Alcohol Consumption and Pattern of Blood Pressure Distribution among Universities’ Staff in South Western Nigeria

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Abstract:
This study was designed to find out the level of alcohol consumption and pattern of blood pressure distribution among Universities’ staff in south Western Nigeria. The cross sectional descriptive survey design was adopted for this study. The population for the study comprised of all Universities’ staff in South Western Nigeria. A sample of 1800 respondents selected using multistage random sampling technique was used. Two instruments were used for this study. The first instrument sought information on the bio-data of the respondents, the second instrument is digital sphygmomanometer used to monitor and record the actual blood pressure readings of the respondents. The first instrument was validated by three experts in health education and the reliability was determined using test re test method. A coefficient of 0.85 was obtained and this was considered adequate for the study. The second instrument was calibrated and found to be good enough for the study. Data was analyzed with descriptive and inferential statistics to answer questions and test the hypotheses raised for the research. The analysis was done with the use of Statistical Package for Social Sciences (SPSS) version 20 and strata software using simple percentages, bar graph and correlation statistics at 0.05 level of significance. Findings revealed that: only 4.8% of the respondents take alcohol a lot. Level of alcohol intake has significant influence on pattern of both systolic and diastolic blood pressure distribution among Universities staff in South Western Nigeria. It was recommended among others that: Public health education lectures should be organized from time to time for all staff and students to sensitize them on the relationship between alcohol consumption and hypertension.

Keywords: Alcohol consumption, blood pressure distribution, Universities’ staff, South Western Nigeria.

Background of the study:
Non communicable diseases (NCDs) are responsible for the majority of premature deaths across the world (WHO, 2013). For this reason, in 2013, the WHO set an overall goal of achieving a significant reduction in overall mortality from NCDs by 2015. The main objective was a 25% relative reduction in the risk of premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases, supported by the reduction of factors as well. Among the risk factors, the goals were at least 10% relative reduction in the harmful use of alcohol, as appropriate within the national context, and a 25% relative reduction in the prevalence (or containment of hypertension), according to national circumstances. According to 2014 WHO global report, about 3.3 million deaths (5.9% of all deaths) were
Hypertension represents the most common chronic disease in the Western World with an estimated prevalence in the population of more than 25%, and a major risk factor for cardiovascular diseases including coronary artery diseases, heart failure and stroke, chronic kidney disease and death (Sarafidis, 2011). Bosu (2015) reported that there is high prevalence of hypertension among West Africa’s workforce of which a significant proportion is undiagnosed, severe or complicated. Wang (2012) reported that prevalence of hypertension in China was 18.8%. Despite that, the treatment rate among hypertensive patients was 82%, the control rate remained low in persons with hypertension (6%) because of the low awareness in general (30%) and the low control rate among treated hypertensive patients (25%). The crude prevalence of hypertension increased progressively from 12.9% in studies published in the 1980s to 34.4% in those published in 2010-2014. Blood pressure is the pressure that the blood exerts on the inner walls of the blood vessels which vary in different phases of contraction of the heart and under different conditions of health exertion. High blood pressure accounts for high mortality in the form of coronary heart disease and usually has no warning signs hence; it is referred to as ‘silent killer’. Hypertension awareness and blood pressure monitoring is a good way of preventing and controlling this deadly disease which is the most common reason for adult clinic visit other than pregnancy and has the highest use of prescription drugs. Despite the number of resources used to treat this disease, only about 50% of hypertensives have their blood pressure under control. Good health is central to human happiness and well-being. It contributes greatly to economic progress of a nation as healthy population live longer, are more productive and efficient in their places of work. The increasing prevalence of hypertension is attributed to population growth, ageing and behavioural risk factors such as unhealthy diet, harmful use of alcohol, lack of physical activity, excess weight and exposure to persistent stress. Adegboro (2016) reported that 5.8% of the study population have their blood pressure above 140/90mmhg.

In order to be able to plan for effective control and prevention of hypertension, there is need for adequate information on the relationship between alcohol consumption on blood pressure pattern among the populace. The need to generate such data is the problem of this study. The main purpose of the study is to find out the relationship between alcohol consumption and blood pressure pattern among universities’ staff in South Western Nigeria. Specifically, this research work aims to investigate:

- The pattern of alcohol consumption among Universities staff.
- The relationship between alcohol consumption and pattern of blood pressure distribution among Universities staff.

