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Self-Medication with Over-the-Counter and Prescription Drugs and Illness Behavior in Nigerian Artisans

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Abstract

Background: Self-medication (SM), the use of drugs by individuals to treat self-recognized illnesses or symptoms is one of the major health problems.
Objectives: The study assessed the patterns and links between SM and illness behavior in Nigerian artisans.
Patients and Methods: In this cross-sectional survey, a multistage sampling procedure was employed to select 186 participants (age range = 15 - 61 years; mean = 31.5) in the Ede community of Osun State, Southwestern Nigeria. The artisans (beauticians, autoworkers, and house building construction workers) responded to the self-medication test (SMT) and Illness Behavior Questionnaire (IBQ). Frequency counts were employed to analyze the participants' demographic characteristics, while linear regression analysis was used to answer the research question.
Results: The findings from this study revealed a 47.8% prevalence of SM, ranging from 14.2% of antibiotics SM to 51.1% of alternative medicine SM. SM was observed to independently and significantly predict disease conviction (R^2 = 0.030, P = 0.018), psychological/somatic perception (R^2 = 0.034, P = 0.012), general illness reaction (R^2 = 0.064, P = 0.000), and general illness behavior (R^2 = 0.028, P = 0.023) of the participants.
Conclusions: Our findings revealed the need for an increase in public enlightenment, awareness, and sensitization among artisans on ills of SM. Also, we recommend psycho-education among this vulnerable group.

Keywords: Self-Medication, Nonprescription Drugs, Illness Behavior, Artisans, Nigeria

1. Background

Self-medication (SM) has been defined as the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms (1). The International Pharmaceutical Federation also defines SM as the use of non-prescription medicines by people on their initiative (2). SM is not only limited to prescription and over-the-counter (OTC) orthodox drugs but also local/traditional herbal drugs (3, 4). According to the United States Food and Drug Administration (FDA) (5), over-the-counter drugs are substances intended for the diagnosis, cure, mitigation, treatment, or prevention of disease. They are regarded as safe and effective for use by the general public and can be assessed and used without a doctor's prescription.

There are undeniable negative impacts of SM, including the risk of misdiagnosis, overdose, incorrect duration of use, prolonged illnesses, extended hospital stays, adverse drug reactions, need for more expensive medications, and even death (1, 3, 6). SM may result in drug abuse, waste of resources, increased risk of unwanted effects, and prolonged suffering caused by delays in treating serious medical conditions (7, 8). Also, SM may mask severe ill-health condition symptoms, cause an increase in polypharmacy, and interact with other regularly used medications (7-9). Many people self-medicate with OTC and prescription medications (5), resulting from the unguided perception of illness and incessant drug advertisements (10).

SM is seen as a considerable global concern (1, 11) that is fast attracting significant attention in health care policies in countries worldwide (7, 12, 13). Studies show that about 60 - 80% of health-related issues, especially in developing countries, are treated using SM (14-16). Among the factors promoting the increase in SM with OTC and prescription drugs are lifestyle, socioeconomic situations, greater availability of medicinal products, access to drugs, and in-

creased potential to manage certain illnesses through self-care (17). Similarly, the wrong perception of the illness severity, belief in self-care, non-availability of physicians, and previous pleasant experiences with SM are among the identified causes of SM in most societies (18-20). Research findings report a high prevalence of SM with OTC and prescription drugs among the Nigerian population (21-25), often resulting in psychological distresses (26) such as abnormal illness behavior.

Illness behavior is a description of how an individual experiences, perceives, evaluates, and responds to his/her health (27). According to Pilowsky, factors that determine illness behavior could be subjective, social, and cultural, and could vary from one individual to another, and sometimes vary within the same individual depending on the disease's nature (28). Literature shows that some clinical conditions used to capture abnormal illness behavior are based on criteria such as (1) somatic or psychological focus, (2) whether an illness is affirmed or denied, (3) predominantly conscious rather than unconscious motivation (29-31).

