

Socio-demographic determinants of herbal medicine use among psychotic patients attending a Nigerian tertiary health facility

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ABSTRACT

Background: Drug-herb interactions have become an important issue in clinical practice because of its growing acceptance especially in African countries.

Objective: To determine the socio-demographic associations of concurrent use of antipsychotic drugs and herbal medicines.

Methods: This descriptive cross-sectional study involved the intermittent recruitment of 217 participants on antipsychotic drugs attending the Federal Neuro-Psychiatric Hospital, Kaduna. A structured questionnaire was employed to collect socio-demographic characteristics and use of herbal medicines via face-face interview with patients from November 2016 to January 2017.

Results: A total of 97 respondents (44.7 %) used herbal medicines and antipsychotic drugs concurrently. Respondents between the ages of 16 and 25 years, those who are married or ever married, Hausas, Fulanis and artisans were most likely to concurrently use herbal medicines with their antipsychotic drugs.

Conclusion: High prevalence of use of herbal medicines among the patients was found and the major socio-demographic determinants for concurrent herbal-antipsychotic medicine use were found to be age, marital status, tribe and occupation.

Keywords: Antipsychotic, Dug-herb interaction, Herbal medicine, Socio-demographic

Déterminants sociodémographiques de l'utilisation de la phytothérapie chez les patients psychotiques fréquentant un établissement de santé tertiaire nigérian

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RESUME

Contexte : Les interactions médicament-herbe sont devenues un problème important dans la pratique clinique en raison de son acceptation croissante, en particulier dans les pays africains.

Objectif : déterminer les associations sociodémographiques de l'utilisation concomitante d'antipsychotiques et de plantes médicinales.

Méthodes : Cette étude transversale descriptive a impliqué le recrutement intermittent de 217 participants sous antipsychotiques à l'hôpital fédéral neuropsychiatrique de Kaduna. Un questionnaire structuré a été utilisé pour collecter les caractéristiques sociodémographiques et l'utilisation de médicaments à base de plantes via un entretien face à face avec des patients de novembre 2016 à janvier 2017.

Résultats : Au total, 97 répondants (44,7%) ont utilisé simultanément des médicaments à base de plantes et des antipsychotiques. Les répondants âgés de 16 à 25 ans, mariés ou jamais mariés, les Haoussa, les Foulani et les artisans étaient les plus susceptibles d'utiliser simultanément des médicaments à base de plantes avec leurs antipsychotiques.

Conclusion : une prévalence élevée de la consommation de médicaments à base de plantes chez les patients a été constatée et les principaux déterminants sociodémographiques de l'utilisation simultanée de médicaments à base d'antipsychotiques étaient l'âge, l'état matrimonial, la tribu et l'occupation.

Mots-clés : Antipsychotique, Interaction médicament-herbe, phytothérapie, sociodémographique

INTRODUCTION

Herbal medicine is the first-line treatment in many patients for treating chronic medical conditions in Africa. This phenomenon can be attributed to accessibility, affordability, availability and acceptability of traditional medicines in developing countries.¹ Recent trends in research into African plants' uses show that traditional medicine is commonly used to treat neurological disorders in the West African region. Furthermore, It is interesting to note that four (Ginkgo, St. John's Wort, Valerian, and Kava) of the top ten herbs purchased in the United States have psychotropic activity.²

Antipsychotic agents are the cornerstone of acute and maintenance treatment of schizophrenia and are effective in the treatment of hallucinations, delusions, and thought disorders, regardless of aetiology. Most patients with psychosis require long-term maintenance treatment of antipsychotic therapy. However, patients often experience relapse and various adverse side effects caused by antipsychotic treatment.³ Furthermore, there has been a growing interest in the last decades in the use of alternative and complementary methods for the treatment of psychiatric disorders.⁴ In order to improve the therapeutic efficacy and reduce adverse side effects related to antipsychotic therapy, herbal medicine and other alternative therapies have been increasingly introduced into the treatment of schizophrenia.⁵ There is reason to believe that the use of complementary and alternative therapies is more common among people with psychiatric problems than the rest of the population because fatigue, insomnia, chronic pain, anxiety, and depression are among the most commonly reported reasons for the use of complementary and alternative therapies in community surveys.⁶

Herbal medicines contain one or more biologically active components, each with a unique side effect profile. When used in a knowledgeable fashion by individuals trained in their appropriate use and obtained from reliable producers, herbs are relatively safe.⁷ However, there have been several reports of clinically significant interactions between herbs and antipsychotic medications.^{8,9}

Social factors such as gender, age, race, ethnicity, education and income can be important determinants of health outcomes.¹⁰ Furthermore, there are evidences that members of racial and ethnic minority groups underutilize mental health services compared to non-Hispanic whites in America. Studies like this indicate that social factors affect health choices and outcomes in patients on antipsychotic therapy.^{11,12}

Therefore, it is imperative to examine socio-demographic patterns of herb use among patients using antipsychotic medicines in order to be able to identify the social determinants responsible and deploy appropriate intervention programmes and personnel to curb its proliferation.

