

Predictors of adolescents' use of sexual and reproductive health services in Nigeria: a mixed-method approach

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Abstract

Sexual and Reproductive health Services (SRHS) are essential for prevention and control of SRH problems among adolescents and the achievement of sustainable development goal 3. These services may be available but certain factors interfere with their access and utilization by the adolescents. This study sought to determine factors that predict adolescents' utilization of SRHS in Enugu State, Nigeria.

Methods

The study adopted mixed method research employing cross-sectional research design. The population of the study comprised adolescents (12-22 years). Multi-stage sampling procedure was used to select 1,447 adolescents used for the study. Questionnaire, in-depth interview and focus group discussion were used for data collection. Percentages, Chi-square, and logistic regression were used to analyse quantitative data, while qualitative data were thematically analysed using NVivo software.

Results

Socio-demographic factors of gender, age, education, location and living status ($p < .05$) were significant predictors of utilization of SRHS. Psycho-cultural and health system factors ($p < .05$) were also significant predictors of utilization of SRHS.

Conclusion

The study concluded that some socio-demographic, psycho-cultural and health system factors are predictors of adolescents' access to and utilization of SRHS. These predictors could be addressed through home sex education, regular training of health care providers on youth-friendly services delivery and policy reforms

Background

The world population is made up of slightly one quarter of young people (10-24 years) [1]. In developing countries, this group constitutes 32 per cent of the population [1] and are faced with several neglected health problems including sexual and reproductive health problems. In Nigeria, about 26.1% of the population are within 12-24years [2]. Nineteen per cent of the adolescents (15-19) had begun childbearing [3] and are more likely to experience adverse pregnancy outcome than those who delayed childbearing. Moreover, the incidence and prevalence of sexually transmitted infections are high among young people aged 15-24 years [4,5]. In 2018, 510,000 young people between the ages of 10 and 24 were newly infected with HIV, of whom 190,000 were adolescents between the ages of 10 and 24 years [6]. Adolescents are also at risk of other SRH problems such as unsafe abortion, early marriage, and sexual violence. Adolescents are exposed to these problems mainly due to their unhealthy sexual behaviours such as early sexual debut, multiple sexual partners and unsafe sex [7]. Access to and utilization of Sexual and

Reproductive Health Services (SRHS) are essential for the prevention of sexual and reproductive health (SRH) problems and diseases.

Though, availability and accessibility of SRHS are still poor in developing countries [8, 9] including Nigeria, the available and accessible ones are underutilized by adolescents [10, 11]. Yet, there are increase in the incidence and prevalence of SRH problems and diseases among adolescents such as teenage pregnancy, unsafe abortion, sexually transmitted infections (STI), HIV and AIDS in sub-Saharan Africa [12]. Adolescents are supposed to make effective use of these services because these services are meant to promote the sexual and reproductive health of every individual. Utilization of health services is measured based on health outcomes and percentage of persons that use the services [13]. The significant impact of SRHS' utilization can be observed in reproductive health outcomes such as pregnancy and birth, prenatal and neonatal mortality, maternal mortality, Sexually Transmitted Infections (STIs) and HIV and AIDS, and complications of abortion [14]. The World Health Organization stated that nearly 20 per cent of all global maternal deaths happen in Nigeria [15] with the risk higher among adolescent girls [16], suggesting that adolescents' utilization of sexual and reproductive health services is low.

Many factors could determine adolescents' utilization of SRHS in Nigeria, despite efforts to make SRHS available at the primary healthcare facilities. These factors which are referred to as predictors in this study range from social, personal, psychological and health system factors. The level of secrecy accorded to sexuality in Nigeria with its direct and indirect implications, makes it difficult for sexually active adolescents to freely access and use SRHS, exposing a high percent of them to STIs [17]. For the purpose of this study, predictors were studied under the following subcategories: socio-demographic, psycho-cultural, and health system factors, to find out if they predicted adolescents' utilization of SRHS. Socio-demographic factors include age, gender, level of education, religious affiliation, location, living status, marital status, economic status. Research has linked sociodemographic factors and adolescents' utilization of health services [18, 19].