An individual's reaction to illness can be better understood by concepts of illness perception and illness denial. Illness perception is centered on the self-regulatory model used to describe the cognitive and affective processes through which individuals respond to a perceived health threat (32). On the other hand, illness denial is characterized by activities that range from the conscious disguise of symptoms to lack of insight (28). Research (33) shows that illness denial can be either adaptive, when a denial of illness helps in preventing the patient from overwhelming psychological distress (34, 35), or maladaptive, resulting in a delay in undergoing medical examinations, non-adherence to therapeutic regimens, or the adoption of unhealthy behaviors (36).

One fundamental implication of illness behavior is that it influences SM, impacts healthcare costs, and determines a physician's workload (37). It also determines individuals who seem to overuse healthcare facilities and those who resort to SM. Both options have significant consequences on the individual's health and public welfare (36, 38, 39).

SM could result from a complex interaction between perceived self-health risk and difficulties in health-seeking behavior (40). The perception of illness is often influenced by different belief systems in societies (41, 42) and may contain anti-health social habits (43). Beliefs about appropriate health behaviors, most of which are premised on cultural factors such as the type and level of education and occupation, influence health and illness behavior (42, 44), reduce access to health information and care, impair health quality, and negatively affect psychological health (45). The stress, strain, and nature of crafts and the poor work environments could take a toll on the Nigerian artisans' health and subsequently be a risk factor of SM with OTC and prescription drugs (46). As a guide to this study, it is hypothesized that SM with OTC and prescription drugs would significantly predict the severities of the factors of Illness behavior among the participants.

2. Patients and Methods

2.1. Study Design and Setting

A cross-sectional survey design was employed in the study. The study was carried out in Ede Metropolis, located in Osun State, Southwestern Nigeria.

2.2. Study Population

The study population was made up of artisans working in Ede metropolis Osun State, Southwestern Nigeria. The selected crafts for this study are beauticians (hairdressers, barbers, fashion designers, and pedicurists), autoworkers, and house building construction workers (bricklayers and carpenters).

2.3. Sample Size Calculation

The total population of artisans in the Ede metropolis of Osun state is estimated as less than 10,000 people. For the present study, the sample size determination formula for a population less than 10,000 by Araoye (47) was used to obtain the final sample estimate (n). The formula for populations less than 10,000 is given as follows:

$$n = \frac{\left(Z_{\frac{\alpha}{2}}\right)^2 \times P\ (1-P)}{d^2}$$

Where n = sample size, P = proportion in the target population estimated to have a particular characteristic, Z = standard normal deviate (usually set at 1.96, which corresponds to the 95% confidence level), d = degree of accuracy desired usually set at 0.05, 0.03, or occasionally at 0.02. In this study, the calculated sample size was 170 artisans.

A total of 186 participants were purposively selected for this study. To ensure proper coverage, the craft workers were categorized into three groups: (1) 92 beauticians (hairdressers, barbers, fashion designers, and pedicurists); (2) 78 autoworkers; and (3) 16 house building construction (bricklayers and carpenters) (see Figure 1).