METHODS

Study site

The research study was carried out at the Federal Neuro-Psychiatric Hospital (FNPH), a tertiary health facility located in Barnawa, Kaduna State (Coordinates: 10°31'23"N 7°26'25"E), North-west, Nigeria. It provides specialized mental health services, conducts mental health related research and trains mental healthcare professionals. It is a 200 bed inpatient health facility and is the major Neuro-psychiatric health facility in Northwestern Nigeria.

Study design

This study is a descriptive cross-sectional study using a structured questionnaire. It was approved by the Health Research Ethics Committee of the Federal Neuro-Psychiatric Hospital, Kaduna on the 18th of October 2016. The target population was outpatients that use antipsychotic drugs and a written informed consent was obtained from the volunteers.

Sampling

The sample size was calculated using the appropriate formula for studying proportions with population > 10,000¹³ plus 10% attrition; where $z = 1.96$ (95 % confidence level), $p = 0.021$, $q = 1 - p$ and the degree of accuracy (d) set at 0.02. Two hundred and seventeen adult male and female were recruited intermittently but consecutively for a period of 3 weeks. Volunteers were either newly or previously diagnosed with psychosis.

Study instruments

A structured pretested specifically designed questionnaire was administered and data on socio-demographic characteristics were collected. Data was collected on age, sex, tribe, marital status, educational status and income. Participants were also asked if they use herbal medicines concurrently with their antipsychotic drugs and a 'Yes' or 'No' answer was required.

Study procedure

The study was carried out by the principal researcher by conducting a face-to-face interview with all

participants. A translator was present to ensure complete understanding of the questions.

Statistical analysis

The data collected was analyzed using the statistical package for social sciences (SPSS) version 21.0. The qualitative variables were expressed as percentages and the chi square test was used to calculate associations (p value < 0.05). Binary logistic regression model was used for further multivariate analyses to identify independent factors associated with use of herbal medicine from the same variable tested in the bivariate analysis (chi square test).

RESULTS

A 100% effective response was gotten from the participants recruited into the study. There were 83 males (38.2%) and 134 females (61.8%) and the mean was 39.1 ± 0.9 years (with a range of 16 to 83 years). Table 1 shows other socio-demographic parameters of participants. Ninety-seven (44.7 %) respondents use herbal medicines concurrently with their antipsychotic medicines (Fig. 2). Table 1 shows the socio-demographic determinants of concurrent use of herbal medicines with antipsychotic drugs. Age ($\chi^2 = 11.64$, $df = 3$, $p = 0.009$), marital status ($\chi^2 = 18.90$, $df = 3$, $p = 0.000$), tribe

($\chi^2 = 24.34$, $df = 9$, $p = 0.004$), and occupation ($\chi^2 = 16.44$, $df = 8$, $p = 0.021$) were the socio-demographic variables that are significantly associated with use of herbal medicines (Fig. 3). On further analysis using binary logistic regression model, respondents belonging to age group 46-65 years (OR = 0.39, 95 % CI = 0.16-0.93, $p = 0.033$) and > 65 years (OR = 0.11, 95 % CI = 0.01-0.99, $p = 0.049$) are less likely to use herbal medicines. Other categories of respondents less likely to use herbal medicines are the Jabba tribe (OR = 0.32, 95 % CI = 0.12-0.89, $p = 0.033$), Bajju tribe (OR = 0.19, 95 % CI = 0.04-0.95, $p = 0.043$), Kattaf tribe (OR = 0.19, 95 % CI = 0.04-0.95, $p = 0.043$) and teachers (OR = 0.29, 95 % CI = 0.09-0.99, $p = 0.044$).

However, respondents who are married or have been married in the past especially those that are divorced (OR = 10.13, 95 % CI = 2.03-50.44, $p = 0.005$) and artisans (OR = 5.15, 95 % CI = 1.05-25.31, $p = 0.044$) are the most likely to use herbal medicines concurrently with their antipsychotic drugs.

