LWATI: A Journal of Contemporary Research, 10(2), 22-31, 2013
ISSN: 1813-2227

Alcohol Consumption and Awareness of Associated Neuro-Psychological Implications in Foetal and Early Childhood Development

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ABSTRACT

This paper investigated alcohol consumption and awareness of associated neuro-psychological implications in foetal and early childhood development in Obio/Akpor Local Government Area of Rivers State, Nigeria. The design was descriptive survey and the sample was 300 expectant women who were drawn through accidental sampling technique from 6 hospitals in the area of study. Three research questions were posed and two hypotheses were formulated to guide the study. Relevant data for analysis were collected through the indirect administration of copies of a researchers developed questionnaire called "Alcohol Consumption Implications Questionnaire on the respondents. The reliability co-efficient of three sections of the instrument were 0.79, 0.83 and 0.75. The research questions were answered with mean and standard deviation while the hypotheses were tested with t-test of independent means. The results among other things show that while the alcohol consumption level of expectant women is high, they have very faint awareness about the effects of their alcohol consumption on the neuro-psychological development of their foetus and children. The results equally show that marital status and level of education do not significantly influence the awareness of expectant women regarding the effects of alcohol consumption on the neuro-psychological development of foetus and children. These results were discussed, conclusions drawn, and some recommendations were also made.

Key words: Alcohol consumption, neuro-psychological; development.

BACKGROUND OF THE STUDY

One of the most commonly abused drugs in Nigeria is alcohol. Its abuse dates back to the ancient days when people started the production of alcoholic drinks from local raw materials. Like any other drug, alcohol is abused when it is consumed without medical prescription. Alcohol is a social drug. Unlike many other drugs, free alcohol consumption is not prohibited in Nigeria, except in some northern states where Islamic law operates (Agbakwuru, 2012a).

Although reliable statistical data about alcohol consumption in Nigeria is lacking, available record (Awake, October 8, 2005) shows that there are over 15 million alcoholics in Nigeria. This figure which represents about 12 percent of the nation's population excludes a greater number who drink casually, lightly or moderately. Research report (Agbakwuru 2012a) has shown that the high number or percentage of the nation's population that take alcohol is a source of serious concern because any level or quantity of consumption of alcohol have adverse physical, psychological and social consequences.

Perhaps, the most worrisome part of the high percentage of Nigerians who consume alcohol is the involvement of expectant women in the act. Despite the fact that there is an apparent lack of statistical data on the number of expectant women that take alcohol in Nigeria, personal observations/interactions of the researchers with expectant women as well as information gathered through informal interviews with some health workers who provide anti-natal care to expectant women show that many expectant women in the country take alcohol casually, lightly and even heavily. This situation is worrisome because any quantity of alcohol consumed by an expectant woman creates some problems in the neuro-psychological development of the foetus/children. Neuro-psychological development of foetus and children here refers to the interface between neurology and psychology in the development of foetus and children. (Colman, 2003). It deals with the effects of disorders of the brain and nervous system associated with expectant women's alcohol consumption on the growth, development, behaviour and mental experience of foetus and children. Studies (Goldsmith, 2004 & Kismodel, Wisborg, Olsen, Henriksen and Secher, 2002) have shown that even small quantity of alcohol consumed, especially during the early months of pregnancy, may have direct and hazardous effects on the developing foetus and children. In fact, research report (Kismodel, Wisborg, Olsen, Henriksen and Secher, 2002) has linked increased cases of miscarriages and stillbirths to light drinking of alcohol by expectant women.

Furthermore, review of research reports on the effects of alcohol consumption on the development of the foetus by Brannon and Feist (2007) show that excessive consumption of alcohol during pregnancy produces facial abnormalities, growth deficiencies, central nervous system disorders, and mental retardation in the foetus. These problems are associated with

defects in the neurons. According to the same source, neuron related disorder has increased during recent years climbing from an incidence of 0.1 per 1,000 births in 1979 to between 0.5 and 2.0 per 1,000 births during the 1990s. Additional research report (Nkporbu and Stanley 2011) has also shown that exposure of the growing foetus to psychoactive substances could result in an array of abnormalities in the development of the central nervous system with consequent later childhood and/or adolescent mental disorders. According to the same research report, a critical study of the case notes of 3,974 patients by the researchers between January 2007 to December 2011 show that 516 (12.9%) cases were diagnosed with variations of child and adolescent psychiatric disorders. Out of this number, 112 (21.7%) had history of maternal psychoactive substance abuse. Eighty three or 74.1 percent of this number involved alcohol use with 54 (68.6%) falling into the category of alcohol dependence.

