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## **Alternative medicine use among workers in an urban setting in North-Central Nigeria**

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**Banwat M.E.** \*, Ejimah A. A., Adaji I. I. and Kajo J. I.

*Department of Community Medicine, Faculty of Medical Sciences, University of Jos.*

### **\*Correspondence Info:**

Dr. Mathilda E. Banwat

Department of Community Medicine,

Faculty of Medical Sciences

University of Jos. PMB 2086, Jos.

234-8036133983

E-mail: [mathildabanwat@yahoo.com](mailto:mathildabanwat@yahoo.com)

### **Abstract**

**Introduction:** Alternative Medicine refers to healing practices not typically used in conventional medicine and therapeutic practices which are not currently considered an integral part of conventional allopathic medical practice. The World Health Organization estimates the prevalence of use of Alternative medicines among Africans to range between 20% and 80%. The objective of this study was to assess the level of use and factors associated with use of alternative medicine among working class population in an urban setting in North-Central Nigeria.

**Methodology:** This was a cross-sectional descriptive study among 390 working-class adults in an urban setting in North-Central Nigeria who were sampled by multi-stage sampling technique. Data was collected from them using a self-administered structured questionnaire and analyzed using Epi-info statistical software.

**Results:** The mean age of the respondents was 34.38±9.03 years. The prevalence of use of Alternative Medicines was 79.3% and it had a statistical association with respondents' level of knowledge about alternative medicines ( $p = 0.0144$ ) and highest level of education attained ( $p = 0.0429$ ). The larger proportion of the studied subjects perceived alternative medicine to be more effective (47.9%) and safer (34.8%) than orthodox medicines although most of them (53.8%) would not prefer it as treatment over orthodox medication.

**Conclusion:** There was a high prevalence of use of alternative medicines among working class people studied. There is therefore a need for better research into how to integrate its use with orthodox medicine.

**Keywords:** Working class, Supplements, Alternative Medicine

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### **1.Introduction**

Complementary alternative medicine (CAM) is defined as a group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine.[1] The growth and development of public interest in the use of alternative medicine are well documented.

Nearly half the population in many developed countries regularly use some form of nutritional supplements and alternative medicine.[2][3] About 42% of adults in the USA use some form of nutritional supplements and alternative medicine; corresponding figures in other countries are: Australia – 48%, France – 49%, Canada – 70%. There is also a considerably increased use of alternative nutritional supplements and medicines in many developing countries, such as China – 40%, Belgium – 31%, Colombia – 40%, Chile – 71%, India – 65% and up to 80% in African countries.[3]

This increasing use of alternative nutritional supplements and medicine is accompanied by growth in research and associated literature with increased evidence-based approaches to justify their use. In some countries, alternative medicine is practiced both within and outside the dominant (Conventional) healthcare system.[3]

The World Health Organization (WHO) estimates that one-third of the world's population does not have regular access to essential conventional medicines.[4] This is most pronounced in some parts of Africa, Asia and Latin America where about half of the population are still faced with persistent shortages of these drugs in places where they are needed. However, in these same situations, the rich resources of traditional remedies and practitioners are available and accessible.[4] About 20-80% of the world's population uses various forms of alternative medication and medicine.[5]

This increasing interest in and use of CAM is associated with financial implications at family and national levels; In the United States, about 42% of the adult population uses alternative medicine, this translates to an annual revenue of about US\$19 Billion; about 11% of all out-of-pocket cost of healthcare.[3] In some Western European countries like Germany, the prevalence of use of nutritional supplements and alternative medicine is estimated to be about 80%,[6] with the total annual Western European revenue from nutritional supplements and alternative medicine practices amounting to about US\$5 Billion in 2003/2004 alone.[7] In China alone, the sale of nutritional supplements and alternative medicine products amounted to about US\$14 Billion in the year 2005.[7]