Other categories of respondents with significant percentage of its members using herbal medicines are 16- 25 years age group (52.6 %), Hausa tribe (60.8 %), Fulani tribe (66.7 %), Kadara tribe (60 %) and traders (55.3 %).

Table 1: Socio-demographic profile of participants

Variable	Frequency (n= 217)	Percentage (%)
Sex		
Male	83	38.2
Female	134	61.8
Total	217	100.0
Age group		
16 - 25	38	17.5
26 - 45	117	53.9
46 - 65	53	24.4
>65	9	4.1
Total	217	100.0
Marital status		
Single	78	35.9
Married	114	52.5
Widowed	14	6.5
Divorced	11	5.1
Total	217	100.0
Tribe		
Hausa	79	36.4
Jabba	21	9.7
Yoruba	17	7.8
Fulani	12	5.5
Gbagyi	7	3.2
Bajju	9	4.1
Kataf	9	4.1
Ibo	5	2.3
Kadara	5	2.3
Others (32 tribes)	53	24.4

Table 2: Bivariate and multivariate associations of socio-demographic variables and use of herbal medicine among the participants

Variable	Use of herbal medicines			Bivariate	Multivariate		
	Yes (%)	No (%)	Total (%)	χ^2/p -value	OR	95 % CI	<i>p</i> -value
Sex				0.10/ 0.757			
Male	36 (43.4)	47 (56.6)	83 (100)		1.00		
Female	61 (45.5)	73 (54.5)	134 (100)		1.09	0.63-1.89	0.757
Age group				11.64/ 0.009*			
16-25	20 (52.6)	18 (47.4)	38 (100)		1.00		
26-45	60 (51.3)	57 (48.7)	117 (100)		0.95	0.46-1.97	0.885
46-65	16 (30.2)	37 (69.8)	53 (100)		0.39	0.16-0.93	0.033*
>65	1 (11.1)	8 (88.9)	9 (100)		0.11	0.01-0.99	0.049*
Marital status				18.90/ 0.000*			
Single	24 (30.7)	54 (69.3)	78 (100)		1.00		
Married	61 (53.5)	53 (46.5)	114 (100)		2.59	1.41-4.75	0.002*
Widowed	3 (21.4)	11 (78.6)	14 (100)		0.61	0.16-2.40	0.483
Divorced	9 (81.8)	2 (18.2)	11 (100)		10.13	2.03-50.44	0.005*
Tribe				24.34/ 0.004*			
Hausa	48 (60.8)	31 (39.2)	79 (100)		1.00		
Jabba	7 (33.3)	14 (66.7)	21 (100)		0.32	0.12-0.89	0.029*
Yoruba	6 (35.3)	11 (64.7)	17 (100)		0.35	0.12-1.05	0.061
Fulani	8 (66.7)	4 (33.3)	12 (100)		1.29	0.36-4.66	0.696
Gbagyi	4 (57.1)	3 (42.9)	7 (100)		0.86	0.18-4.11	0.851
Bajju	2 (22.2)	7 (77.8)	9 (100)		0.19	0.04-0.95	0.043*
Kataf	2 (22.2)	7 (77.8)	9 (100)		0.19	0.04-0.95	0.043*
Ibo	0 (0)	5 (100)	5 (100)		0.00	0.00	0.998
Kadara	3 (60.0)	2 (40.0)	5 (100)		0.97	0.15-6.13	0.973
Others (32)	17 (32.1)	36 (67.9)	53 (100)		0.31	0.15-0.64	0.002*

				3.20/ 0.361		
Educational status						
None	19 (57.6)	14 (42.4)	33 (100)	1.00		
Primary	19 (44.2)	24 (55.8)	43 (100)	0.58	0.23-1.46	0.249
Secondary	31 (44.9)	38 (55.1)	69 (100)	0.60	0.26-1.39	0.234
Tertiary	28 (38.9)	44 (61.1)	72 (100)	0.47	0.20-1.08	0.076
Occupation				16.44/ 0.021*		
Unemployed	33 (49.3)	34 (50.7)	67 (100)	1.00		
Trading	21 (55.3)	17 (44.7)	38 (100)	1.27	0.57-2.83	0.554
Student	9 (31.3)	20 (68.7)	29 (100)	0.46	0.19-1.17	0.102
Farming	9 (37.5)	15 (62.5)	24 (100)	0.62	0.24-1.61	0.324
Civil servant	9 (37.5)	15 (62.5)	24 (100)	0.62	0.24-1.61	0.324
Teaching	4 (22.2)	14 (77.8)	18 (100)	0.29	0.09-0.99	0.048*
Artisan	10 (83.3)	2 (16.7)	12 (100)	5.15	1.05-25.31	0.044*
Professional	2 (40)	3 (60)	5 (100)	0.69	0.11-4.38	0.691
Level of Income				2.74/ 0.254		
Low	78 (47.6)	86 (52.4)	164 (100)	1.00		
Middle	14 (33.3)	28 (66.7)	42 (100)	0.55	0.27-1.12	0.101
High	5 (45.5)	6 (54.5)	11 (100)	0.92	0.27-3.13	0.892