The above painted picture is worrisome when it is recalled that to the best of the researchers' knowledge, there is an apparent lack of research reports in Nigeria that have authenticated what is informally known or believed about expectant women's alcohol consumption in the country. The result of this is that presently, no one can make an authoritative statement about expectant women's alcohol consumption and awareness of associated neuro-psychological implications in foetal ad early childhood development in Nigeria as well as influences of marital status and level of education on expectant women's awareness of the effects of alcohol consumption on the neuro-psychological development of foetus and children. This study is therefore embarked upon to authenticate or refute what is currently believed about expectant women's alcohol consumption in Nigeria. It is hoped that besides enriching knowledge bank, the results of this study will equally be useful to professional guidance counsellors, psychologists, social workers, etc. in coming up with useful preventive and remedial measures aimed at checkmating any problem that may be discovered.

Research Questions

This study was guided by the following research questions:

1) What is the alcohol consumption level of expectant women?
2) What are the reasons for alcohol consumption among expectant women?
3) What is the level of awareness of expectant women regarding the effects of alcohol consumption on the neuro-psychological development of foetus and children?
4) To what extent does marital status influence expectant mothers' awareness of the effects of alcohol consumption on the neuro-psychological development of foetus and children?
5) To what extent does level of education influence expectant mothers' awareness of the effects of alcohol consumption on the neuro-psychological development of foetos and children?

Hypotheses

This study was guided by the following hypotheses

1. Marital status does not significantly influence expectant mothers' awareness of the effects of alcohol consumption on the neuro-psychological development of foetus and children?
2. Level of education does not significantly influence expectant mothers' awareness of the effects of alcohol consumption on the neuro-psychological development of foetus and children?

METHODOLOGY

The design of this study was descriptive survey. It was carried out in Obio/Akpor Local Government Area of Rivers State, Nigeria. Local government Area here refers to the third tier of government in Nigeria. The sample of the study consisted of 300 expectant women who were receiving antenatal care from 6 hospitals in the area of study. Five of these hospitals are privately owned while the remaining one is a public hospital. They were drawn through accidental sampling technique. This sampling technique involved administering copies of the research instrument on those who came for antenatal care. Despite its inherent shortcomings, this sampling technique was considered most appropriate for this study because all the expectant women do not attend antenatal care on the same day and at the same time for randomization to be carried out.

Copies of a questionnaire called "Alcohol consumption implications questionnaire" were administered indirectly to the respondents through the doctors and nurses who cared for them as they come for antenatal care. The instrument was a non-cognitive, structured scale developed by the researchers in the pattern of a modified 4-point Likert-type scale. It consisted of 4 sections. Section A elicited the respondents' personal data while sections B, C and D contained items that elicited information for answering the research questions and testing the hypotheses.

The reliability co-efficient of sections B, C and D of the instrument were 0.79, 0.83 and 0.75 respectively. These were ascertained through the test retest method within an interval of two weeks based on the responses of 20 expectant women who were composed from one hospital that did not form part of the study.

RESULTS

The results of the statistical analysis are presented in the following tables.

Table 1: Mean and standard deviation analysis of alcohol consumption level of expectant women.

S/N	Items	Criterion mean	Mean	S.D
1	Since I conceived, I have been drinking alcoholic drinks	2.50	3.26	0.98
2	I drink whenever I am offered some drink or when I can buy alcoholic drink.	2.50	2.95	1.02
3	I drink only occasionally	2.50	3.58	0.87
4	I cannot do without drinking alcoholic drinks	2.50	3.37	0.67
5	Drinking is like a hobby to me	2.50	3.29	1.11
6	I drink responsibly.	2.50	2.45	0.85
7	Drinking alcoholic drinks has become my habit.	2.50	2.26	0.77

The results in table 1 show that the grand mean score is 3.02 while the grand criterion mean score is 2.50. Since the grand mean score is greater than the grand criterion mean score, the conclusion which was drawn from the result is that the alcohol consumption level of expectant women is high.