In Nigeria, the use of nutritional supplements and alternative medicine, mostly in the form of herbal products, is estimated to be about 31.9%.[5] The use of alternative medicine among Nigerians has been on an upward trend in the last three decades. A study in Enugu attributed this to the priority diseases of Africa such as HIV/AIDS, Malaria, Sickle-cell disease, and more recently Hypertension and Diabetes mellitus which have no “cure”. [4] These remedies are believed to either give fewer side effects than convention drugs, give a promise of “faster” or “more visible” relief of symptoms or are actually thought to “cure” these diseases that have defied Orthodox medical practice or medication. A study among hypertensive patients in Lagos University Teaching Hospital (LUTH) in 2007 showed that 39.1% of them used alternative medicine.[8] A similar study among Cancer patients attending a clinic in Enugu showed that 65.0% of them had used Alternative Medicine at some time during their current cancer illness.[9] This study set out to assess the prevalence of use of alternative supplements and medication among working class population in Jos North Local Government Area of Plateau state.

## 2. Methodology

### 2.1 Study Area

Jos North L.G.A is one of the seventeen (17) Local Government Areas in Plateau state. It is bounded on the north by Bassa L.G.A. of Plateau State and Toro L.G.A. of Bauchi State. To the east is Jos East L.G.A., on the west by Bassa L.G.A. and on the south by Jos South L.G.A. Jos North L.G.A houses the capital City of Plateau State. It enjoys a temperate climate; with temperatures as low as 12.7<sup>0</sup>C in January and as high as 30.4<sup>0</sup>C in March.[10] The population of Jos North L.G.A is estimated to be at about 429,300.[10]

It has 20 political wards consisting of diverse ethno-religious groups such as; Berom, Anarguta, Jarawa, among others. The occupants of the area are involved in various occupations such as trading, farming, and civil service and are mainly of the middle and lower social class. The literacy status of Jos is lower in females than males but is fairly higher than other less cosmopolitan LGAs.[11] The LGA plays host to various institutions including the University of Jos, twenty nine (29) Primary Health Care (PHC's) centers, Legal Institutions, Banks and Jos University Teaching Hospital (JUTH) temporal site.

### 2.2 Study Design

This was a cross-sectional descriptive study.

### 2.3 Study population

The study population consisted of working-class adults, 18years and above, working in Jos North Local Government Area of Plateau State.

### 2.4 Inclusion and Exclusion criteria

Respondents included in the study were adults (18years and above) working in Government or Private owned Organizations or traders in markets who had worked in the study area for a minimum of 3 months. They were also required to give informed verbal consent, to be enrolled into the study. People below the age stated above and those who had spent less than 3 months in the study area, or did not give consent, were excluded from the study.

### 2.5 Sample size determination

A minimum sample size was determined using the formula.

$$N = \frac{Z^2 pq}{d^2}$$

Where,

N = Minimum sample size

Z = Standard deviation at 95% confidence interval = 1.96

P = Prevalence of use of Alternative Medicine in Nigeria = 31.9% [4]

Prevalence = 31.9% = 0.319

q = Complimentary probability = 1 – p

q = 1 – 0.3 = 0.7

d = Absolute precision (Error tolerance of 5% = 0.05)

Therefore:

$$N = \frac{(1.96)^2 \times 0.319 \times 0.7}{(0.05)^2}$$

$$= 343.18$$

$$N = 344 \text{ adults}$$

The minimum sample size was therefore a total of 344 adults.

## 2.6 Sampling technique

Multistage sampling technique was used to sample the study subjects:

**Stage 1:** Jos North L.G.A was purposively selected out of the seventeen L.G.As in Plateau State because it has the highest concentration of government institutions and private business organizations, hence, the largest population of working-class adults.

**Stage 2:** A simple random sampling technique was used to select 5 out of the 20 wards in Jos North LGA by balloting using a table of Random numbers after arranging the LGAs in alphabetical order and giving the numbers 1-20.

**Stage 3:** In every ward selected, one Government institution, one private institution and one market were selected from a list of the registered organizations in the ward, gotten from the LGAs revenue office.

