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Knowledge and Attitude of Pregnant Women at the University of Benin Teaching Hospital, Benin City, Nigeria, towards Substance Abuse among Pregnant Women

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Abstract. There is a severe dearth of study on the knowledge and attitude of pregnant women towards substance abuse among pregnant women. Therefore, this study was carried out to determine the knowledge and attitude of antenatal clients at the University of Benin Teaching Hospital to substance use among pregnant women. The study was a descriptive cross-sectional one carried out among 364 pregnant women selected by balloting. An interviewer administered questionnaire made up of items concerning socio-demographic data, Knowledge and Attitude towards substance use by pregnant women was used. Most of the respondent 314 (86.3%) were aware of substance abuse and a higher proportion 223 (71.0%) heard about it from television. Of the 314 respondents who were aware of substance abuse, 143 (45.54%) had good knowledge while 171 (54.46%) had poor knowledge. Similarly, 242 (77.10%) had a negative attitude while only 72 (22.90%) had a positive attitude. Although the greatest proportion of pregnant women who had positive attitude towards substance use in pregnancy was represented in those 21-30 years (59.7%), age did not significantly differentiate between pregnant women with positive attitude and those with negative attitude. Education significantly differentiated pregnant women with positive attitude from those with negative attitude. The highest number of those with positive attitude (43.1%) was found among those with secondary level of education. Like age, other variables were not significant. There is need to carry out targeted health education on substance abuse for pregnant women. One should also note the role of disseminating information on substance abuse through the television.

Keywords: Knowledge, Attitude, Pregnant, Women, Nigeria, Substance-Abuse

1. Introduction

Substance abuse refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs (World Health Organisation, 2021). Psychoactive substance use can lead to dependence syndrome- a cluster of behavioral, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulty in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state (World Health Organisation, 2021)). In general, abused drugs may be classified as per the legal status of the substances, as licit or illicit (Marangoni and Félix de Oliveira, 2013). Licit drugs have legal permission for production and its trading and use are not criminalized. Examples are alcohol, tobacco and medications. Whereas for illicit drugs, their production and trade is criminalized (Marangoni and Félix de Oliveira, 2013). Substances are also classified according to their effects on the central nervous system as depressants, stimulants or hallucinogens (Marangoni and Félix de Oliveira, 2013).

According to the 2009 Global Health Risks report, psychoactive substance use is among the top 20 risk factors for death and disability worldwide (Adebowale and James, 2018). Globally, there is an increasing trend for people to use multiple substances, either together at the same time or at different times, further increasing the risk (Adebowale and James, 2018).

Psychoactive substance use is now common among Nigerian women, including pregnant women, and its use during pregnancy has been a major public health issue (Adebowale and James, 2018). Abuse of prescription and illicit drugs in pregnancy is a

growing cause of maternal and neonatal morbidity and mortality (Costa Portela, Moreira Barros, Marques Frota, Pequeno Landim, A, Áfio Caetano, and Ribeiro de Farias, 2013; Reitan, 2019). According to data from the 2012 and 2013 United States of America National Survey on Drug Use and Health, the rate of current illicit drug use (including non-medical use of prescription drugs) in pregnant adolescents and adult was 14.6% among adolescents (aged 15–17 years), 8.6% among young adults (aged 18–25 years) and 3.2% among adults aged 26–44 years (Reitan, 2019). The consequences of drug use in pregnancy include spontaneous abortions, stillbirths, low birth weight, prematurity, neonatal abstinence syndrome and congenital malformations (Reitan, 2019). Many reasons have been put forward as to why a pregnant woman may use a substance. Some of them are use of alcohol prior to pregnancy, use of alcohol by friends and relatives, low socioeconomic status/food shortages, low educational status, being a victim of violence, difficult relationship, personal history of mental symptoms or illness, anxiety, depression, suicidal ideation and behaviour (Onah, Field, van Heyningen and Honikman, 2016; Mpelo, Kibusi, Moshi, Nyundo, Ntwenya and Mpondo, 2018).

