International Journal of Maritime and Interdisciplinary Research
©2025 IJMIR/Volume 7(3) SE (1) | ISSN: 2734-3286.

Journal homepage: www.ijmir.edu.ng

FACTORS MILITATING AGAINST THE ROLE OF NHIS IN THE PREVENTION AND MANAGEMENT OF HIV AMONG WOMEN OF CHILDBEARING AGE IN IMO STATE

Njoku, O.J.; Obasi, K.O.; Ozims, J.S.; Anyanwu, A.A.; and Osuji, L.A.

[1,2,3] Department of Public Health, Faculty of Health, Imo State University, Owerri.

Corresponding Author: janeonyi2000@gmail.com
Phone: 09030601326

ABSTRACT

The study assessed the factors militating against the role of NHIS in the prevention and management of HIV among women of childbearing age in Imo State. The study was a cross-sectional study. A pre-tested interviewer-administered questionnaire was used to collect information from three hundred and twenty-seven (327) staff of three health institutions and five hundred and twenty-two (522) HIV women of childbearing age attending the clinic. Chi-square statistic, Principal Component Analysis and Factor Analysis were adopted for statistical analysis, and analytical decisions were considered significant at a p-value less than 0.05. The results show that there are significant factors that militate against NHIS in the prevention and management of HIV among women of childbearing age in Imo State. Increasing the number of dependents that can be enrolled so that larger families can be motivated to enroll in health insurance as well as government effective policy for NHIS were recommended.

Keywords: Factors, NHIS, Prevention, Management, HIV, Women, Child Bearing

INTRODUCTION

Healthy population and indeed the workforce are indispensable tools for rapid socioeconomic and sustainable development the world over. Despite this indisputable fact, in Nigeria, like most

African countries, the provision of quality, accessible and affordable healthcare remains a serious problem (WHO, 2018; Oba, 2008; Omoruan, Bamidele & Philips, 2009).

HIV infection is a pandemic affecting the world, but sub-Saharan Africa has a higher burden. At the end of 2018, 37.9 million people were living with HIV globally, while 770,000 people died from HIV-related illnesses within the same period (United Nations Programme on HIV/AIDS [UNAIDS], 2019). HIV infection is a significant public health problem in Nigeria. The prevalence of HIV is higher in young women compared to their male counterparts. The 2018 Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS) report revealed that the prevalence rate of HIV in women aged 15–49 years is 1.9%. This is higher than that of their male counterparts, which is 0.9% (National Agency for the Control of AIDS [NACA], 2019). Those in the range 15–49 years are women of reproductive age. Therefore, preventing HIV in this age group is pertinent to the control of HIV infection. The NAIIS report also revealed that only 45.3% of women aged 15–49 years living with HIV had viral suppression, implying a continued chance of transmitting HIV to their children (NACA, 2019). The most prevalent route of HIV infection in Nigeria is heterosexual transmission (Awofala & Ogundele, 2018).

National Health Insurance Scheme (NHIS)

Health insurance involves the application of insurance principles to cover cost of defined medical benefit packages. It involves risk sharing between those who will need the benefits and those who will not. It also involves spreading the burden of cost of healthcare services to the insured over time so that the insured can access services anytime without paying. There is dearth of literature on the effect of various health financing options for low- and middle-income countries (Ogu, 2023; Mills, Rasheed, Tollman, 2006). More so, enrolment in insurance has been found to result in altered behavior, such as utilizing unnecessary medical care, a concept known as ‘moral hazard’ (Adebayo et al., 2015).

Some studies have shown a low testing rate of 36.5% in sub-Saharan Africa, including Nigeria (Mahy M., Brown T., Stover J., Walker N., Stanecki K., Kirungi W., et al., 2017). It was estimated that 50% of HIV-positive people are not aware of their status in Nigeria (Oleribe et al., 2018). Abiodun et al. (2014) found an HIV testing rate of 30.4% among youths in a university. An HIV testing rate of less than 15% amongst adolescents in secondary school was observed by Alabi et al. (2018) in Nigeria. Studies conducted among pregnant women in Nigeria also showed low HIV testing rates of 36.3% in western Nigeria and 20.7% in northern Nigeria (Olowokere et al., 2018;

Oyefabi et al., 2018). The 2018 NAIIS survey revealed that out of the 1.9 million people living with HIV in Nigeria, only 67% were aware of their HIV status. About half of them (52%) were on antiretroviral therapy, and only 42% had viral suppression (NACA, 2019). HIV testing rate is low both in pregnant women and the general population in Nigeria.