Table 2: Mean and standard deviation analysis of why expectant women drink alcohol

S/N	Items	Criterion mean	Mean	S.D
1	To relieve tension/stress	2.50	2.62	0.88
2	To feel high	2.50	1.63	1.04
3	To fit in or belong	2.50	2.01	0.86
4	Because it is good to one's health	2.50	2.59	0.93
5	Because one is pressured into drinking	2.50	1.94	0.95
6	Because it is part of social life	2.50	2.68	0.65
7	Because one's culture encourage drinking	2.50	2.55	0.71
8	Because it gives one energy	2.50	2.02	0.77
9	To be bold	2.50	1.89	0.82

The results in table 2 show that the mean scores of items 1, 4, 6 and 7 are equals to or greater than the criterion mean score hence they were accepted as the reasons why expectant women drink. The conclusion which was drawn

from these results is that expectant mothers drink to relieve tension/stress; because they believe it is good for their health; because it is part of social life and because their cultures encourage drinking.

Table 3: Mean and standard deviation analysis of expectant women's awareness of effects of alcohol consumption on the neuro-psychological development of foetus and children.

S/N	Items	Criterion mean	Mean	S.D
1	Miscarriages and still births	2.50	2.37	0.89
2	Facial abnormalities in the foetus/children	2.50	1.95	0.92
3	Growth deficiencies in the foetus/children	2.50	1.99	0.68
4	Central nervous system disorders in the foetus/children	2.50	1.88	0.78
5	Mental retardation	2.50	1.86	0.59
6	Childhood/adolescent mental disorders	2.50	1.89	0.64

The results in table 3 show that all the 6 items were rejected because their mean scores are below the criterion mean score. The conclusion which was drawn from these results is that the respondents have very faint awareness about the effects of their alcohol consumption on the neuro-psychological development of their foetus and children.

Table 4: t-test analysis of expectant single and married women's awareness of the effects of alcohol on the neuro-psychological development of foetus and children.

Variables	N	Mean	S.D	D.f	t-cal	t-crit	Remark
Single woman	58	18.93	3.85	298	1.22	1.96	Not significant
Married women	242	18.26	3.28				

The result on table 4 shows that at 0.05 alpha level and 298 degree of freedom, the t-calculated of 1.22 is less than the t-critical value of 1.96. In the light of this result, the null hypothesis was retained. The conclusion which was drawn from this result is that single and married expectant women do not differ significantly in their awareness regarding the effects of alcohol consumption on the neuro-psychological development of foetus/children.

Table 5: t-test analysis of influence of level of education on expectant women's awareness of effects of alcohol on the neuro-psychological development of foetus and children.

Variables	N	Mean	S.D	D.f	t-cal	t-crit	Remark
Maximum of G.C.E. O/L	186	1564	4.05	298	-1.05	1.96	Not significant
More than G.C.E. O/L	114	16.23	5.11				

*Significant at 0.05 level

The result above shows that the t-calculated value of -1.05 is less than the t-critical of 1.96 at 0.05 alpha level and df of 298. Based on this result, the null hypothesis was retained. The conclusion which was drawn from this is that level of education does not significantly influence the awareness of expectant women regarding the influence of alcohol consumption on the neuro-psychological development of their foetus and children.

DISCUSSION

The statistical analysis of research question 1 shows that the alcohol consumption level of expectant women is high. Out of the 7 items presented to the respondents, 4 viz: since I conceived, I have been drinking alcoholic drinks; I drink only occasionally; drinking is like a hobby to me; and I drink responsibly, have mean scores that are greater than the criterion mean score of 2.50.