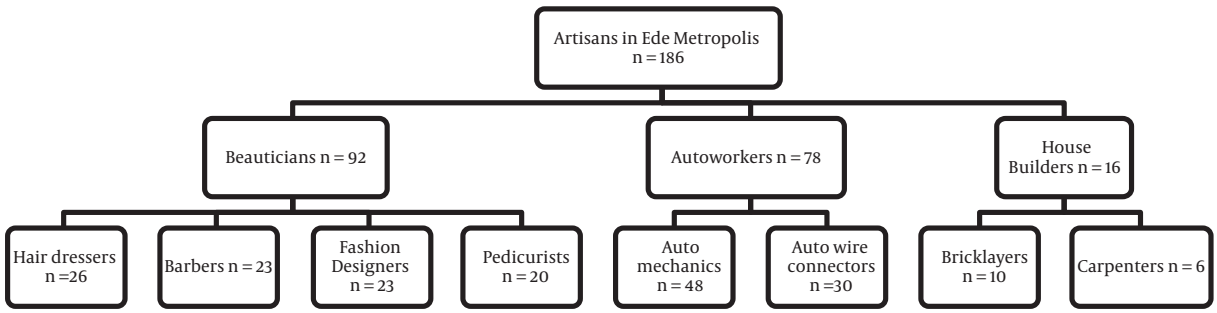

Figure 1. Sampling flowchart

2.4. Eligibility Criteria

The inclusion for participation in this study was based on three criteria. First, participants must be the business owner with the required knowledge and actively involved in the day-to-day delivery of services. This criterion eliminated apprentices and trainee artisans. Second, participants must have basic primary education and read and write in the English language. This criterion is required because the participants were to respond to the questionnaires, which were written in the English language. Third, there were the availability and willingness to participate in the study. Data were collected for five weeks spanning between January 19 and February 22, 2020. Hence, only artisans whom researchers met in their places of work, within the period of data collection, and were willing to participate, were selected.

Ethical approval was obtained for this study. Also, participants' informed consent was obtained during the data collection exercise. The purpose of the research was duly communicated to the participants who remained anonymous. Participation was voluntary, and participants reserved the right to withdraw from the study at any point they felt like. No form of incentives was offered to the study participants.

2.5. Study Instruments

Two instruments were used in this study. The Illness Behavior Questionnaire (IBQ) by Pilowsky and Spence (48) is a 62-item inventory designed to measure attitude, belief, and behaviors like feelings, reactions, and responses to the self and others when ill. It has eight response categories, which measure disease conviction, irritability, general hypochondriasis, psychological/somatic perception, affective disturbance, affective inhibition, denial of the problem, and general illness reaction. The IBQ has a reliability coefficient that ranges from 0.67 to 0.85. It also has an acceptable norm for Nigerian samples ranging from 0.27 to 0.39 (49). The IBQ has been validated for the Nigerian population (50), revealing a Cronbach's alpha reliability of 0.62.

The self-medication test (SMT) is a self-reporting psychological test developed by the authors. The scale measures the usage of seven classes of commonly used OTC and prescription drugs, including dietary supplements (folic acid, omega H3, vitamin B complex), pain relievers (acetaminophen paracetamol/panadol extra, tramadol), indomethacin (indocid), aspirin, anti-diarrhea, sleeping pills, slimming tablets and teas, antibiotics, and antitussive (codeine cough syrup). Respondents were to indicate the frequency of usage of these drugs on a six-point Likert scale ranging from never (0) to daily (5). The higher the score obtained, the higher the frequency of usage. The scale has a Cronbach's alpha coefficient of .87. The average time required for participants to complete the questionnaire was five minutes.

2.6. Data Collection

Data were collected over five weeks, spanning between January 19 and February 22, 2020. A total of 200 questionnaires were distributed to the participants by the researchers. After sorting the returned questionnaires, 186 were found well completed by the participants, showing a 93% response rate. They were used for data analysis.

2.7. Data Analysis

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS 23). Descriptive statistic (frequency count and percentages) was used to organize, summarize, and describe respondents' demographic characteristics. In contrast, inferential statistic (linear regression analyses) was employed to test the hypotheses at the 0.05 level of significance.

3. Results

3.1. Response Rate

Of the 200 questionnaires distributed to the participants, 186 were properly completed and returned, and used for the study. Hence, a 93% response rate was achieved.

3.2. Demographic Characteristics of Participants

The social demographic report in this study revealed that the mean age of the craft workers was 31.5 years, indicating that most of the craft workers were young adults. Distribution by sex showed that males made up 65.6%, while females were 34.4% of the participants. Distribution by religion showed that Muslims made up 53.7%, Christians 44.6%, and traditional religion 1.6% of the participants. Also, 25.8% of the sample had primary education as their highest education level, 61.3% had secondary education, while 12.9% had Ordinary National Diploma certificate. Furthermore, 39.7% were single, while 60.2% were married. The average year of work experience in their trade was 10.5 years.

Table 1 summarizes the prevalence of different drugs commonly used among the participants ranging from 14% for antibiotics to 51% for local herbs (alternative medicine). The overall prevalence of self-medication among the respondents was 47.8%.