Some authors have reported that substance use among pregnant women in Nigeria is a recent phenomenon as Nigeria women embrace western culture (Mutihir, Musa, Daru, Nyango and Audu, 2012). Some reasons why they take these substances during pregnancy include, to help them eat better, because their husbands want them to, to relieve vomiting, perceived benefit for the unborn baby, few have no reason (Mutihir, Musa, Daru, Nyango and Audu, 2012). More worrisome is the current finding showing that there is no safe level of alcohol exposure for the developing fetus (Mutihir, Musa, Daru, Nyango and Audu, 2012). Pregnant women in some cultures often use alcohol-based herbal mixtures due to the myth that it prevents abortions/premature labor, improves sleep and enable them have a strong and healthy baby (Adebowale and James, 2018; Tabatabaei, Behmanesh-Pour, Salimi-Khorashad, Zaboli, Sargazi-Moakhar and Shaare-Mollashahi, 2018).

The incidence of substance abuse among women of reproductive age has continued to increase, thus contributing to the growing problem of substance abuse during pregnancy (Coleman-Cowger, Oga, Peters, Trocin, Koszowski and Mark, 2018). The highest rate of alcohol and drug use in North America is among women in the child bearing age, with 6 million women experiencing alcohol use problems, and more than 5 million currently using illicit substances (Coleman-Cowger, Oga, Peters, Trocin, Koszowski and Mark, 2018). Prenatal alcohol abuse is associated with long-term effects, such as cognitive and behavioral challenges, adverse speech and language outcomes, executive functioning deficits in children, and psychosocial consequences in adulthood (Envuladu, Agbo, Ashikeni and Zoakah, 2013).

Also of concern are the deleterious health effects of second-hand smoke on newborns, which include higher rates of respiratory and ear infections, sudden infant death syndrome, behavioral dysfunction and cognitive impairment (Envuladu, Agbo, Ashikeni and Zoakah, 2013). Additionally, women who were smokers before pregnancy are likely to stop breastfeeding early so that they can take up smoking again (Envuladu, Agbo, Ashikeni and Zoakah, 2013). Infants who are not breastfed or weaned early are at increased risks of otitis media, diarrhea, lower respiratory tract infection, sudden infant death syndrome, leukemia, and type 1 diabetes. Among mothers, those who did not breastfeeding or whose babies were weaned off breast early are at increased risks of breast cancer, ovarian cancer, diabetes, hypertension, and myocardial infarction (Forray, 2016).

Substance abuse during pregnancy may be difficult to detect because the signs and symptoms of this behavior are often subtle, and self-reports of substance use may be infrequently elicited. Physicians may fail to routinely screen for substance use among pregnant women and some pregnant women may seek little or no prenatal care (Stuebe, Horton, Chetwynd, Watkins, Grewen and Meltzer-Brody, 2014). While routine checks are available for some medical conditions (for example, diabetes and anemia) at the ante-natal clinic, healthcare providers are reluctant to screen for psychoactive substance use citing lack of effective screening tools and knowledge deficits (Adebowale and James, 2018). The implication is that women who are at risk are not identified and managed appropriately (Rausgaard, Ibsen, Jørgensen, Lamont and Ravn, 2015). This is worrisome because of the unacceptable high prevalence of lifetime and current use of substances among pregnant women (Passey, Sanson-Fisher, D'Este and Stirling, 2014; Ajogbon, Babalola, Adebowale, 2018).

As serious and complex the problem of substance use in pregnancy is, there is a dearth of study on the knowledge and attitude of pregnant women towards substance abuse among pregnant women. Therefore,

this study was carried out to determine the knowledge and attitude of antenatal clients at the University of Benin Teaching Hospital towards psychoactive substance use among pregnant women. The outcome of the study would constitute veritable ingredients to formulate prevention and control strategies for drug use among pregnant women.

2. Research Methodology

The study was a descriptive cross-sectional one carried out among pregnant women visiting the antenatal clinic of the University of Benin Teaching Hospital (UBTH). UBTH is a tertiary health facility located in Ugbowo, Benin City, Nigeria and was established in 1973 as the sixth of the first-generation Teaching Hospitals in Nigeria, to complement the University of Benin and to provide secondary and tertiary care to the then Midwestern region (now Edo and Delta States) and its environs.

All pregnant women visiting the antenatal clinic of UBTH to receive antenatal services during the period of the study and were selected by the sampling technique and gave written informed consent were included in the study. The minimum sample size, n was calculated using the formula $n=Z^2pq/d2$ and n was found to be 331. In order to provide a backup for poor or non-response, a ten percent (10%) margin was allowed and therefore sample size became 364. Simple random sampling technique (balloting) was used to recruit participants from a sampling frame of four hundred registered pregnant women.