Moreover, ones cultural and personal belief may influence the individual's perception of accessing and using health services. Psycho-cultural refers to the interaction of psychological and cultural factors in the individual's personality or in the characteristics of a group [20]. Psycho-cultural factors in this study refers to those cultural beliefs or values that affect the psychology of the youth in seeking for or using SRHS in Enugu State. Psycho-cultural factors included: belief that discussing sexual issues is a taboo, fear of stigmatization or embarrassment based on cultural beliefs, fear of meeting their parents or people they know in the clinics, fear of being labeled a prostitute by community members, fear of not getting married later in life, fear of being barren, and other cultural beliefs regarding the use of SRHS by youths. For example, in some societies, most people assume that providing SRHS for the youth, like provision of sexuality education and contraceptives, promote promiscuity. These fears and burdens are capable of limiting adolescent's use of SRHS and could result in stigmatizing youths that are bold enough to access and use available SRHS [21].

Furthermore, health system factors such as availability of quality reliable services, proximity of the facility to users, cost of services, lack of privacy and confidentiality, long waiting time, using services with adults, and the attitude of service providers were assessed as predictors of adolescents' utilization of SRHS. The nearer the facility to the users, the higher their level of access and utilization. Geographical access, therefore, influences service utilization [22, 9]

In this study, we considered the following health system factors: proximity of facilities to users, cost of services, lack of privacy, long waiting time, using services with adults, and the attitude of service providers. The present study determined if these factors predicted the youth's utilization of SRHS in Enugu State. This was because such prediction studies were lacking in the State, while there are observed low access and utilization of health services among adolescents in Nigeria.

Methods

Study area and period

This study was conducted in Enugu State, Southeast Nigeria between January 2015 and July 2016. The first phase of this study which is focused on availability and accessibility of SRHS had been published [9]. Details of the study area, design and sampling techniques is in [9].

Data collection procedure

Questionnaire, in-depth interview guide and focus group discussion guide were used to collect data from the respondents on both personal and group contacts. Structured questionnaire was prepared through review of related literature. The questionnaire which contained two parts was used to measure utilization of SRHS. First part contained the socio-demographic characteristics of the respondents while the second part contained utilization of sexual and reproductive health services (sexuality education, family planning services, safe motherhood services, post abortion care and prevention and treatment of STIs and HIV and AIDS). Details of the data collection procedure is described elsewhere (9)

Data processing and analysis

Data collected were cross-checked for completeness. Logical techniques were employed to identify errors during data cleaning. Out of 1620 copies of questionnaire only 1447 copies of questionnaire did not have errors and were used for data analysis. The Statistical Package for the Social Sciences (SPSS) version 20.0 was employed for statistical analysis of quantitative data. Percentages were used to assess the utilization of SRHS to adolescents, while Chi-square statistic and logistic regression were used to test association between the variables at .05 level of significance. Data from the questionnaire are presented in Tables 2 and 3. The responses from focus group discussion and IDI were transcribed in English language while maintaining the contexts of the responses. The NVivo 11 Pro software was used to code and analyze the data thematically. The data are presented alongside the quantitative findings.

Results

Table 1 shows the socio-demographic characteristics of the respondents. One thousand, four hundred and forty-seven (1,447) adolescents within the ages of 12 and 22 years, with a mean age of 16.9 years responded to the questionnaire. More than half (57.1%) of the respondents were females while 42.9% were males. Majority (96.3%) of the respondents were Christians and slightly more than half (54.0%) had secondary education. Majority (86.8%) of the respondents were single and were living with their parents (62.3%). Majority had a monthly income less than ₦5000.00 (1 USD = 199.3 NGN) [9].

Table 2 shows that overall percentage total of 38.2 utilized SRHS. The table shows that more than half (56.6%) of the respondents reported using sexuality education services, 30.9% use family planning information and services, 36.5% use safe motherhood services, 23.6% use post-abortion care services and 40.3% use services for the prevention and treatment of STIs and HIV and AIDS.

Table 3 shows that there is significant association between utilization of sexuality education, safe motherhood and post-abortion care, and age ($p \leq .05$) and level of education ($p \leq .05$). Younger adolescents (12-16 years) used sexuality education more than the older adolescents. The table shows significant association between sexuality education, post-abortion care services and services for the prevention and management of STIs, HIV and AIDS, and income ($p \leq .05$). There is also significant difference between family planning services and level of education ($p \leq .05$), location ($p \leq .05$) and living status ($p \leq .05$). Adolescents that were living alone utilized family planning services more than adolescents that were living with their parents.