**Stage 4:** Using simple random sampling by balloting in each institution, a minimum of 35 subjects was sampled from each institution to be recruited into the study.

## 2.7 Instruments for data Collection

Data was collected from subjects using a self-administered structured questionnaire. The questionnaire was pre-tested on staff of Jos University Teaching Hospital; a tertiary health facility in a neighboring LGA.

## 2.8 Data analysis

Data was collected and analyzed electronically using Epi-info statistical software version 3.5.3. The Chi-square ( $\chi^2$ ) statistical test was used to test for association between variables. Knowledge was graded as poor (0-4), fair (5-8) and good (9-12) based on scores out of a maximum of 12 attainable points for giving correct answers to the 12 questions of the questionnaire which assessed subjects' knowledge about alternative medications.

## 2.9 Ethical Considerations

Written permission for the study was gotten from the Department of Community Health, University of Jos for the study. Verbal informed consent was obtained from each of the respondents before data was collected from them. Sensitization on the benefits and possibly harmful effects of use of some alternative medicine sources was shared with groups of respondents as an incentive.

## 3. Results

**Table 1: Socio-Demographic Data of Respondents**

Variable	Frequency (N=390)	Percentage (%)
<b>Age (Years)</b>		
20 – 29	117	30.0
30 – 39	158	40.5
40 – 49	63	16.2
50 – 59	52	13.3
<b>Sex</b>		
Males	243	62.3
Females	147	37.7
<b>Marital Status</b>		
Married	178	45.6
Single	146	37.4
Widow/Widower	37	9.5
Divorced/Separated	29	7.5
<b>Highest level of education</b>		
None	29	7.5
Primary	29	7.5
Secondary	86	22.0
Tertiary	246	63.0

The mean age of the respondents was  $34.38 \pm 9.03$  years. Most of the respondents were males (62.3%); married (45.6%); had attained tertiary level of education (63.1%) (Table 1).

**Table 2: Prevalence of use of alternative medications ever**

Variable	Frequency (%)	Frequency (%)
	Yes	No
<b>History of Use</b>	280(71.8)	110 (29.2)
<b>Age group</b>		
20-29	81(69.2)	36 (30.8)
30-39	133(81.2)	25 (18.8)
40-49	45(71.4)	18 (28.6)
50-59	32 (61.5)	20(39.5)
	$\chi^2 = 7.22; P = 0.0459$	
<b>Sex</b>		
<b>Male</b>	181(74.5)	62 (25.5)
Female	<b>99 (67.3)</b>	<b>48(32.7)</b>
	$\chi^2 = 0.811; P = 0.367$	

Majority of the respondents, 280 (71.8%) had ever used CAM remedies/interventions along side or instead of what was prescribed to them by a Medical personnel for an illness. Respondents aged between 30-39 years were most likely to use CAM among the studied subjects and there was a statistically significant association between age and use of CAM. However, there was no statistically significant relationship between sex and use although males were more likely (74.5%) than females (67.3%) to use CAM. (Table 2).

**Table 3: Relationship between Use of Alternative Medicine and Knowledge of Respondents**

Ever Used	Knowledge			Total
	Poor	Fair	Good	
	Freq (%)	Freq (%)	Freq (%)	
Yes	66 (65.3)	164 (73.9)	50(74.6)	280
No	35 (34.7)	58 (26.1)	17(25.4)	110
<b>Total</b>	<b>101</b>	<b>222</b>	<b>67</b>	<b>390</b>

$\chi^2 = 8.48$ ;  $df = 2$ ;  $P = 0.0144$

There was a statistically significant relationship between the knowledge of the respondents and their use of alternative medicine. Majority, 164 (73.9%) of the respondents who had fair knowledge about Nutritional Supplements and Alternative medicines used them, while 74.6% of those who had good knowledge used them. The highest proportion of respondents who did not use, 35 (34.7%) had poor knowledge (Table 3).