An interviewer administered questionnaire was used to collect data. Section A was made up of socio-demographic data, B, Knowledge of Respondents and section C, Attitude of Respondents. The questionnaire was pre-tested using 10% of the sample size at Central Hospital, Benin City, Edo State, all errors or inconsistencies were noted and thereafter corrected. The data collected was analyzed using the Statistical Package for Social Sciences version 22.0 software (IBM Corp., 2013). Univariate analysis was done to assess socio-demographic variables as well as variables assessing the knowledge and attitude. Bivariate analysis was done to determine the association between the socio-demographic variables and knowledge/attitude to substance use. Chi square was used to test for the associations and fisher's exact was used in cases where expected frequencies was less than 5 in greater than or equal to 20% of cells.

A total of 20 questions were used to assess for knowledge under 3 domains, which were knowledge of substances abuse, knowledge of types of substances abused and knowledge of effects of substances. Questions under each of these domains were scored. A score of 1 was given to questions answered correctly and 0 for wrong answers. Minimum and maximum scores for each domain were calculated and scores were converted to percentages and graded as follows: scores of 70% and above were categorized as good knowledge while scores below 70% were categorized as poor knowledge.

Six questions were used to assess the attitude of the respondents towards substance abuse using a 3-point Likert scale. The most correct response was given a score of 2 and the least correct response was given a score of 0, giving a minimum score of 0 and a maximum score of 12. The total attitude score obtained was converted to percentages and graded as follows: those with scores of 60% or greater had a positive attitude, while those with scores less than 60% had a negative attitude.

Approvals for the study were obtained from the Head, Department of Community Health, University of Benin, Benin City, Nigeria and the State Ministry of Health, Edo State, Nigeria. Written informed consent was obtained from each respondent before collection of data; names and other identifiers were not obtained. Respondents were informed that they had the right to withdraw from the study at any time.

3. Results

A total of 364 respondents participated in the study and their questionnaires were analyzed. The results are presented in the tables below:

Table 1: Socio-demographic characteristics of the respondents

Variable	Frequency (n=364)	Percent
Age (years)		
18-20	14	3.8
21-30	207	56.9
31-40	131	36.0
41-47	12	3.3
Mean age ± SD (29.77± 5.453)		
Level of education	47	12.9
No formal education	67	18.4
Primary	121	33.2
Secondary	129	35.4
Tertiary		
Religion	318	87.4
Christianity	38	10.4
Islam	8	2.2
Africa traditional religion, ATR		
Family type		
Nuclear	292	80.2
Extended	72	19.8
Family structure		
Monogamous	299	82.1
Polygamous	65	17.9
Occupation		
Skill level 0	50	13.7
Skill level 1	18	49
Skill level 2	199	54.7
Skill level 3	84	23.1
Skill level 4	13	3.6
Household size		
≤ 6	278	76.4
> 6	86	23.6

A higher proportion, 207 (56.9%) of the respondents fell within the age group of 21-30 years with a mean (SD) age of 29.77 (5.453) years. The proportion of the respondents with tertiary level of education was 129 (35.4%). A majority, 140 (39.2%) of the respondents belonged to the Benin ethnic group. Most 318 (87.4%) of the respondents were Christians, while Islam and Africa traditional religion (ATR) accounted for 10.4% and 2.2% respectively. More than half, 292 (80.2%) of the respondents were from nuclear family type while 299 (82.1%) of the respondents were from monogamous family structure. A majority of the respondents fell into skill level 2 of the International Labour Organisation (ILO) occupational classification, accounting for 199 (54.7%).

Table 2: Knowledge (awareness and source of awareness) of substance abuse

Variable	Frequency (n=364)	Percent
Awareness of substance abuse		
Aware	314	86.3
Not aware	50	13.7
Source of information on substance abuse (n = 314)		
Internet	190	60.5
Television	223	71.0
Radio	165	47.5
Health workers	152	48.4
Print media	86	27.4

N.B: *Some respondents had more than one source of information.*

Most of the respondent 314 (86.3%) were aware of substance abuse and a higher proportion 223 (71.0%) heard about it from television. While print media was the least source of information, with 86 (27.4%).