Some authors, such as Akinwande et al. (2012), Namara-Lugolobi et al. (2017), and Strauss et al. (2002), investigated the predictors of HIV testing at the hospital level. While Strauss et al. (2002) studied the predictors in drug users, Brown et al. (2018) studied age and ethnicity as predictors of HIV testing in the United States. Holtzman et al. (2016) examined predictors of HIV in men having sex with men in Canada. Bibiana et al. (2018) investigated factors affecting HIV testing in women of reproductive age in a community in Nigeria. Ehiri et al. (2016) studied how cultural and religious factors affected HIV in pregnant women and their partners.

To eliminate HIV as a public health problem, there is a need to strengthen HIV testing in women of childbearing age. Little literature exists about the factors that affect HIV testing in women of childbearing age at a national level in Nigeria. I intend to fill this gap by studying predictors of HIV testing among women aged 15–49 years on a national level in Nigeria. While Lepine et al. (2015) studied factors that affected HIV testing among couples using the 2008 National Demographic and Health Survey (NDHS) data, I used the 2013 NDHS data focused on women of reproductive age group.

In addition, most studies tend to focus on healthcare outcomes (e.g., healthcare service utilisation) and use quantitative econometric approaches. However, such approaches are not particularly effective at unearthing the actual factors that shape inequities in healthcare access, including individual and structural factors that constrain individuals' healthcare-seeking behavior. Other studies tend to look at the role of NHIS in promotion of health status of Nigerians while few studies have also looked at NHIS and management of HIV patients.

Against the backdrop of gaps, this present study focused on factors that militate against the role of NHIS in the prevention and management of HIV among women of childbearing age in Imo State.

MATERIALS AND METHODS

The study design adopted for this research work is the descriptive survey method. The population of this study consists of all the Health Information Officers in Federal Medical Teaching Hospital Complex, Owerri, Imo State; Specialist Hospital Umugwuma, Owerri; and Orlu Teaching

Hospital. A total population of 2,350 staff and a sample of three hundred and forty-two (342) was used in the study using Taro Yamane formula for sample selection. The participants for the study were 342 (three hundred and forty-two) Health Information Officers from Federal Medical Teaching Hospital Complex, Owerri, Imo State; Specialist Hospital Umugwuma, Owerri; and Orlu Teaching Hospital. Thus, the total enumeration sampling technique was used for the study.

Also, a study population for the women used in the study consisted of all women aged 18–60 years in Imo State. The focus on this segment of the population was justified with the fact that women of childbearing age have higher rates of healthcare utilization due to their higher rates of hospitalization and outpatient visits. The target population for women was estimated at 1,774,743 in the 27 LGAs (NPC, 2020).

A multi-stage cluster sampling procedure, which entails successive selection of local government areas, community clusters, and respondents, was employed. At first, four Local Government Areas were picked using simple random sampling by balloting. They include: Owerri West, Owerri Municipal, Orlu, and Owerri North Local Government Areas. Secondly, from each of the LGAs, three communities were purposively selected, also through simple random sampling by balloting. Thirdly, women aged 18–60 years were purposively selected for the study.

The towns were grouped into two clusters based on their proximity to the capital of the state. Cluster A (Owerri Municipal and Owerri North) are largely urban, while Cluster B (Orlu and Owerri West) are largely rural. The essence of this clustering is to ensure that women from both urban and rural areas were adequately captured in the study. In each selected twelve communities, 44 female respondents were administered questionnaires, giving a total of 528 respondents. Data was collected through both other-administered and self-administered methods.

Imo State was chosen for this study because, according to the 2018 National Demographic Survey in Nigeria, only 3.2% of women were indicated to have any type of health insurance, while 96.8% have no health insurance coverage in the South-East region, which encompasses five states including Enugu, Abia, Anambra, Ebonyi, and Imo States (NPC & ICF, 2019).

Data generated will be analyzed by using descriptive statistics such as frequency tables and percentages. Descriptive statistics entail describing the main features of a collection of information quantitatively. It aims at summarizing a sample, rather than use the data to learn about the population that the sample of data is thought to represent.

Principal Components Analysis and Factor Analysis are related techniques that can be used to replace one group of variables with another. One reason a researcher may want to do this is to reduce the number of variables being studied. The main purpose of a Principal Components Analysis is to reorganize a dataset so as to produce orthogonal variables. The mean variables will each contain both common variance and unique variance. Common variance is that part of variables' pattern which is related to the other variables in the system. Its unique variance is the residual from the multiple relationships.