This finding is worrisome when one recalls that alcohol is a drug (Agbakwuru, 2008 & Agbakwuru, 2012a) and like any other drug, alcohol has undesirable side effects in the body. This finding is also very disturbing when one recalls the result of the study by Kismodel, Wisborg, Olsen, Henriksen and Secher (2002), which shows that any quantity of alcohol consumed by an expectant woman creates some problems in the neuro-psychological development of foetus/children. Such problems include:

- Miscarriages and still births.
- Facial abnormalities in the foetus/children.
- Growth deficiencies in the foetus/children.
- Central nervous system disorders in the foetus/children.
- Mental retardation.
- Childhood/adolescent mental disorders.

In a related way, the results of the statistical analysis of research question two show that expectant women drink to relieve tension/stress;

because they believe it is good to their health; because they see it as part of social life; and because their cultures encourage drinking. These reasons show two major negative things. The first is that the respondents have an irrational way of coping with stress while the second is that their moderate drinking of alcohol is not grounded on sound knowledge about its effects on their health.

Similarly, the results of research question three shows that all the 6 items presented to the respondents were rejected for the reason of their mean scores falling below the criterion mean score of 2.50. What these results mean is that the respondents have no awareness of the effects of their alcohol consumption on the neuro-psychological development of their foetus and children. These results are realistic in the light of the fact that as many as 186 or 62 percent of the respondents do not possess more than General Certificate of Education, Ordinary Level as their academic qualifications. The result of this is that the majority of the respondents are either illiterates or semi-illiterates. Their low level of educational qualifications has thus deprived them the opportunity of being properly informed about life in general and the effects of their alcohol consumption on the neuro-psychological development of foetus and children in particular. It is in recognition of this type of situation and in an effort to solve it that Agbakwuru (2012b) strongly advocated for community guidance and counseling in Nigeria.

Furthermore, the statistical test of hypothesis one shows that marital status does not significantly influence the level of awareness of expectant women regarding the influence of alcohol consumption on the neuro-psychological development of foetus and children. Looking closely at the data on table 4, two additional things can be clearly observed. The first is that those who are married have a lower mean score (18.26) than those who are single (18.93). The slight mean difference means that those who are single have a slightly higher level of awareness than those who are married. However, the slight mean difference is not high enough to be statistically significant. Another major revelation from the table is that the higher standard deviation of those who are single (3.85) shows that they are more widely spread in their responses than those who are married (3.28) (Ali, 1996).

Finally, the result of hypothesis two shows that level of education does not significantly influence the awareness of expectant women regarding the influence of alcohol consumption on the neuro-psychological development of foetus and children. However, the higher mean score of the more educated group (more than G.C.E O/L) shows that they have a slightly higher level of awareness than the less educated group (maximum of G.C.E. O/L). Although the difference is not significant, the slight difference observed confirms the belief that higher level of educational attainment leads one to more awareness/knowledge. This position is supported by the result of work by Ekeh and Diorgu (In press) in which higher level of education was positively implicated in HIV/AIDS awareness among pregnant women. In addition, the

higher standard deviation of the more educated group shows that they are more varied in their responses than the less educated group.

CONCLUSION

In the light of the results of this study, the following conclusions were drawn:

- The alcohol consumption level of expectant women is high.
- Expectant women drink to relieve tension/stress; because they believe it is good for their health; because it is part of social life; and because their cultures encourage drinking.
- Expectant women have very faint awareness about the effects of their alcohol consumption on the neuro-psychological development of their foetus and children.
- Single and married expectant women do not differ significantly in their awareness regarding the effects of alcohol consumption on the neuro-psychological development of foetus/children.
- Level of education does not significantly influence the awareness of expectant women regarding the influence of alcohol consumption on the neuro-psychological development of foetus/children.

RECOMMENDATIONS

In the light of the findings of this study, the following recommendations are hereby made:

- Professional guidance counselors, psychologists, health workers, and other relevant professionals should engage in aggressive sensitization of women in general and expectant women in particular on the dangers of alcohol consumption to the neuro-psychological development of their foetus and children.
- Governments at the federal, state and local government levels should take necessary measures to control the glamorizing of alcohol in media advertisements. All those who advertise alcoholic drinks should be compelled by law to add to their advertisement a warning that alcohol consumption is dangerous to the neuro-psychological development of foetus and children.
- Traditional rulers should take a critical look at those cultural practices that encourage irresponsible drinking of alcohol with a view to discouraging, modifying or abrogating them.

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