Table 3: Knowledge (meaning or definition) of substance abuse

Variable	Correct Frequency (%)	Incorrect Frequency (%)
What is substance abuse		
Harmful use of psychoactive substance	190 (60.5)	124 (39.5)
Consumption of drugs and or alcohol in amounts that is harmful to an individual	235 (74.8)	79 (25.2)
Use of drugs that makes you feel good	90 (28.7)	224 (71.3)
Use of drugs that are expired	59 (18.8)	255 (81.2)
Consumption of drugs not prescribed by the doctor	150 (47.8)	164 (52.2)
Use of substance that makes you look good	4 (7.6)	290 (92.4)

Majority 235 (74.8%) of the respondents said substance abuse is the consumption of drugs and or alcohol in amounts that is harmful to an individual.

Table 4: knowledge of types of substances of abuse and effects

Variable	Correct Frequency (%)	Incorrect Frequency (%)
Knowledge of types		
Tramadol	259 (82.5)	55 (17.5)
Codeine	216 (68.8)	98 (31.2)
Marijuana	215 (68.5)	99 (31.5)
Alcohol	199 (63.4)	115 (36.6)
Agbo	120 (38.2)	194 (61.8)
Nicotine	113 (36.0)	201 (64.0)
Monkey tail	107 (34.1)	207 (65.9)
Kola nut	63 (20.1)	251 (79.9)
Paracetamol	26 (8.3)	288 (91.7)
Vitamin C	12 (3.8)	302 (96.2)
Ampicillin	11 (3.5)	303 (96.5)
Do this substance have beneficial effects to the mother	234 (74.5)	80 (25.5)
Beneficial effects		
Boost immunity	61 (76.25)	19 (23.75)
Improves brain function	22 (27.5)	58 (72.5)
Do the substance have beneficial effect to the fetus	264 (84.1)	50 (15.9)
Beneficial effects		
Boost immunity	29 (58.0)	21 (42.0)
Improves brain function	29 (58.0)	21 (42.0)
Harmful effect of substance use to the mother		
Hallucination	97 (35.7)	175 (64.3)
Poor judgement	128 (47.1)	144 (52.9)
Addiction	214 (78.7)	58 (21.3)
Development of chronic disease	120 (43.8)	154 (56.2)
Harmful effect of substance to the fetus		
Miscarriage	223(82.3)	48 (17.7)
Low birth weight	127(46.9)	144 (53.1)
Premature birth	144(53.1)	127(46.9)
Poor brain development	105(38.7)	166 (61.3)

Table 5: Attitude towards substance abuse

Variable	Agree (n = 314) Freq (%)	I don't know (n = 314) Freq (%)	Disagree (n = 314) Freq (%)
Substance abuse is good practice among pregnant women	42 (13.4)	50 (15.9)	222 (70.7)
Substance abuse should be encouraged	36 (11.5)	26 (8.3)	252 (80.3)
Substance abuse is common among pregnant women	81 (25.8)	95 (30.3)	138 (43.9)
Women who practice substance abuse are more likely to have poor delivery outcomes	197 (62.7)	55(17.5)	62 (19.7)
Women who practice substance abuse are likely to give birth to babies with birth defect	196 (62.4)	67 (21.3)	51 (16.2)
Children born to women who abuse substances are likely to have healthy babies	75 (23.9)	78 (24.8)	161 (51.3)

Most 222 (70.7%) of the respondents disagreed that substance abuse is a good practice among pregnant women, 252 (80.3%) disagreed that substance abuse should be encouraged, while 138 (43.9%) disagreed that substance abuse is common among pregnant women. A higher proportion 197 (62.7%) of respondents agreed that women who practice substance abuse are more likely to have poor delivery outcomes, 196 (62.4%) agreed that women who practice substance abuse are likely to give birth to babies with birth defect, 161 (51.3%) disagreed that children born to women who abuse substances are likely to be healthy babies.