Table 1. Summarizes the Prevalence of Different Drugs Commonly Used Among the Participants

Drugs	Percentage
Antibiotics	14.2
Antitussive	
Codeine cough syrup	15.7
Dietary supplements	
Slimming pills and teas	17.7
Calcium	21.5
Vitamins	22.6
Folic acid	22.7
Analgesics	
Tramadol	26.5
Paracetamol/panadol	22.2
Sedatives	
Sleep enhancement pills	45.7
Anti-diarrhea	46.8
Alternative medicine	
Herbs (alternative medicine)	51.1
Composite self-medication score	47.8

As summarized in Table 2, the patterns and prevalence of illness behavior among the artisans ranged from 47.8% of psychological/somatic perception to 17.7% of affective inhibition. The reported overall prevalence of general illness behavior among the artisans was 41.1%.

Table 2. Patterns and Prevalence of Dimensions of Illness Behavior

Factors of Illness Behavior	Percentage
General illness reaction	44.6
Denial of problems	18.8
Affective inhibition	16.7
Affective disturbance	43.5
Psychological/somatic perception	47.8
General hypochondria	40.9
Irritability	26.9
Disease conviction	31.9
General illness behavior	41.1

3.3. Test of Hypothesis

We hypothesized that SM with OTC and prescription drugs would significantly predict the severities of the factors of illness behavior among the participants. Linear regression was employed to test the degree to which SM with OTC and prescription drugs independently and significantly predicted the severities of the factors of illness behavior. As summarized in Table 3, SM with OTC and prescription drugs was found to independently and strongly predict disease conviction (β = 0.174, P = 0.018), reporting an R^2 of 0.030; psychological/somatic perception (β = -0.184, P = 0.012) with an R^2 of 0.034, general illness reaction (β = -0.253, P = 0.000) with an R^2 of 0.064, and general illness behavior (β = 0.167, P = 0.023) with an R^2 of 0.028. However, SM with OTC and prescription drugs was not found to significantly predict irritability, general hypochondriasis, affective disturbance, affective inhibition, and denial of the problem among the participants. This finding further revealed that 3.0, 3.4, 6.4, and 2.8% of the variance in the severities of disease conviction, psychological/somatic perception, general illness reaction, and general illness behavior, respectively, was explained by SM with OTC and prescription drugs among the participants.

4. Discussion

Our study observed associations between SM with OTC and prescription drugs and illness behavior among artisans. In this study, we observed a high prevalence of SM with OTC and prescription drugs. This supports previous research findings, which reported a high prevalence

Table 3. Regression Analysis of the Degree of Influence of Self-Medication with Over-the-Counter and Prescription Drugs on Illness Behavior Factors

Factors of Illness Behavior	B	β	T	Significance Level	R^2	F [a]	P [a]
Disease conviction	0.034	0.174	2.384	0.018	0.030	5.683	0.018
Irritability	0.014	0.086	1.166	0.245	0.007	1.360	0.245
General hypochondriasis	-0.008	-0.034	-0.462	0.645	0.001	0.214	0.645
Psychological/somatic perception	-0.025	-0.184	-2.542	0.012	0.034	6.461	0.012
Affective disturbance	-0.006	-0.036	-0.485	0.628	0.001	0.235	0.628
Affective inhibition	-0.010	-0.073	-0.988	0.325	0.005	0.976	0.325
Denial of problem	-0.006	-0.041	-0.555	0.580	0.002	0.308	0.580
General illness reaction	-0.106	-0.253	-3.546	0.000	0.064	12.574	0.000
General illness behavior	-0.110	-0.167	-2.293	0.023	0.028	5.259	0.023

[a] N = 186.

of irresponsible, inappropriate, and potentially dangerous self-prescriptions (3, 40, 51). One of the reasons for the high prevalence of SM with OTC and prescription drugs, according to Ayanwale, Okafor, and Odukoya (23), is the easy accessibility, cost-effectiveness, time-saving, or perceptions that the problem as being too trivial to necessitate making an appointment with a healthcare professional, and in other cases people having few or no other options. This research finding is consistent with the high prevalence of SM found in earlier Nigerian studies (52-55) and other countries (15, 56-59).