*statistically significant at $p < 0.05$

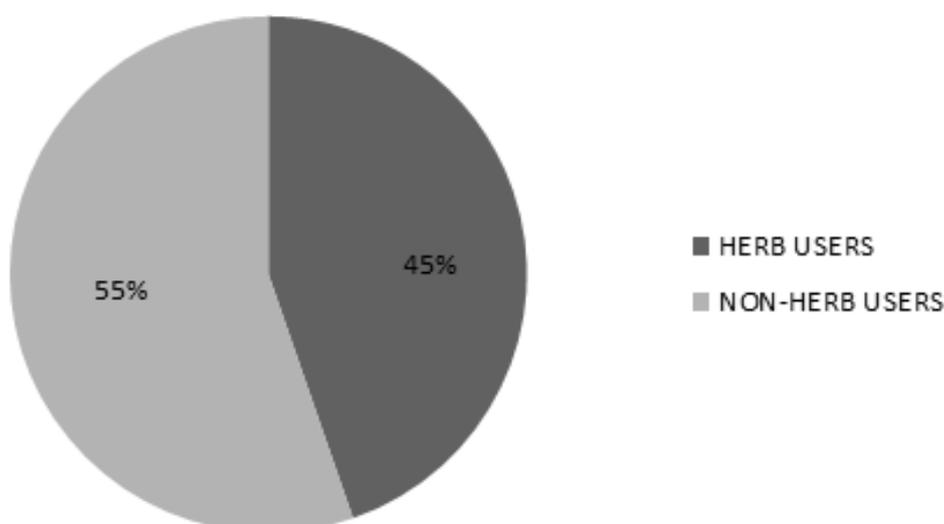


Fig. 1: Concurrent use of herbal medicines and antipsychotic drugs

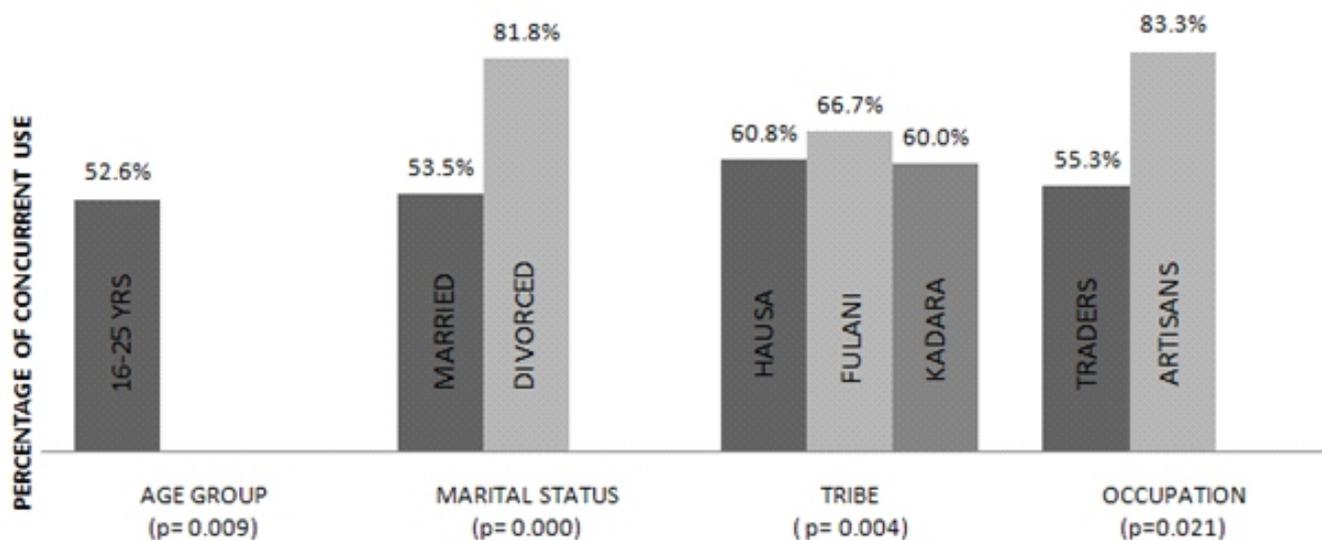


Fig. 2: Significant socio-demographic determinants of concurrent use of herbal medicine and antipsychotic drugs (statistically significant at $p < 0.05$)