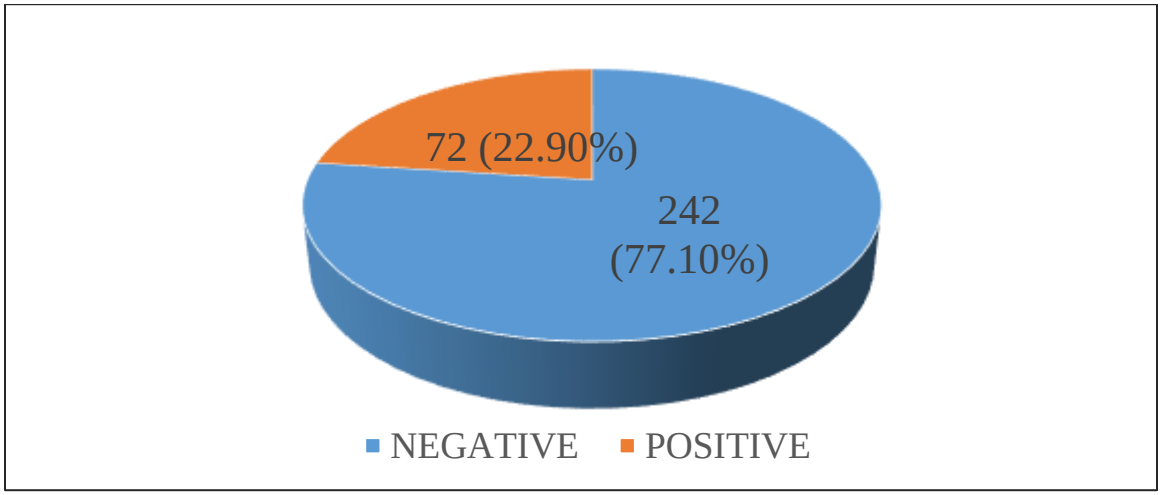

Figure: *Attitude of respondents towards substance abuse*

Pie chart depicting overall score for Attitude towards substance abuse. A higher proportion 242 (77.10%) had negative attitude while a lower proportion 72 (22.90%) had positive attitude.

Table 6: Factors associated with attitude to substance abuse

VARIABLE	Attitude		χ^2	P VALUE
	Negative (n = 242) Freq (%)	Positive (n = 72) Freq (%)		
Age group				
18-20	10 (4.2)	3 (4.2)		
21-30	139 (57.4)	43 (59.7)		
31-40	85 (35.1)	23 (31.9)		
41-47	8 (3.3)	3 (4.2)	0.331	0.954
Level of education				
No formal education	22 (9.1)	8 (11.1)		
Primary	39 (16.1)	16 (22.2)		
Secondary	74 (30.6)	31 (43.1)		
Tertiary	107 (44.2)	17 (23.6)	9.967	0.019
Religion				
Christianity	218 (90.1)	59 (81.9)		
Islam	21 (8.7)	11 (15.3)		
Africa traditional religion	3 (1.2)	2 (2.8)	3.613	0.164
Family structure				
Monogamous	202 (83.5)	58 (80.6)		
Polygamous	40 (16.5)	14 (19.4)	1.33	0.565
Family type				
Nuclear	199 (82.2)	55 (76.4)		
Extended	43 (17.8)	17 (23.6)	1.225	0.268
Occupation				
Skill level 0	32 (13.2)	10 (13.9)		
Skill level 1	8 (3.3)	5 (6.9)		
Skill level 2	126 (52.1)	40 (55.6)		
Skill level 3	63 (26.0)	17 (23.6)	5.916	0.205
Skill level 4	13 (5.4)	0 (0.0)		
Household size				
≤ 6	189 (78.1)	56 (77.8)	0.003	0.954
> 6	53 (21.9)	16 (22.2)		

The greatest proportion of pregnant women who had positive attitude towards substance use in pregnancy was represented in these 21-30 years (59.7%), age did not significantly differentiate between pregnant women with positive attitude and those with negative attitude. Education significantly differentiated pregnant women with positive attitude from those with negative attitude. The highest number of those with positive attitude (43.1%) was found among those with secondary level of education. Like age, other variables were not significant.

Table 7: Association between attitude and knowledge of substance abuse

	Attitude		χ^2	p value
	Negative frequency (%)	Positive frequency (%)		
Knowledge of substance abuse				
Good	112 (78.3)	31 (21.7)		
Poor	130 (76.0)	41 (24.0)	0.233	0.629

One hundred and twelve (78.3%) of those that had good knowledge of substance use had a negative attitude while 41 (24.0%) of those who had poor knowledge had a positive attitude.

4. Discussion on the findings

A higher proportion of respondents fell within the age group of 20-30 years. The mean age of respondents in this study was 29.77±5.453. This is not too different from the finding of a descriptive cross-sectional study done in 2011 at the antenatal clinic of Jos University Teaching Hospital. The mean age found in the Jos study was 22.5±5.1 years (Mutihir, Musa, Daru, Nyango and Audu, 2012). This variation in age may be due to the culture of early age of marriage that is common in the Northern Nigeria and the Middle belt where Jos is located compared to the Southern Nigeria, where the current study was conducted. The higher female education in the southern Nigeria may also explain it, as higher female education delays age at marriage (Madgula, Groshkova and Mayet, 2011).