**Table 4: Relationship between Highest Level of Education of Respondents and Use of Alternative Medicine**

Educational Status	Use		Total
	Yes	No	
	Freq (%)	Freq (%)	
None	23 (79.3)	6 (20.7)	29
Primary	24 (82.8)	5 (17.2)	29
Secondary	68 (80.2)	18 (19.8)	86
Tertiary	165 (67.1)	81(32.9)	246
<b>Total</b>	<b>280</b>	<b>110</b>	<b>390</b>

$\chi^2 = 8.15$ ;  $df = 3$ ;  $P = 0.0429$

There is a statistically significant relationship between the highest level of education of respondents and their use of Alternative Medicines. Only 67.1% of those with tertiary education used CAM while up to 82.3% of those with primary education have ever used it. (Table 4).

**Table 5: Perception of Respondents towards Nutritional Supplements and Alternative Medicine**

Variable	Frequency N= 390	Percentage (%)
<b>Effectiveness</b>		
Yes	174	44.6
No	121	31.0
Not sure	95	24.4
<b>Safety</b>		
Very safe	57	14.6
Safe	121	31.0
Unsafe but not harmful	73	18.7
Harmful	45	11.5
Unsure	94	24.2
<b>Preference over Orthodox medication</b>		
Yes	101	25.9
No	190	48.7
Unsure	99	25.4

The larger proportion of the respondents 190 (48.7%) did not prefer Alternative Medicine to Orthodox) medicine, while 101 (25.9%) of the

respondents are unsure about their preference. A high proportion of the respondents, 174 (44.6%) were of the opinion that Alternative Medicine is effective, while 95 (24.4%) of the respondents are not sure of their effectiveness. A greater proportion of the respondents 121 (31.0%) considered Alternative Medicine to be safe, while 45 (11.5%) of the respondents thought it as being harmful.

#### 4. Discussion

Out of the 390 respondents in the study, only 67(17.2%) of the respondents had good knowledge, 222(56.9%) had a fair knowledge, and 101(25.9%) had poor knowledge. This finding agrees with a similar study in Riyadh, Saudi Arabia where about 88.8% of the participants had some knowledge of Alternative Medicine.[12] In a similar study done in Doha-Qatar, 39.1% of the respondents stated that their knowledge about Alternative medicine was poor, 54.8% described their knowledge as good, while 6.1% classified their knowledge as excellent. The variations in these studies could be because our study was in an African population whose culture and tradition is in keeping with Alternative medicine, thus about 75% of our respondents had at least a fair knowledge.

The perception of the respondents regarding Nutritional Supplements and Alternative Medicines was generally positive; 44.6% of the respondents considered Alternative medicine practice equally effective to Orthodox medical practices. This finding agrees with that of a similar study carried out in Lagos, Nigeria where 41% of the respondents found herbal medicines effective.[8] The similarity could be because the two study populations were in urban areas and therefore research subjects were more likely to be knowledgeable about the efficacy of Alternative medicines. Also, there could be a similarity in socio-cultural beliefs and practices among the two study populations; with subjects being from a wide variety of socio-cultural backgrounds; unlike in a community based study where cultural values are more homogenous.

Regarding safety of CAM, 14.6% of the respondents considered Alternative medicines to be very safe, 30.0% considered them to be just safe. This finding is slightly lower than 58% of respondents who considered Alternative medicines safe to use as reported by a study in Lagos, Nigeria.[8] The reason for this disparity could be because our study was done among the working class population who are more likely to be knowledgeable about the safety and harmful effects of Alternative medicines due to higher level of education, and awareness regarding the potential toxic effects of

