PRACTICE OF SELF-MEDICATION AND KNOWLEDGE OF PHYSICAL HEALTH EFFECTS AMONG STUDENTS OF TERTIARY INSTITUTIONS IN NORTH-CENTRAL, NIGERIA

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Abstract
The rise in self-medication due to health issues stemming from side-effects and drug resistance, as reported by various scholars, appears to be a global phenomenon. Although everyone is at some risk of self-medicated drug-related problems, students in tertiary institutions seem to be particularly vulnerable. This study focused not only on the risk-taking behavior involved in self-medicated drug use but also investigated the knowledge of physical health effects as related to the practice of self-medication. The study adopted the cross-sectional research design. The sample consisted of 1950 respondents who were sampled using multi-stage sampling procedure. A set of questionnaire developed and validated by the researchers was used to collect data for the study. The data collected were analyzed using descriptive statistics and inferential statistics of Pearson Product Moment Correlation (PPMC) and t-test were used to answer the research questions and the hypotheses, respectively. All the hypotheses were tested at 0.05 level of significance. The study revealed that a high percentage of respondents practiced self-medication. A, the study showed a significant difference between male and female in the knowledge of self-medication with a p-value of 0.0436. While there was no significant difference in knowledge of physical health effects of self-medication. The study revealed that a higher knowledge of physical health effects was associated with a lower practice of self-medication among the respondents. Based on the findings of this study, it was recommended that health educators should organize health campaign and sensitization programme on self-medication and its health-related hazards, and students should be encouraged on the need to make use of health care facilities.

Keywords: Practice, self-medication, knowledge, tertiary institution

Introduction

Self-medication has become a public health concern based on the various health problems arising from the side-effects and drug resistance that are presumed to arise from its high prevalence. The ancient trend in self-medication is as old as mankind. Man has from time immemorial used herbs, tree barks, roots, and drugs to treat self-diagnosed ailments without a prescription from health personnel. By the end of the 19th century, the emergence of new classes and groups of drugs owing to innovations and scientific discoveries in medicine and health also led to the emergence of new ways of self-medication. Jain et al. (2019).

Medicines are important for treating diseases, and they are responsible for improving the population's life quality. However, indiscriminate use of medicines might cause health risks. The practice of self-medication is worrisome because of the simple access to therapeutic products and potential damages to health caused by such practices. Reporting any disease to the physician at the hospital or clinic ensures correct medication, as they

diagnose and prescribe the necessary drugs to alleviate the condition. In some countries, pharmacies, drug outlets, and supermarkets sell non-prescription or over-the-counter (OTC) medicines without a doctor's prescription (Adeola et al., 2023).

Responsible self-medication entails using approved and available medicine in a safe and effective way as directed, though without a prescription. The types of drugs used are indicated for a self recognizable condition following an initial medical diagnosis, which means that users have previous knowledge of the dose, time, and side effect(s) of the overdose of the drug. In developed nations, responsible self-medication is possible due to factors such as high-quality education, accessibility to health information, safety, and quality health care. These factors also include government policies on health, health-seeking behavior, and sceptical expert knowledge (Awosusi & Konwe, 2015).

Non-responsible self-medication is the use of drugs in the treatment of self-diagnosed ailments or symptoms of diseases without supervision or prescription by a physician. It is characterized by the indiscriminate use of drugs for the management of ailments, many of which have resulted in intoxication. The primary issue with non-responsible self-medication is the absence of clinical evaluation by a medical professional, which can lead to incorrect diagnosis, delay in appropriate treatment, drug resistance, use of expired drugs, incorrect dosages, and prolonged usage. The act of non-responsible self-medication seems to be prevalent in the developing countries because of the poor level of literacy, scarcity of health information, and non-implementation of government policies on health issues (Awosusi & Konwe, 2015). For safe use of OTC medications, students are expected to have proper knowledge, attitude, and

practice (KAP) towards OTC medications and subsequent adverse drug reactions (ADRs).

Practice is the application of rules and knowledge that leads to action. Health practice involves individuals treating their ailments and conditions with approved, non-prescription medicines that are both safe and effective. Good practices of self-medication require that medicines used be of proven safety, quality, and efficiency. Self-medication practice is not restricted to a region or race; both developing and developed countries are experiencing significant prevalence of self-medication. (Ullah et al., 2021). Some countries such as the USA, Denmark, Spain, and Lithuania have very low rates of self-medication (17%, 3%, 11%, and 22%, respectively) (Widayati et al., 2016). These countries are well developed with advanced health care and adequate personnel compared with developing countries. This difference in prevalence may be attributed to the restricted legislative control of prescription-only drugs, over-the-counter drugs, and general sales drugs. The prevalence of self-medication from several Nigerian studies ranges between 60 and 90% (Osemene & Lanmikanra, 2012). In a Nigerian university, 67% of undergraduate students reported self-medication, while in Lagos, south-west Nigeria, 67.7% of infants receiving colic treatment reported self-medication (Bassi & Osakwe, 2021).