Table 4 shows that there is significant association between sexuality education, family planning, safe motherhood, post-abortion care and services for prevention and management of STI, HIV and AIDS and psycho-cultural factors ($p \leq .05$) and health system factors ($p \leq .05$).

Table 5 shows the multi-variate analysis of socio-demographic factors and utilization of SRHS among youth. The table reveals that gender ($p = .000$; OR = 4.532; CI = 2.454-8.370), age ($p = .008$; OR = 1.382; CI = 1.090-1.752), education ($p = .000$; OR = .332; CI = .118-.587), location ($p = .001$; OR = 14.921; CI = 5.286-42.114), and living status ($p = .003$; OR = .574; CI = .400-.823), are significant predictors of utilization of SRHS, since the p-values are less than .05 level of significance at one degree of freedom. The null hypothesis that socio-demographic factors are not significant predictors of utilization of SRHS is therefore, not accepted for gender, age, education, location, and living status. The table further shows that income ($p = .508$; OR = 1.077; CI = .865-1.341), is not a significant predictor of utilization of SRHS, since the p-value is greater than .05 level of significance at one degree of freedom. These imply that gender, age, education, location, and living status are socio-demographic factors that can be used to predict utilization of SRHS among adolescents.

Table 6 shows the multi-variate analysis for psycho-cultural and health system factors and utilization of SRHS among youth. The table shows that psycho-cultural ($p = .000$; OR = 2.867; CI = 1.704-4.823) and health system factors ($p = .019$; OR = 2.031; CI = 1.125 – 3.664) are significant predictors of utilization of

SRHS since the p-values are less than .05 level of significance at one degree of freedom. The null hypothesis that psycho-cultural and health system factors are not significant predictors of utilization of SRHS is therefore, not accepted. This implies that psycho-cultural and health system factors can be used to predict utilization of SRHS among adolescents.

Qualitative data

Data generated through in-depth interview reveals that only 9 (33.3%) out of 27 interviewees agreed that they have used other SRHS apart from sexuality education which 26 (96.1%) of them use in the schools, churches and at homes. In the words of some interviewees:

"I have never used any of these services" (Enugu-North 002). *"I have only used sex education services"* (Nkanu-West 002). *"I don't use them because I don't think I need them"* (Udi 001). *"I did not use any of them.....though last year during youth week in my church, a health provider came and thought us about sex education"* (Udenu 002). *"Yes I used only sexuality education and services for prevention and management of STIs and HIV and AIDS"* (Ezeagu 002). However, many of these interviewees did not want to reveal the particular services being used.

Few participants in the focus group discussions admitted using SRHS apart from sexuality education. Most males were of the view that SRHS are mainly for females except sexuality education and services for prevention and management of STIs and HIV and AIDS. *"I have not used any of these services. They are only for females or married people"* (Udenu Male FGD-P1). *"It is true. P1 is correct"* (other Ps chorused). *"Yes at times we get some during youth week, seminars and school"* (Udenu Female FGD-P7). *"I was tested for HIV last year"* (Nkanu-West Male FGD-P6). This implies that majority of the participants use sexuality education and services for prevention and management of STIs and HIV and AIDS only.

Discussions

Poor utilization of sexual and reproductive health services among adolescents results to the increase in the prevalence of SRH problems in sub-Saharan Africa, posing a challenge to the actualization of the SDG 3. Determining the factors that make adolescents to use or not to use SRHS is very important in designing interventions to promote adolescents' SRHS utilization. We utilized mixed method research because we have learnt from experience that triangulating multiple methods of data collection is better than using single method especially when collecting sensitive data such as sexuality information. The study aimed at determining predictors of adolescents' utilization of SRHS in Enugu State using quantitative and qualitative methods. The legal age of consent was a challenge because it was difficult to convince the parents of adolescents below the age of 18 years even when the adolescents were ready to participate. On the other hand some adolescents declined their participation because their parents were to give the consent. Nigeria is a multi-ethnic country and this study was conducted in one state, therefore, generalization of the findings may not be realistic.