Alternative medicines especially in their unrefined forms. The result of our study showed that only 25.9% of the respondents preferred Alternative Medicines to convention medicines. This could be due to the lower perception about effectiveness of Alternative medicines among the study population compared to a higher perception on the effectiveness of these therapies among other study populations. For instance, a study done in Asia showed that about 94% of the respondents considered Alternative medicines to be very effective, therefore translating to a higher preference.[13] The prevalence of the use of Nutritional Supplements and Alternative Medicines among working class people in Jos North Local Government is 71.8%, as seen from the study. The finding from this study varies significantly from a previous study done in Lagos, Nigeria which reported a general prevalence of 31.9%.[5] The differences in these studies could be attributed to the fact that our study was carried out only among working class people and therefore may not reflect the prevalence among the general population reported above, as working class people only constitutes a fraction of the total population and there might be differential use among different sub-groups. It could also be due to higher level of awareness and knowledge of Alternative medicines among the working class people in the study population who also constitute the target population for marketers of these products. This high prevalence observed in our study is however similar to than the rate of 66.8% observed in another adult population (Urban residents) in Lagos, Nigeria where herbal medicines (crude or refined) were used by the respondents, either alone or in combination with other herbal medicines.[8] Also, another study in Enugu, Nigeria showed that 84.7% of the adult population had used Nutritional Supplements and Alternative medicines.[14] This value is slightly higher than the prevalence obtained from our study, probably because our study populations were more likely to be having proper information since they are usually educated and also targeted by marketers of CAM than the general adult population. The prevalence was studied to be 85% in a study in Riyadh, Saudi Arabia [12] and 86.5% in another study in Singapore.[13] These two surveys were done in the general population which is more likely to use Alternative medicines compared to the working class population we studied; however, our prevalence was higher than values obtained in USA, with prevalence of 62%.[4] This could be because our study population has a tradition and culture more likely to support the use of Alternative medicines.

From the study conducted, there was no statistically significant relationship between the sex

of the respondents and their use of nutritional supplements and alternative medicines. About 75% of males had ever used CAM while a smaller proportion of females (67.3%) had ever used it. This agrees with a study done in Enugu Nigeria which showed that males (89.7%) were more inclined than women (60.6%) to use alternative medicines.[14] This similarity may be explained by the fact that males are less likely to go to a health facility for a symptom or sign of a disease so are more likely to try other remedies than females to relieve them. This result however contrasts to those of many other studies done which showed that females were more inclined than men to use alternative medicines and nutritional supplements. For instance, another study done in Enugu, Nigeria showed that more females (51.9%) used Alternative medicines than males (48.1%).[14] Also, a study done in the United States of America showed that women were more likely than men to use Nutritional supplement and Alternative Medicine.[13]

There was a statistically significant relationship between the respondents' level of education and their use of alternative medicines. Majority (82.8%) who used Alternative medicines had only primary level of education, and only 67.1% of the respondents who had attained tertiary education had ever used alternative medicine. This result contrasts with a study in Australia which showed that alternative medicine use was associated with increased levels of education. It however agrees with a study done in Enugu, Nigeria in which there was a tendency for the use of Alternative medicines to decrease with increasing levels of education.[15] This may be explained by the higher level of awareness and knowledge among the working class people who are more likely to be aware of the potential side effects of Alternative medicines, and may therefore be more likely to have a higher patronage of conventional medicines than Alternative medicine practices

## 5. Conclusion

There was a high level of knowledge among the respondents regarding Complementary and Alternative Medicines. The attitude of the respondents towards Nutritional Supplements and Alternative Medicines was generally positive with a high proportion of the respondents, being of the opinion that they are effective and safe; although only a small proportion of the respondents preferred Alternative medicines to conventional orthodox medicines. Majority of the respondents, (71.8%) had ever used CAM and there was a statistically significant association between use and age of

respondents. It is therefore recommended from this study that since such a high proportion of the populace use CAM, health Ministries at the local, state and national levels should find acceptable ways of incorporating their use with Orthodox medicine in our institutions.

### Limitation of the study

Getting access to some of the population posed a challenge due to the prevailing ethno-religious sensitizations from the recurrent civil unrest experienced in the study area.

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