Knowledge deals with the awareness, understanding, or information or fact that has been obtained by experience or study. In health, knowledge influences the capacity to acquire, retain, and use information. It can also influence comprehension, experience, discernment, and skill in health. In public health practice, knowledge can significantly contribute to improving patient safety and reducing harm. It appears that the practice of self-medication itself is more popular than the knowledge of its hazardous

effects. It is assumed that having adequate knowledge of the risks associated with drug use for self-medication will reduce the rate at which students consume them. Lack of knowledge leaves students exposed to drug use without a prescription, while awareness of the relevant facts allows them to choose the proper way of medication (Sadiq & Salih 2018).

The greater the knowledge of harmful effects of drug use for self-medication, the lesser the consumption. Medication requires proper knowledge of dosing intervals, administration protocols, and possible side effects. Because of a lack of knowledge and information, many people take and use their medication incorrectly or inappropriately. This, in turn, results in a loss of efficacy and an inefficient use of the considerable resources spent annually on drugs (Vidyavati et al., 2016).

Students' high level of self-medication suggests that they are familiarizing themselves with medicines and their uses, partly due to their willingness to learn about them from the internet and social media networks. Most students lack the necessary knowledge to establish relevant diagnoses, leading them to take medications for symptomatic relief without necessarily treating the underlying cause. Another explanation for students' increased self-medication could be their low literacy, which leads to a lack of knowledge about the side effects of self-medication through media like magazines, radio, and TV (Kuku, 2017).

Medication has several types of effects on the body, including the following: desired effect, side effect, tolerance and dependence, interactions, no apparent effect, and paradoxical effect. Another term for the desired effect is the therapeutic effect. This indicates that the medication is fulfilling its intended purpose. Almost all medications that have a systemic effect on the body will cause side effects. Some medications that have a localised effect on the body can also cause side effects. Side effects are the symptoms that result from a normal dose of a medication. Most side effects are not serious, and some may subside as the body adjusts to the medication.

The physical health effects of self-medication on individual students or on the institution as a whole cannot be over emphasized. Self-medication can lead to serious consequences, such as delayed diagnosis of illness, drug resistance, the development of co-morbidities, and, in some cases, death. Self-medication with drugs masks the signs and symptoms of underlying disease and hence complicates the problem, creating drug resistance and delaying diagnosis (Binta, 2016). According to a study conducted in coastal south Pakistan, the majority of individuals who self-medicate are females. This finding aligns with Goel's (2023) findings, which indicate that females self-medicate approximately 1.4 times more frequently than male respondents. This could be attributed to the reluctance of female students to visit the hospital or outpatient department for minor illnesses, as well as their perception of drugs as more potent and their belief in the effectiveness of prevention and treatment compared to men. A Lithuanian study revealed that women were more likely than men to use self-medicated drugs, a finding further reinforced by a study among first-year medical students at Arabian Gulf University Bahrain. On the other hand, in one Nigerian study, males seemed more prone to such medication than females (Zafar, 2018).Studies revealed a higher prevalence of self-medication among males than females, while some scholars found no strong association between gender.

Research Question

1. What is the level of knowledge of physical health effects of self-medication among students of

tertiary institutions in North Central, Nigeria?

Research Hypotheses

The following hypotheses will be tested for in this study

1. There is no significant relationship between knowledge and practice of self-medication among students in North central, Nigeria.
2. There is no significant difference between male and female students knowledge of physical health effects of self-medication among students of tertiary institutions in North Central, Nigeria.

Research methods

The study adopts a descriptive research design of cross-sectional nature. The population of the study includes all students of tertiary institutions in North Central Nigeria. The sample of the study consists of 1,950 regular students that were selected from public tertiary institutions. Multistage sampling procedure was adopted to select the respondents for the study. The first stage involves using stratified random sampling techniques to select three categories of tertiary institutions from each state in north-central Nigeria, viz., colleges of education, polytechnics, and universities. The next stage involves using simple random sampling to select three states out of the six in north-central Nigeria. Therefore, we selected nine institutions, consisting of three universities, three polytechnics, and three colleges of education, for a total of nine institutions. The third stage involved the selection of one school from each institution of colleges of education, polytechnics, and one faculty from each university through the use of purposive random sampling techniques. This study sampled six schools from polytechnics, three schools from colleges of education, and three faculties from universities. Due

to the differences in school population, proportionate sampling technique was used to select 900 students from the three universities (300 each), 600 students from the three polytechnics (200 each), and 450 students from colleges of education (150 each), making 1,950 respondents.

Instrument for data collection

A pre-tested, structured questionnaire was used for the study. The questionnaire was in three sections. The first section sought information on demographic characteristics of the respondents such as gender, type and ownership of institution. The second section contains questions on knowledge of physical health effects of self-medication. Items on this section was measured using the four modified Likert scale of Strongly Agree (SA) - 4, Agree (A) - 3, Disagree (D) - 2 and Strongly Disagree (SD) - 1. The questionnaire was validated by two experts from Human Kinetics and Health Education Department of Ekiti State University, Ado-Ekiti. The validated questionnaire was tested for reliability and distributed to the students by the researcher with the help of 12 trained research assistants who administered the questionnaire to the students in their various institutions to gather information about their knowledge of physical health effects and practice of self-medication.

Data analysis

Data were analyzed by using descriptive statistics of mean and standard deviation to answer the research question, while the *t*-test statistics were employed to test the hypotheses at 0.05 level of significance. Any mean response score of 2.50 or above is regarded as positive, while any mean response score of or acceptable, while any mean response score of less than 2.50 is regarded as not acceptable.

Results

Table 1: Level of knowledge of physical health effects of self-medication among students

Items	Responses	Frequency	Percentage
Self-medication can leads to wrong treatment?	Yes	1413	72.44
	No	537	27.56
Self-medication leads to drug addiction?	Yes	1461	74.9
	No	489	25.1
Self-medication can cause organ damage e.g liver and kidney?	Yes	1550	79.5
	No	400	20.5
The main problem caused by self-medication include mixing medications that are not safe to mix, which may result in legal costs of health concerns?	Yes	1570	80.5
	No	380	19.5
Self-medication can lead to wrong diagnosis?	Yes	1515	77.7
	No	435	22.3

Table 1: presents the level of knowledge of physical health effects of self-medication among students of tertiary institutions in North Central Nigeria. The result shows that the majority of the study participants have some level of knowledge of physical health effects of self-medication, while few of the respondents do not. The majority of respondents indicated 'Yes'. This implies that the level of knowledge of physical health effects of self-medication among students of tertiary institutions in North Central Nigeria was high.

Table 2: Relationship between knowledge and practice of self-medication among students of tertiary institution in North central, Nigeria

Variables	N	Mean	Stand Dev	R	P	Remark
Knowledge	1950	48.98	4.46	0.436*	0.000	Significant
Practice	1950	40.05	5.05			

*$P<0.05$

Table 2 shows that the computed R-value (0.436) is significant at $p<0.05$ level of significance. The null hypothesis was rejected. This implies that there is significant relationship between knowledge and practice of self-medication among students of tertiary institutions in North Central Nigeria. The correlation between knowledge and practice of self-medication among students of tertiary institutions in North Central Nigeria is moderate and statistically significant in a positive direction. The positive or direct correlation implies that increased in knowledge will lead to proportionate increase in practices among students and vice versa.

Hypothesis 2: There is no significant difference between male and female students' knowledge of physical health effects of self-medication among students of tertiary institutions in North Central, Nigeria.

Table 3: t-test analysis of gender and practice of self-medication

Gender	N	Mean	SD	Df	t	P (Sig)	Rem.
Male	952	7.06	3.69	1948	1.977*	0.048	Significant
Female	998	7.52	4.32				

$P>0.05$

The result on table 3 shows that females had higher mean score (7.52) on the self-medication practices than their male counterparts (7.06). The result further shows that the computed t-value (1.977) with degree of freedom 1948 was statistically significant at $p<0.05$ level of significance for the groups. The null hypothesis was rejected. This implies that there is significant difference in the knowledge of physical health effects of self-medication among students of tertiary institutions in North Central Nigeria based on gender.

Discussion

Despite having a thorough understanding of the harmful consequences of self-medication, tertiary institution students continue to practice self-medication. This is similar to previous studies done among Nigerian undergraduates in different parts of the country, where a high proportion of students practice self-medication, ranging from 56.6% to 90% (Bassi & Osakwe, 2021). The present study revealed there is significant difference between male and female undergraduates in relation to their level of knowledge on physical health effects of self-medication. This finding contradicts previous research indicating that gender does not influence students' knowledge about the health consequences of self-medication (Sridher & Shariff, 2018). However, it aligns with a study conducted in coastal south Pakistan, which revealed that the majority of self-medicating individuals are female (Goel, 2023). This could be attributed to the reluctance of female students to visit the hospital or outpatient department for minor illnesses, as they tend to view drugs as more potent and believe that prevention and treatment are more effective than those of male students. The slightly higher mean among females recorded in the study, which shows that females practice self-medication more than males, negates the findings that showed a higher prevalence among males than females (Fadare, 2011; Al-Hussaani et al., 2022).

Conclusion

According to the study's findings, nearly all respondents engaged in poor self-medication practices, despite having a high level of knowledge about physical health effects. There was a cognitive discord between the respondents' knowledge and their practice of self-medication, indicating that knowledge did not necessarily translate into effective behavior.

Recommendations

Based on the conclusion of this study, it is therefore recommended that;
1. Health educators should organize health campaign and sensitization programme on self-medication and its health-related hazards that should be embarked upon by health practitioners at tertiary institutions.
2. Additionally, students should be encouraged on the need to make use of health care facilities.
3. Finally, the government should ensure regulation, control, and law enforcement of the sale of drugs by untrained personnel, as this will drastically reduce indiscriminate drug use and non-responsive self-medication.

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