The utilization of SRHS among the adolescents was low. Sexuality education was the only SRHS utilized by slightly more than one-half of the respondents. This finding could be because these services, apart from sexuality education, were normally provided in the general health facilities which are not so comfortable for adolescents. Previous studies in other countries also reported [23, 19] low utilization of reproductive health services among adolescents. Similarly, qualitative data generated through in-depth interview reveals that very few of the participants agreed that they had used other SRHS apart from sexuality education, which majority of them used in the schools, churches and at homes. However, many of these interviewees did not want to reveal the particular services being used, which was not surprising to us because of the secrecy accorded to sexual issues generally and particularly in the study area. Few participants in IDI and FGD admitted using SRHS apart from sexuality education.

There was statistically significant association between utilization of sexuality education, safe motherhood, and post-abortion care services and socio-demographic factors of age and level of education. Statistically significant association also exists between sexuality education, post-abortion care, and services for the prevention and management of STIs, HIV and AIDS and socio-demographic variable of income, while family planning services was statistically associated with location, level of education and living status. Younger adolescents utilized sexuality education more than the older adolescents. This could be due to the fact that younger adolescents are still in schools where sexuality education is taught, as majority of the adolescents revealed in qualitative data that they used sexuality education services only in schools. The finding is consistent with [11] who reported that age is significantly associated with SRHS but the finding differs from Nisar and White [24], who reported no significant association between age and antenatal care utilization. Surprisingly, adolescents with no formal education used all the SRHS except sexuality education more than adolescents with any formal education. Although some previous studies reported statistical association between level of education and utilization of SRHS [25, 24, 26], the common report has been that those with higher level of education utilize the services more than those with no formal education.

Statistically significant association exist between all the SRHS and psycho-cultural factors. Qualitative data revealed that adolescents believed that services under family planning services are taboo for unmarried adolescents. The cultural belief is that family planning services are for married couples only. They also believed that SRHS will make youth become promiscuous and barren later in life. These beliefs make some adolescents feel ashamed and afraid of using SRHS. This finding is consistent with previous research [27] which reported that cultural beliefs and practices affected utilization of maternal health services and the reason adolescents do not use contraceptives include feeling embarrassed or ashamed to use or purchase contraceptives [21]. Statistically significant association also exist between all the SRHS and health systems factors. The finding was expected because there is lack of youth clinics or units which are expected to have specially trained service providers that provide youth-friendly SRHS. Information from the qualitative data revealed that most interviewees and FGD participants said that pattern of service delivery like long waiting hours, lack of privacy, attitude of health providers and not being youth-friendly in services provision were the major health system factors that influence the use of SRHS by youth. The finding is consistent with Cheptum, et al [27] that lack of facilities, inadequate

staffing and negative staff attitude were associated with access and use of health services. Anusornteerakul, Khamanarong, Khamanarong, and Thinkhamrop [28] reported that health service system is one of the important factors influencing management of youth reproductive health services.

We further ran logistic regression analysis to determine which of these associated factors could predict adolescents' utilization of SRHS. The findings showed that socio-demographic factors of age, level of education, location and living status were significant predictors of adolescents' utilization of SRHS. This implies that an adolescent's personal factor can determine whether or not he or she would use SRHS. The finding agrees with previous studies that reported some of these demographic factors as predictors of SRHS utilization [24, 29]. The findings also showed that psycho-cultural and health system factors are significant predictors of adolescents' utilization of SRHS. Previous studies also reported psychological and cultural factors as significant predictors of utilization of SRHS [30, 27]. The common reason adolescents do not use contraceptives included feeling embarrassed or ashamed to use or purchase condom or any other contraceptives. Additionally, the belief that discussing sexual issue is a taboo prevents parents from rendering age appropriate sex education at home, limiting young ones from getting basic information about sexuality early enough [11]. Health systems factors such as providers' attitude, having good and friendly relationship with the youth, keeping client's information confidential among others, determine youth's access to reproductive health and make youth reproductive health services successful. Proximity of health facility, available services and good reputation of the providers were main predictors for choosing health facilities [31].

Conclusion

The study concluded that some socio-demographic, psycho-cultural and health system factors are predictors of adolescents' access to and utilization of SRHS. These predictors could be addressed through home sex education, regular training of health care providers on youth-friendly services delivery and policy reforms.