The SM with OTC and prescription drugs strongly predicted disease conviction, psychological/somatic perception, general illness reaction, and general illness behavior of the craft workers in Nigeria. This result supports findings in previous studies, which revealed that previous experience of the illness (40, 60), the perception of illness and incessant advertising of drugs (10), knowledge of the treatment of the disease (60), and the general reaction to the illness, taking cognizance of the severity (60, 61), are determinants of SM. The study also showed that personal insecurities about one's health status (62) were correlated positively with SM. People's perception of their illness, convictions about the diseases based on previous knowledge gotten either through advertisement, patent medicine sellers or friends (10, 63, 64), general reactions to diagnosis and fear of wrong diagnosis (55, 63), and preference of being ignorant of the nature of their illness, as well as the experience of severity and duration of their illness (55), are some factors that aid SM.

This study was carried out using a sample of artisans in Ede (a town comprising two local government areas Ede North and Ede South) in Osun state located in one of the six geopolitical regions of Nigeria, hence placing a caution on the generalizability of the findings to the Nigerian population. Also, the use of over-the-counter and prescription drugs analyzed in this study was based on self-reported data. Finally, the coverage of OTC and prescription drugs in this study are limited to the ones stated.

4.1. Conclusions and Recommendation

Based on this study's results, it is established that there is a high prevalence of SM with over-the-counter and prescription drugs and maladaptive ways of responding to one's state of health (inappropriate illness behavior) among Nigerian artisans. Also, the report established that SM strongly predicts disease conviction, psychological/somatic perception, general illness reaction, and general illness behavior among the participants.

To minimize this risky public health behavior, psychoeducational public enlightenment programs focused on exposing the harmful effects of SM should be aggressively embarked on by governmental and non-governmental organizations. Further to this, the government at various should be more responsive to the basic health needs of the citizens through ensuring that the primary health care facilities are fully operational.

4.2. Study Limitations

The implications of the finding in this study are limited to the influence of inappropriate illness behavior on the over-the-counter and prescription medications reported in this study.

Footnotes

Authors' Contribution: Study concept and design, Ebenezer Olutope Akinnawo, and Deborah Foluke Onisile; Analysis and interpretation of data, Bede Chinonye Akpunne, and Ebenezer Olutope Akinnawo; Drafting of the manuscript, Oluseyi Abiodun Alakija; Critical revision of the manuscript for important intellectual content,

Ebenezer Olutope Akinnawo, Bede Chinonye Akpunne and Deborah Foluke Onisile; Statistical analysis, Bede Chinonye Akpunne, and Oluseyi Abiodun Alakija.

Conflict of Interests: The authors have declared that no competing interests exist.

Ethical Approval: In compliance with the Helsinki Declaration, the ethics of research on human subjects were observed in this study. This is because the focus of our investigation was on human elements. Also, the research purpose and methodology were subjected to scrutiny by the Internal Research Ethics Committee of Redeemer's University, Ede, Osun State, and was given due approval. Again, before this study, a certificate for reviewing regulatory and informational documents on human-subject protection, responsible conduct of human studies, and the protection of the rights and welfare of human subjects in research was awarded after undergoing an online course organized by the Nigerian National Code of Health Research Ethics of Center of Bioethics and Research, and the University of Miami, Florida. Lastly, an ethical code was not applied for in this study because, according to the National Code of Health Research Ethics, National Health Research Ethics Committee of Nigeria (NHREC), Section B, item A, this type of research does not require an ethical code.

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Informed Consent: In administering the research instruments, respondents were briefly educated on the purpose of the research and were given opportunities to ask questions for clarifications. All respondents remain anonymous. Participants were also informed that they could withdraw from the study at any time without any penalty. Participation in the study was purely voluntary, with no form of coercion used by the researchers, and no incentive was given to the participants of this study.

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