The confusion that can be caused by the mixture of common and unique variances in a principal component is excluded by using Factor Analysis. Factor Analysis focuses only on the common variance and weights variables according to their interrelationship with the others. Identification of uncorrelated factors is made possible usually by axial rotation of the vectors making up the dataset. Rotation may be done using any one of a number of methods, but commonly by orthogonal rotation.

Exploratory Factor Analysis (EFA) was used to explain the pattern of relationships within the dataset and to compare them against the hypothesized RNHISM-HIV dimensions. EFA has three basic decision points:

1. Decide the number of factors,
2. Choose an extraction method, and
3. Choose a rotation method.

The most common approach to deciding the number of factors is to generate a scree plot. The scree plot is a two-dimensional graph with factors on the x-axis and eigenvalues on the y-axis. The eigenvalues are produced by the process of PCA and represent the variance accounted for by each underlying factor.

Given the expectation that the RNHISM-HIV dimensions might be correlated, an iterated EFA was performed on all the datasets using PCA rotated by orthogonal Promax algorithm (assumes that the factors are correlated). The eigenvalues greater than one and above are selected as a principal component to be analysed, with the highest eigenvalue explaining the percentage of variance in the data analysed. The factor loading greater than 0.4 in absolute value was suppressed to sharpen the clarity of the relationships.

RESULTS AND DISCUSSION

Table 2: Factors that militate against NHIS in the prevention and management of HIV among women of childbearing age in Imo State

S/N	Factors	SA	A	U	D	SD
1	Lack of healthcare provision in the rural areas	300	27	0	0	0
2	Unavailability of anti-retroviral drugs in rural areas	327	0	0	0	0
3	Inadequate Healthcare personnel in the rural areas	270	57	0	0	0
4	Poor funding of the scheme	327	0	0	0	0
5	Low incentives of NHIS personnel	327	0	0	0	0
6	Inadequate working facilities	320	2	0	0	0
7	Poor power issues	247	70	0	0	0
8	Lack of voluntary counseling services	200	101	20	6	0
9	Absence of ICT facilities in the rural areas	297	20	10	0	0
10	Ineffective government policy	200	107	20	0	0

Source: Survey, 2024

Table 2 above shows that all the respondents, representing 100% of the workers of the three health institutions under study, agreed that the following: lack of healthcare provision in the rural areas, inadequate healthcare personnel in the rural areas, unavailability of anti-retroviral drugs in rural areas, poor funding of NHIS, low incentives of NHIS personnel, poor power issues, and inadequate working facilities are the factors that militate against NHIS in the prevention and management of HIV among women of childbearing age in Imo State, as well as absence of ICT facilities in the rural areas.

However, 301 respondents said that lack of voluntary counseling services is a factor that militates against NHIS in the prevention and management of HIV among women of childbearing age in Imo State, while 20 respondents were undecided and 6 out of the 327 respondents disagreed with the statement. Similarly, 307 respondents agreed that ineffective government policy is a factor that militates against NHIS, while 20 were undecided.

Table 3: Mean and Standard Deviation of Variables on Factors that Facilitate the Role of NHIS

Variable	Mean	Std. Deviation	N
Lack of healthcare provision in the rural areas	3.48	1.409	327
Unavailability of anti-retroviral drugs in rural areas	2.91	1.356	327
Inadequate healthcare personnel in the rural areas	2.99	1.284	327
Poor funding of the scheme	3.58	1.466	327
Low incentives of NHIS personnel	3.34	1.351	327
Inadequate working facilities	3.55	1.353	327
Poor power issues	3.24	1.246	327
Lack of voluntary counseling services	3.49	1.347	327
Absence of ICT facilities in the rural areas	3.47	1.361	327
Ineffective government policy	3.65	1.338	327

Source: SPSS Iterations

The summary of the descriptive statistics of the entire variables posed in the study is presented in Table 3, with the mean and standard deviations resulting from the survey. About 8 of the variables recorded mean values greater than 3.0, corresponding approximately to the 8 variables with highest scores in the factor analysis, along with associated factors which scored in excess of 0.500.