**Research Questions:**

The following questions were raised to guide the study

1. What is the pattern of alcohol consumption among Universities’ staff in South Western Nigeria?
2. What is the relationship between alcohol consumption and pattern of blood pressure
distribution among Universities’ staff in South Western Nigeria?

Research Hypotheses:
The following hypotheses were tested:
1. Level of alcohol intake will not have any significant influence on the pattern of systolic blood pressure distribution among Universities’ staff in South Western Nigeria.
2. Level of alcohol intake will not have any significant influence on the pattern of diastolic blood pressure distribution among Universities’ staff in South Western Nigeria.

Significance of the Study:
The findings of this study has provided information that will guide health workers to be able to plan for effective prevention of hypertension; it has created awareness among the University staff; it has increased the literature on the relationship between alcohol consumption and blood pressure distribution among the populace; it has revealed the relationship between level of alcohol intake and pattern of blood pressure distribution among Universities’ staff in South Western Nigeria and it will stimulate future researchers to carry our further studies on the relationship between alcohol consumption and blood pressure patterns among the populace.

Method of the Study:
The cross sectional descriptive survey design was adopted for this study. The population for the study comprised of all Universities’ staff in South Western Nigeria. The sample of 1800 was used consisting of teaching and non-teaching staff. The study adopted a multi stage random sampling technique to select the respondents. The first stage involved the random selection of ten public and ten private Universities from the south Western part of Nigeria, the second stage involved the random selection of three faculties each from the Universities earlier selected. The third stage involved the purposive selection of respondents both academic and non academic staff using population proportional to size.

In carrying out this research, two instruments were used. The first instrument sought information on the bio-data of the respondents, it is a self constructed, structured, and closed ended questionnaire designed and built around the research questions. The second instrument is digital sphygmomanometer used to monitor and record the actual blood pressure readings of the respondents. The readings were taken twice with at least thirty minutes interval in sitting positions and the average of the two readings was used for the analysis. The first instrument was validated by three experts in health education and the reliability was determined using test re test method. A coefficient of 0.85 was obtained and this was considered adequate for the study. The second instrument was calibrated and found to be good enough for the study.

Data was analyzed with descriptive and inferential statistics to answer questions and test the hypotheses raised for the research. The analysis was done with the use of Statistical Package for Social Sciences (SPSS) version 20 and strata software using simple percentages, bar graph and correlation statistics at 0.05 level of significance.

Results and Analysis:
Descriptive analysis:

Research Question 1: What is the pattern of alcohol consumption among Universities’ staff in South Western Nigeria?

Table 1: Percentage distribution of respondents by alcohol Intake

<table>
<thead>
<tr>
<th>Alcohol intake</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t take</td>
<td>1051</td>
<td>58.4</td>
<td>58.4</td>
<td>58.4</td>
</tr>
<tr>
<td>Takes Little Atimes</td>
<td>427</td>
<td>23.7</td>
<td>23.7</td>
<td>82.1</td>
</tr>
<tr>
<td>Moderate Intake</td>
<td>235</td>
<td>13.1</td>
<td>13.1</td>
<td>95.2</td>
</tr>
<tr>
<td>Take a lot</td>
<td>87</td>
<td>4.8</td>
<td>4.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>1800</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

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Table 1 and figure 1 revealed that 58.4% of the respondents don’t take alcohol, 23.7% do take little alcohol at times, 13.1% take alcohol moderately while only 4.8% of the respondents take alcohol a lot.

**Hypothesis 1:** Level of alcohol intake will not have any significant influence on the pattern of systolic blood pressure distribution among Universities’ staff in South Western Nigeria.