A higher proportion of the respondents had tertiary level of education. This may show that female education has gained significant root in Nigeria. The predominant ethnic group was Benin, which is the indigenous ethnic group in Benin City. Since the study was carried out in Benin City, this may not come as a surprise. Majority of the respondents were Christians, which is known to be the predominant religion in the southern part of Nigeria, while Islam and Africa traditional religion (ATR) accounted for a small proportion of the respondents. More than three-quartre of the respondents were of nuclear family type and a similar number were from monogamous family structure. This is in keeping with a descriptive cross-sectional study carried out in 2015 among 130 pregnant women attending antenatal clinic at a federal government owned tertiary hospital in Ogun State, southwestern Nigeria, that sought to explore psychoactive substance use among pregnant women. The Ogun State study showed that most of the respondents were married in a monogamous setting (Wilson and Thorp, Jr., 2008). This may be due to the influence of Christianity which is the predominant religion practiced in southern Nigeria. Christianity encourages the union of one man one wife. Majority of the respondents (more than half) fell into skill level 2 of the ILO classification. This finding is paradoxical since majority of the respondents had tertiary level of education.

Most of the respondent 314 (86.3%) were aware of substance abuse and a higher proportion 223 (71.0%) heard about it from television. While print media was the least source of information, with 86 (27.4%). Majority, 235 (74.8%) of the respondents rightly said substance abuse is the consumption of drugs and or alcohol in amounts that is harmful to an individual. Most, 222 (70.7%) of the respondents disagreed that substance abuse is a good practice among pregnant women; 252 (80.3%) disagreed that substance abuse should be encouraged; while 138 (43.9%) disagreed that substance abuse is common among pregnant women. A higher proportion, 197 (62.7%) of respondents agreed that women who practice substance abuse are more likely to have poor delivery outcomes; 196 (62.4%) agreed that women who practice substance abuse are likely to give birth to babies with birth defect; 161 (51.3%) disagreed that children born to women who abuse substances are likely to be healthy babies.

A higher proportion 242 (77.10%) had negative attitude while a lower proportion 72 (22.90%) had positive attitude. Although the greatest proportion of pregnant women who had positive attitude towards substance use in pregnancy was represented in those 21-30 years (59.7%), age did not significantly differentiate between pregnant women with positive attitude and those with negative attitude. Education significantly differentiated pregnant women with positive attitude from those with negative attitude. The highest number of those with positive attitude (43.1%) was found among those with secondary level of education. Like age, other variables were not significant.

One hundred and twelve (78.3%) of those that had good knowledge of substance use had a negative attitude while 41 (24.0%) of those who had poor knowledge had a positive attitude. This may be seemingly absurd or self-contradictory. One would have expected that a good knowledge of substance abuse would mean the right (positive) attitude to substance abuse. Even though this was not statistically significant, it is a cause for concern.

The finding that most of the respondents had negative (poor) attitude toward substance abuse is inconsistent with the descriptive cross-sectional study conducted among 130 pregnant women in Jos, Plateau State, Nigeria. Most of the pregnant women of the stated study agreed that abusing substance is wrong (Coleman-Cowger, Oga, Peters, Trocin, Koszowski and Mark, 2018). The differences in the method of determining attitude can explain the difference. A poor attitude toward substance abuse may translate to abuse of substance during pregnancy and consequently impairment of maternal and child health. Most of the respondents with negative attitude were also found among respondents within the age group of 21-30 years while a lower proportion, 8 (3.3%) of those with negative attitude were within the age group of 41-47years. This is in tandem with a study done in Jos, Nigeria, which reported that most

of the respondents with negative attitude were within the age group of 20–30 years (Envuladu, Agbo, Ashikeni and Zoakah, 2013). This age group was most represented in this study and this age group may be most impressionable, being immediately after adolescent or young adults.

5. Conclusion and Recommendation

The Knowledge and attitude of the pregnant women towards substance use in pregnancy was poor. There is need to carry out targeted health education on substance abuse for pregnant women. One should also note the popular role of disseminating information on substance abuse through the television.

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