Abbreviations

FGD
Focus Group Discussion
HIV and AIDS
Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome IDI:In-depth Interview
LGA
Local Government Area
SPSS
Statistical Package for the Social Sciences
SRH
Sexual and Reproductive Health
SRHS

Sexual and Reproductive Health Services
STIs
Sexually Transmitted Infections
WHO
World Health Organization

Declarations

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Availability of data and materials

The data that support the findings of this study are from different datasets (e.g. PubMed, Doaj, Google, and Google Scholar) are included in the list of references.

Authors' contributions

AN and ES designed the research work. AN collected data with the help of research assistants. All authors contributed to data analysis and drafting of the manuscript.

Authors' information

Authors are academic staff and researchers at the University of Nigeria, Nsukka.

Ethics approval and consent to participate

Both oral and written consent were obtained from the participants. The parents or guardian of participants below the age of 18 years provided both oral and written consent on their behalf. Participation was total voluntary. The Local Institutional Review Board (Postgraduate Studies Review Board), University of Nigeria, Nsukka approved the study procedure.

Consent for publication

Not Applicable

Competing interests

The authors declare that they have no competing interests.

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Tables

Table 1 Socio-Demographic Characteristics of Adolescents that Responded to the Questionnaire on Utilization of SRHS (n=1447)

S/N	Characteristics	%
1	Gender	
	Male	42.9
	Female	57.1
	Total	100.0
2	Age	
	12-16	48.2
	17-22	51.8
	Total	100.0
3	Education	
	Primary	2.2
	Secondary	54.0
	Tertiary	42.0
	None	1.8
	Total	100.0
4	Religion	
	Christianity	96.3
	Islam	1.5
	African Traditional Religion	2.1
	Total	100.0
5	Location	
	Urban	43.3
	Rural	56.7
	Total	100.0
6	Living Status	
	With parents	62.3
	Alone	20.4
	With friends/husband	3.2
	In school	14.1
	Total	100.0
7	Marital Status	
	Married	12.4
	Single	86.8
	Divorced	.4
	Separated	.3
	Total	100.0
8	Parity(females only)	
	None	81.5
	1-3	13.8
	4-6	3.0
	7 and above	1.7
	Total	100.0
9	Monthly Income	
	Below ₦1,000.00k	46.8
	₦1,000.00k-₦4,000.00k	19.8
	₦5,000.00k-₦10,000.00k	16.0
	₦11,000.00k-₦20,000.00k	8.8
	Above ₦20,000.00k	8.6
	Total	100.0

Source: Odo, et al. 2018

Table 2 Percentage Responses on the Utilization of SRHS for Youth in Enugu State (N = 1447)

S/N	Items	Yes	
		f	%
Sexuality Education Services			
1	Human biology	992	68.6
2	Puberty and menstrual hygiene education	1042	72.0
3	Skill to overcome sexual desire	879	60.7
4	Healthy relationships	805	55.6
5	Dangers of pre-marital and unsafe sex	873	60.3
6	Counseling on reproductive health issues	703	48.6
7	Information on harmful cultural practices like female circumcision	665	46.0
8	Information on prevention of non-infectious conditions of reproductive health such as fistulas and cancers	596	41.2
	Cluster % Total		56.6
Family Planning Information and Services			
9	Family planning information and counseling	611	42.2
10	Condoms	628	43.4
11	Oral pills	449	31.0
12	Injectable contraceptives	330	22.8
13	Intrauterine Contraceptive Devices (IUCDs)	318	22.0
14	Other contraceptives	345	23.8
	Cluster % Total		30.9
Safe Motherhood Services			
15	Antenatal care	512	35.4
16	Skilled delivery	439	30.3
17	Postnatal care	483	33.4
18	Immunization	711	49.1
19	Infant feeding information	522	36.1
20	Growth monitoring	499	34.5
	Cluster % Total		36.5
Post Abortion Care Services			
21	Emergency care during bleeding	373	25.8
22	Manual removal of retained product of conception	310	21.4
23	Information on prevention of unwanted pregnancy and abortion	533	36.8
24	Referral	341	23.6
	Cluster % Total		26.9
Services for Prevention and Treatment of STIs and HIV and AIDS			
25	STIs and HIV and AIDS prevention information	818	56.5
26	Voluntary Counseling and Testing (VCT) for STIs and HIV	665	45.9
27	Antiretroviral therapy	332	22.9
28	Treatment of STIs	472	32.6
29	Condoms for prevention of STIs and HIV	634	43.8
	Cluster % Total		40.3
	Overall % Total		38.2