Table 4: Component Matrix[a]

	Component			
	1	2	3	4
V1	.460	.381	-.307	.016
V2	.122	.667	.014	-.551
V3	.559	-.225	.042	.464
V4	.675	-.086	-.068	-.059
V5	.390	-.184	-.635	.101
V6	.546	.085	.578	.028
V7	-.012	.478	.313	.598
V8	.597	-.142	.475	-.262
V9	.347	.642	-.271	.173
V10	.684	-.263	-.136	-.162

Extraction Method: Principal Component Analysis.
a. 4 components extracted.

Bartlett's Tests of Sphericity

Bartlett's test is sensitive to departures from normality. That is, if the samples come from non-normal distributions, then Bartlett's test may simply be testing for non-normality.

Table 5: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.625
Bartlett'sTest of Sphericity	Approx.Chi-Square	128.474
	Df	45
	Sig.	.000

Source: *SPSS Iterations*

The Bartlett's test conducted proved to be statistically significant (Sig-value = 0.000 < 0.001). The Kaiser-Meyer-Olkin (KMO) measure was approximately 0.625, indicating the data were sufficient for Principal Component Analysis (PCA). The Bartlett's test of sphericity $X^2 = 128.5$ (Chi-square), $p < 0.001$ showed that there were patterned relationships between the variables. Because the Chi-square of 128.5 for institutions studied with 45 degrees of freedom is unlikely to have arisen by chance, the 327 staff of the institutions interviewed do not have equal opinion on the factors.

Exploratory Factor Analysis

The factors which describe the critical variables that impinge on the factors that facilitate the role of NHIS in the prevention and management of HIV among women of childbearing age in Imo State were explored. To achieve some reduction in the categorical data points to deal with, while also investigating the structure of the data, we carried out an exploratory factor analysis. It was hoped that the analysis would also serve the purpose of streamlining the study by removing highly correlated variables from the dataset.

The Principal Component Analysis (PCA) was the extraction method used under the IBM SPSS 20.0 system. As it turned out, the result of the PCA seemed somewhat reasonable in the absence of a clear idea of the nature of the distribution of institutions' personnel interviewed in the study. The number of components retained following the analysis were four.

The data structure suggests that there are ten principal components of the factors in the analysis. These factors were retained for rotation following the Varimax (orthogonal) rotation function of

the PCA which selects for all factors with eigenvalues greater than 1.0. Although this may not be the most accurate method for selecting the number of factors to retain, a careful inspection of the scree plot (see Figure 4.0) shows that some confidence can be placed on the number of factors selected and that there is probably no over-extraction or under-extraction of factors retained.

It seems clear then that the four components represent the underlying structure of the factors used in the study with 60.8% of the total variance in the original variables, with only 39.2% loss of information.

Table6: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	%ofVariance	Cumulative%	Total	%ofVariance	Cumulative%
1	2.391	23.910	23.910	2.391	23.910	23.910
2	1.419	14.193	38.103	1.419	14.193	38.103
3	1.253	12.531	50.634	1.253	12.531	50.634
4	1.018	10.175	60.810	1.018	10.175	60.810
5	.844	8.442	69.251			
6	.789	7.889	77.140			
7	.760	7.596	84.736			
8	.608	6.077	90.813			
9	.486	4.865	95.678			
10	.432	4.322	100.000			

Extraction Method: Principal Component Analysis.

