**Question 4:** what are the perceived causes of sexual morbidity among rural women?

In-depth Interviews and Focus Group Discussions revealed that the cultural meanings or definitions given to sexual morbidity determine the perceived cause(s). In the word of one of the interviewees who had this to say:

*Atosi eleje (bleeding/spotting) is a disease you contract from urinating on the same spot where a dog urinates.*

Another respondent stated that:

*You have atosi when you are dirty and it is also used as a punishment for an adulterous person.*

**Question 5:** what are rural women's treatment-seeking behaviours for self-reported sexual morbidity?

In analyzing this question, scores of responses that seek to find out the process of treatment-seeking were used. This involves identification of pathways to the formal health care system, often commencing with home care and traditional healers and extending to the formal system, pathways differing according to the presenting condition. This is consistent with studies conducted by MacKain (2003) and Grundy and Annear (2010). The findings are as shown in Table 5.

**Table 5: Rural Women's Treatment Seeking Behaviours**

Variables	Category	Frequency	%
<b>Current treatment sought</b>	Self care <sup>a</sup>	30	27.3
	Traditional birth attendants	11	10.0
	Medicine sellers <sup>b</sup>	48	43.6
	Herbalist/Traditional healers	15	13.6
	Orthodox medicine <sup>c</sup>	06	5.5
<b>Total</b>		<b>110</b>	<b>100.0</b>
<b>First choice of treatment</b>	Self care	71	64.5
	Traditional birth attendants	05	4.5
	Medicine sellers	21	19.1
	Herbalist/Traditional healers	13	11.8
	Orthodox medicine	0	0.0
<b>Total</b>		<b>110</b>	<b>100.0</b>
<b>Reasons for choice of current treatment</b>	Belief in treatment	32	29.1
	Cheaper than others	69	62.7
	Accessible	03	2.7
	Quality of care	06	5.5
<b>Total</b>		<b>110</b>	<b>100.0</b>

**Source: Field Survey, 2012**

**Note:** <sup>a</sup> Self care include traditional and modern home remedies.

<sup>b</sup> Medicine sellers include chemist, drug peddlers.

<sup>c</sup> Orthodox medicine include private and public hospitals.

### **Current Treatment Sought:**

Out of the 110 rural women who experienced one or more symptoms of sexual morbidity, almost half 43.6% currently sought treatment with medicine sellers, 27.3% sought treatment using self care, 13.6% sought treatment with herbalist/traditional healers, 10.0% sought treatment with traditional birth attendants and 5.5% sought treatment using orthodox medicine which is the least.

### **First Choice of Treatment**

The responses of the rural women on their first choice of treatment shows that 64.5% first chose self-care while 19.1%, 11.8%, 4.5% first chose medicine sellers, herbalist/traditional healers, traditional birth attendants respectively. Orthodox medicine was not first choice.

### **Reasons for Choice of Current Treatment**

It is worthwhile to note that more than half of the respondents (62.7%) in the last panel of Table 4 reported that they chose their current treatment because it is cheaper than

others, 29.1% reported that they believed in the treatment, 5.5% reported that they chose their current treatment because of the quality of care while the remaining 2.7% reported that the reason for the choice of current treatment was due to accessibility.

### **Test of Hypotheses**

Data generated were processed using SPSS to calculate the chi-square value in order to test the significance of the independence of two variables in hypothesis one and Pearson Product-Moment Correlation to determine the relationship between treatment-seeking behaviour and its best predictor in hypothesis two.

### **Hypothesis One**

H<sub>0</sub>: There is no significant relationship between selected respondents socio-demographic characteristics and magnitude of their self-reported sexual morbidity.

H<sub>1</sub>: There is a significant relationship between respondents' socio-demographic characteristics and magnitude of their self-reported sexual morbidity.

**Table 6: Cross tabulation of Socio-demographic characteristics and magnitude of respondents self reported sexual morbidity**

<b>Selected Socio-demographic Variable</b>	<b><math>\chi^2</math> Value</b>	<b>Df</b>	<b>P-value</b>
<b>Age</b>	20.966	12	0.003
<b>Marital Status</b>	6.349	6	0.385
<b>Economic Status</b>	14.792	4	0.005

**Source:** Field Survey, 2012

*Significance at 0.05*

*Decision rule –  $\chi^2_c > \chi^2_t = \text{significant}$*

According to Table 6 above, the null hypothesis is accepted at 0.05 level of significance that there is no significant relationship between selected respondents socio-demographic characteristics and magnitude of their self-reported morbidity.

### **Hypothesis Two**

H<sub>0</sub>: There will not be a single best predictor of treatment-seeking behaviour for self-reported

sexual morbidity among predictor variables such as socio-economic status, education and occupation.

H<sub>1</sub>: There will be a single best predictor of treatment-seeking behaviour for self-reported sexual morbidity among predictor variables such as socio-economic status, education and occupation.