Table 3 Association between Socio-Demographic Factors and Utilization of SRHS (n=1447)

Factors	Sexuality education			Family Planning			Safe motherhood			Post abortion care			Prevention and management of STIs, HIV and AIDS		
	%	X ²	p	%	X ²	P	%	X ²	p	%	X ²	p	%	X ²	p
Age	74.6	16.393	.000*	33.4	.009	.926**	44.0	4.756	.029*	35.3	13.020	.000*	41.9	2.960	.085**
Gender	64.8			33.2			38.4			26.5					
Level of education															
Primary	40.6	15.504	.001*	40.6	8.041	.045*	21.9	26.687	.000*	21.9	16.015	.001*	28.1	5.977	.113**
Secondary	69.5			32.4			42.1			34.4			40.5		
Tertiary	71.5			33.1			39.0			25.8			38.3		
None	57.7			57.7			84.6			46.2			57.7		
Religion															
Ban	70.3	.344	.557**	38.3	12.289	.000*	41.5	.055	.814**	30.3	.105	.746**	41.5	1.614	.204**
Rural	68.9			29.5			40.9			31.1			38.2		
Income															
000	72.5	11.028	.026*	36.5	6.900	.141**	43.7	4.847	.303**	36.3	18.956	.001*	42.7	11.462	.022*
100-4000	70.6			32.2			40.2			26.2			39.5		
500-10000	68.1			28.9			35.8			24.6			34.9		
1000-20000	62.5			28.1			39.8			27.3			28.9		
20,000	60.5			32.3			40.3			25.8			42.7		
Living status															
With parents	68.5	5.835	.120**	31.6	9.175	.027*	39.4	6.596	.086**	30.6	2.652	.452**	39.4	3.762	.288**
Alone	69.5			40.7			47.1			33.9			43.4		
With friends	60.7			31.9			46.8			27.7			40.4		
At school	76.0			30.4			38.7			27.5			34.8		

*Significant **Not significant

Table 4 Association between Psycho-cultural and Health System Factors, and Utilization of SRHS (n=1447)

Predictors	Sexuality education			Family Planning			Safe motherhood			Post abortion care			Prevention and management of STIs, HIV and AIDS		
	%	X ²	p	%	X ²	p	%	X ²	p	%	X ²	p	%	X ²	p
Psycho-cultural	73.2	9.892	.002*	38.9	21.446	.000*	47.4	24.930	.000*	37.7	34.347	.000*	48.2	47.314	.000*
Health system	65.6			27.4			34.5			23.5			30.6		
	72.3	11.999	.001*	35.9	10.375	.001*	42.9	4.334	.037*	32.7	5.721	.017*	42.6	12.483	.000*
	63.2			27.3			37.0			26.4					

*Significant

Table 5 Summary of Logistic Regression Analysis Testing the Null Hypothesis that Socio-Demographic Factors are not Significant Predictors of Utilization of SRHS.

S/N	Variable	B	SE	Wald	df	P-value	Exp (B) (OR)	95% CI for Exp (B)	
								Lower	Upper
	Constant	-7.137	1.976	13.045	1	.000*	.001		
1	Age	.323	.121	7.125	1	.008*	1.382	1.090	1.752
2	Education	-1.103	.291	14.342	1	.000*	.332	.188	.587
3	Location	2.703	.529	26.064	1	.001*	14.921	5.286	42.114
4	Living status	-.555	.184	9.121	1	.003*	.574	.400	.823
5	Income	.074	.112	.438	1	.508**	1.077	.865	1.341

*Significant **Not significant

Table 6 Summary of Logistic Regression Analysis Testing the Null Hypothesis that Psycho-Cultural Health System Factors are not Significant Predictors of Utilization of SRHS.

Variable	B	SE	Wald	Df	P-value	Exp (B) (OR)	95% CI for Exp (B)	
							Lower	Upper
Constant	-3.537	.227	243.075	1	.000*	.029		
Psycho-Cultural	1.053	.265	15.741	1	.000*	2.867	1.704	4.823
Constant	-3.415	.272	158.112	1	.000*	.033		
Health System	.708	.301	5.532	1	.019*	2.031	1.125	3.664

*Significant