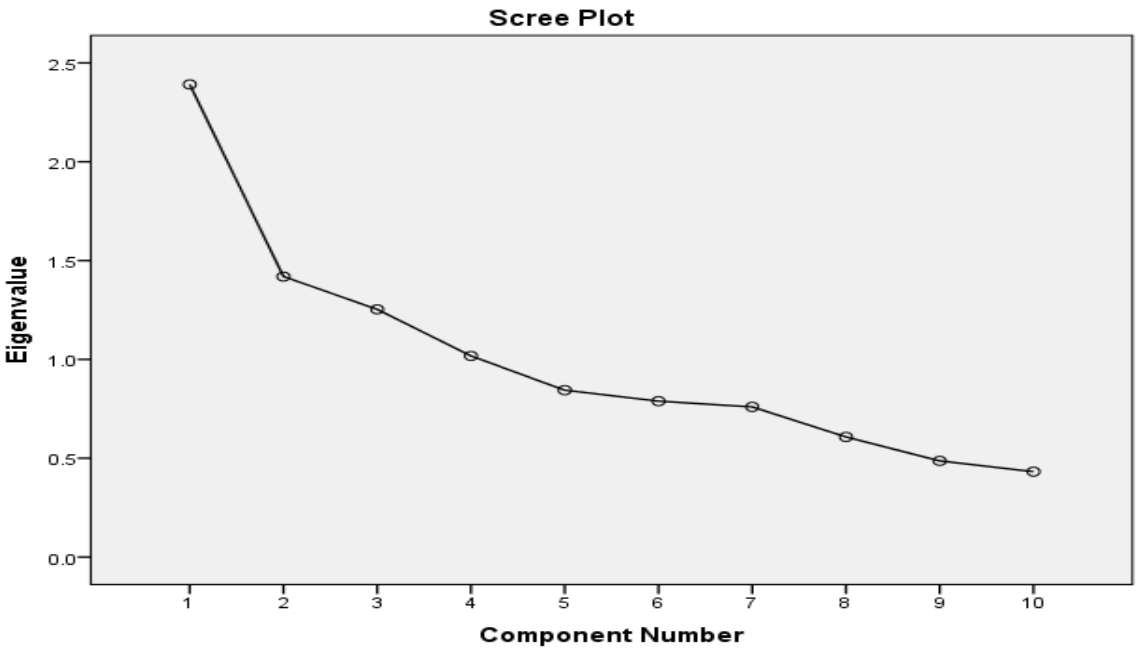


Fig1: A Scree Plot of Total Variance
Source: SPSS Iterations

Hypothesis Testing and Summary of Findings

From the 10-item variables optimally weighted and summed based on the Kaiser criterion of Eigenvalue cut-off of 1.0, there were four components that explained a cumulative variance of 60.8%. The Scree plot confirmed the findings of retaining four components. The scree plot is a visual representation of how much the Eigenvalue explains the components identified. The last point of inflexion at component 5 signifies that only four components should be retained.

Hypothesis:

There are no significant factors that militate against NHIS in the prevention and management of HIV among women of childbearing age in Imo State.

From the Component Matrix Table, Component 1 explained 23.9% of the total variance and has an Eigenvalue of 2.49. This is the major component that facilitates the role of NHIS in the prevention and management of HIV among women of childbearing age in Imo State.

The variables that correlated positively with Component 1 and had factor loadings greater than 0.50 include:

- Inadequate Healthcare personnel in the rural areas – 0.559

- Poor funding of the scheme – 0.675
- Inadequate working facilities – 0.546
- Lack of voluntary counseling services – 0.597
- Ineffective government policy – 0.684

Among these, Variable 10: Ineffective government policy had the highest factor loading and can therefore be referred to as the major factor affecting Component 1.

Based on these results, the researchers reject the null hypothesis and conclude that there are significant factors that militate against the role of NHIS in the prevention and management of HIV among women of childbearing age in Imo State.

Conclusion and Recommendation

From the results of the analysis, it is evident that the most critical factors militating against the role of NHIS in the prevention and management of HIV among women of childbearing age in Imo State include:

- Ineffective government policy
- Poor funding of the scheme
- Lack of voluntary counseling services
- Inadequate healthcare personnel in rural areas
- Inadequate working facilities

Recommendation

The study recommends that the government should increase funding for the NHIS scheme and implement effective policy reforms. This would ensure improved access to NHIS coverage for women of childbearing age in Imo State. Such reforms will empower NHIS personnel and strengthen their role in the prevention and management of HIV among this vulnerable population group.

References

Adebayo, E. F., Uthman, O. A., Wiysonge, C. S., Stern, E. A., Lamont, K. T., & Ataguba, J. E. (2015). A systematic review of factors that affect uptake of community-based health insurance in low-income and middle-income countries. *BMC Health Services Research, 15*, 543. https://doi.org/10.1186/s12913-015-1179-3

Mahy, M., Brown, T., Stover, J., Walker, N., Stanecki, K., Kirungi, W., et al. (2017). Producing HIV estimates: From global advocacy to country planning and impact measurement. *Global Health Action, 10*(sup1), 1291169. https://doi.org/10.1080/16549716.2017.1291169

UNAIDS. (2019). *Fact sheet 2015: Global statistics*. Geneva: UNAIDS. Retrieved from https://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_en.pdf

World Health Organization (WHO), UNAIDS, & UNICEF. (2018). *Towards universal access: Scaling up priority HIV/AIDS interventions in the health sector – Progress report*.

Ogu, I. J. (2023). Knowledge and enrolment predictors of women in National Health Insurance Scheme. *Journal of Research in Humanities and Social Science, 11*(4), 192–198. Retrieved from http://www.questjournals.org