**Table 7: Multiple Regression Analysis showing the best predictor of treatment-seeking behaviour among variables like occupation, education and socio-economic status**

<b>Socio-demographic Variable</b>	<b><i>B</i></b>	<b><i>Beta</i></b>	<b><i>Significant</i></b>	<b><i>Significant</i></b>
<b>Occupation</b>	0.883	0.003	2.040	0.001
<b>Education</b>	1.243	0.077	1.077	0.234
<b>Socio-economic Status</b>	1.501	0.148	31.204	0.000
<b>Constant</b>	27.712		11.172	0.000

Note  $p < 0.05$

In testing this hypothesis, Multiple Regression Analysis was used. Treatment –seeking behaviour is considered as the dependent variable. Table 6 above shows a comparative analysis of the contribution of the independent variables or predictors of treatment-seeking behaviour. Here, it was revealed that socio-economic status is the best predictor of treatment-seeking behaviour, with beta weight of 0.148 (14.8%). The second best predictor was education with a beta weight of 0.077 (7.7%) while the least predictor was occupation with a beta weight of 0.003 (0.3%).

Rural women’s socio-economic status is therefore the single best predictor of their treatment-seeking behaviour for self-reported sexual morbidity. This implies that socio-economic status is the most significant influence which could determine the treatment-seeking behaviours of rural women with sexual morbidities. The result for hypothesis 2 corroborate findings of Tipping and Segall (1995) which demonstrated that the decision to engage with a particular treatment channel is influenced by a variety of socio-economic variables, including sex, age, the social status of women, the type of illness, access to services and perceived quality of the service.

## **Conclusion**

The study investigated poverty and sexual morbidity among rural women in an era of HIV/AIDS in Nigeria. Evidence from the study has led the researchers to conclude that

sexual morbidity and treatment-seeking among rural women is closely linked to poverty which needs and require a lot of attention in order to achieve the MDGs.

### **Recommendations**

Financial and educational empowerment of women is recommended to assist in treatment-seeking and sustainability in community health care.

## References

- UNFPA, (2005): Reducing Poverty and Achieving the Millennium Development Goals: Arguments for Investing in Reproductive Health and Rights, New York.
- World Bank (1995): "Nigeria: Poverty Assessment" July 1995.
- Singh, A.R. & Singh, S.A. (2008): Diseases of Poverty and Lifestyles, Well-Being and Human Development *Sana Monographs*, 6(1), 187-225.
- UNFPA (2002): State of the World Population: Population, Poverty and Opportunities, New York.
- Howson, C.P., Horrison, P.F. and Maureen Law (1996): In Her Lifetime: Female Morbidity and Mortality in Sub-Saharan Africa: Committee to Study Female Morbidity and Mortality in Sub-Saharan Africa, Institute of Medicine, National Academy Press, Washington, D.C.
- World Health Organization (2005): Sexually Transmitted Infections and other Reproductive Tract Infections a Guide to Essential Practice. Geneva: Department of Health and Research, World Health Organization.
- Ministry of Health (2003): Sexually Transmitted Infections Treatment Guidelines for use by Operational Level Health Workers in Uganda, STD/AIDS Control Programme, Republic of Uganda.
- World Health Organization (WHO) (1989): Measuring Reproductive Morbidity. Geneva, Switzerland, World Health Organization (WHO).
- Zurayk, H. KhaHab; Younis, N., El-Mouelhy M.N Amin, M.F., Farag, A.M. (1993): Concepts and Measures of Reproductive Morbidity Health Transition Review. 3:17-40.
- Collumbien, M. Busza, Cleland, J., Campbell, O. (2012): Social Science Methods for Research on Sexual and Reproductive Health WHO Press, World Health Organization, Geneva.
- World Health Organization (2006a): Defining Sexual Health: *Report of a Technical Consultation on Sexual Health, 28-31 January 2002*, Geneva.
- Grundy, J. & Annear, P. (2010): Health-Seeking Behaviour Studies: A Literature Review of Study Design and Methods with a Focus of Cambodia. *Health Policy and Health Finance Knowledge Hub, Working Paper Series, Volume 7*, The Australian Agency for International Development (Aus AID), Australia.
- Tipping, G. and Segall, M. (1995): Health Care Seeking Behaviour in Developing Countries: An Annotated Bibliography and Literature Review. Brighton (UK): Sussex University Institute of Development Studies.
- Mackiain, S. (2003): A Review of Health Seeking Behaviour: Problems and Prospects. HSD/WP/05/03. Manchester: University of Manchester Health Systems Development Programme.

Singh, M. and Khan, R.J. (2006): A Cultural Explanatory Model for White Discharge amongst Women in Kakboo Village, Bangladesh. *Brac University Journal*, Vol. III, No. 1, pp.17 -26.

Blum et al, (2004). Coping with Nutritional deficiency: cultural models of Vitamin A Deficiency in Northern Niger, *Medical anthropology*, 2004 Jul-Sep;23(3): pp.195-227.