DISCUSSION

The socio-demographic variables that were found to be statistically significant are age, marital status, tribe and occupation. Respondents between the age of 16-25 are more likely to use herbal medicines while those above 65 years are the least likely to use herbal medicines. This could be because the elderly tend to obey the health worker's advice more than the youth as regards avoiding concurrent administration of herbal medicines and antipsychotic drugs. This is consistent with what has been reported in a previous study on the use of herbs in pregnant women¹⁴. It was reported that the prevalence of use of herbs decreases with increasing age of participants with those forty years and above being the least likely to use and those less than twenty years most likely to use. It was suggested that the youths can be influenced by different opinions about herbs which are predominant in their environment and eventually take up the use of herbs even against their doctor's advice.

Respondents that are married or have been married were found to be more likely to use herbal medicines concurrently with antipsychotic drugs when compared with their single counterparts. Furthermore, divorced respondents are more likely to use herbal medicines. This is consistent with previous studies carried out on the use of herbal medicines in patients with mood disorders and hypertension.^{6,15}

The Hausa and Fulani tribes are the most likely to use herbal medicines while the Ibos are the least likely. This can be attributed to the location where this study was carried out. Northern Nigeria is where majority of the Hausa and Fulani are located while the population of

the Ibos is minimal as their native home is in Southern Nigeria. Therefore, the Ibos in this study do not readily have at their disposal the herbal medicines that are indigenous to their tribe and may be skeptical about using those available in the North. The prevalence of use of herbal medicines is also high among the Hausa and Fulani because Islam is the predominant religion among these two tribes and Islamic 'Prophetic' medicine is widely accepted and gaining more popularity among Muslims. Most of the Hausa and Fulani herbal medicine users use Islamic 'Prophetic' medicine and do not even consider it 'herbal medicine'. An example of this is the use of the black seeds of *nigella sativa* for treatment of ailments as it has been reported from the prophet Muhammad to be a cure for all diseases.

Educational status does not have any significant correlation with use of herbal medicine. Gone are the days when it was believed that educated people do not use herbal medicines. This study shows that use of herbal medicines cuts across all educational status. Previous studies^{6,16,17,18} have also reported that education does not influence the acceptance of herbal medicines and that educated individuals are more likely to use alternative medicine.

The unemployed, business people/ petty traders and particularly artisans are more likely to use herbal medicines while teachers are the least likely to use. As we have discussed earlier, educational status cannot be used to explain this trend. Rather, the beliefs of the people who these herbal users come in contact with in their daily lives can influence their choice of use herbal medicine to a large extent. They are encouraged by

friends, families, neighbours to try out herbal medicines assuring them of higher efficacy and sometimes they finance the purchase of the herbal medicines for these patients. This is consistent with a study carried out in pregnant women and it was found out that the respondents' family and friends encourage them to use herbal medicines and most times source for the herbs for them.¹⁴

The concurrent use of herbal medicines with antipsychotic drugs could pose a great problem considering the fact that most herbs affect the pharmacokinetics and pharmacodynamics of drugs including antipsychotics. This problem coupled with the growing acceptance and use of herbal medicines has made it necessary to intensify patient counseling as regards concurrent use of herbal medicines with antipsychotics and to find a way of incorporating herbal therapy into conventional therapy as it is being practiced in China. The limitation of this study was the absence of determining the correlation between concurrent use of herbal medicines with antipsychotic drugs and clinical outcomes. It is recommended that a clinical study be carried out to evaluate the positive or negative clinical outcomes in herbal medicine users on antipsychotic therapy.

CONCLUSION

Socio-demographic determinants have been found to significantly affect the concurrent use of herbal medicines with antipsychotic medicines. Age, marital status, tribe and occupation are associated significantly with herbal medicine use while there was no association with gender, educational status and income.

ACKNOWLEDGEMENT

The authors will like to acknowledge the management and staff of the Federal Neuro-Psychiatric Hospital, Kaduna, Tawakaltu Murtala (Translator) Dr. Taofik Oloyede (UIH, Ilorin, Kwara, Nigeria) and Dr. Abiola Oyeleke (UDUTH, Sokoto, Nigeria).

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