Table 2: Relationship between Level of alcohol intake and pattern of systolic blood pressure distribution

<table>
<thead>
<tr>
<th>Alcohol intake</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t Take</td>
<td>1</td>
<td>.146**</td>
<td>1800</td>
</tr>
<tr>
<td>Takes Little At Times</td>
<td>.146**</td>
<td>.000</td>
<td>1800</td>
</tr>
</tbody>
</table>

Table 2 revealed a correlation value of -.146 which is significant (0.000) at 0.01 level of significance. This means that the hypothesis which says that alcohol intake will not have any significant influence on the systolic Blood pressure of respondents is hereby rejected signifying that alcohol intake has significant influence on the systolic blood pressure of University staff in South Western Nigeria.

**Hypothesis 2:** Level of alcohol intake will not have any significant influence on the pattern of diastolic blood pressure distribution among Universities’ staff in South Western Nigeria.

Table 3: Relationship between Level of alcohol intake and pattern of diastolic blood pressure distribution

<table>
<thead>
<tr>
<th>Alcohol intake</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t Take</td>
<td>1</td>
<td>.138**</td>
<td>1800</td>
</tr>
<tr>
<td>Takes Little At Times</td>
<td>.138**</td>
<td>.000</td>
<td>1800</td>
</tr>
</tbody>
</table>

Table 3 revealed a correlation value of -.138 which is significant (0.000) at 0.01 level of significance. This means that the hypothesis which says that alcohol intake will not have any
significant influence on the diastolic Blood pressure of respondents is hereby rejected signifying that alcohol intake has significant influence on the diastolic blood pressure of University staff in South Western Nigeria.

Limitations of the study:
The major limitation of this study is the fact that it is a cross sectional study and the finding relied on the data generated from the respondent which is beyond the control of the researcher.

Discussion of findings:
Findings from research question one revealed that 58.4% of the respondents don’t take alcohol, 23.7% do take little alcohol at times, 13.1% take alcohol moderately while only 4.8% of the respondents take alcohol a lot. This rate of alcohol consumption is lower than the one reported by Marja, Marko,and Kaja (2014) in which 23.1% of the respondents were hazardous or harmful drinkers, and only 11.8% were abstainers. The huge difference can be explained by different methodology, and population used in the study. While the present study participants are University Staff who are more matured, the earlier one used University students who are yet to have definite lifestyles and may want to experiment with alcohol consumption.

Findings from hypotheses one and two revealed that level of alcohol intake have significant influence on both the systolic and diastolic blood pressures of respondents. This agrees with Briasoulis, Agarwal and Messerli (2012) who reported a significantly increased risk of hypertension with heavy alcohol consumption of 31 to 40 g/d and >50g/d. It equally agrees with the finding of Criqui, Walace, Mishkel, Barrett-Connor and Heiss (1981) who reported increasing blood pressure with increasing alcohol consumption

Conclusions:
From the finding of this study, it is concluded that:
- Level of alcohol intake has significant influence on pattern of systolic blood pressure distribution among Universities’ staff in South Western Nigeria.
- Level of alcohol intake has significant influence on the pattern of diastolic blood pressure distribution among Universities’ staff in South Western Nigeria.

Implication for Health Education:
- The findings of this study have the following implications for health education: Alcohol intake is a major factor that can be used to control blood pressure. While little or no alcohol reduces blood pressure, large intake increases blood pressure.
- A small population of University staff takes a lot of alcohol. This requires prompt attention as it is easier for those taking alcohol to encourage more people to join them. Therefore health talk on the negative effect of alcohol consumption on health should be intensified among staff and students.

Recommendations:
After a critical look at the relationship between alcohol consumption and blood pressure pattern among the population, the following recommendations are proposed:
- Public health education lectures should be organized from time to time for all staff and students to sensitize them on the relationship between alcohol consumption and hypertension.
- Health educators should have a routine visit to members of staff who are above 40 years for health education on lifestyle diseases and the need for regular medical checkups.
- People who are addicted to alcohol should be organized and encouraged to form social support group such as alcoholic anonymous to encourage each other to get out of the problem.
- Alcohol consumption should be restricted in and around University campuses.
Ethical Consideration:
Informed consent of each subject, ethical and official approval from the local authorities was obtained for the study accordingly and the investigation was performed in accordance with the principles outlined in the declaration of Helsinki.

Competing Interest:
The author declares that there was no competing interest.

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References: