



Self Medication Against COVID19 Infection: Assessment of Practices among Residents in a Semi Urban Nigerian Community

Henry Chiagozie Igwenagu ^a, Nneka U Igboeli ^a,
Somtochukwu Maria-Regina Nwajiobi ^a,
Samuel Ebuka Boniface ^{b*}, Samuel Chijioke Ofili ^a,
Peterkings Eriuroro Jokoh ^c,
Innocent Jepherson Emeka ^d,
Micheal Chinyem Okonkwo ^e, Chidera Lawrencina Iyi ^b
and Evaristus Jideofor Ugboma ^f

^a Department of Clinical Pharmacy and Pharmacy Management, Faculty of Pharmaceutical Sciences, University of Nigeria, Nsukka, 410001, Enugu State, Nigeria.

^b Department of Clinical Pharmacy and Pharmacy Management, Faculty of Pharmaceutical Sciences, Nnamdi Azikiwe University, Awka, Nigeria.

^c KIT Institute, The Netherlands.

^d Department of Clinical Pharmacy, University of Benin, Nigeria.

^e Department of Pharmacy, Delta State University, Abraka, Delta State, Nigeria.

^f Department of Inspection, Monitoring and Quality Assurance, Pharmacy Council of Nigeria, Abuja, Nigeria.

Authors' contributions

This work was carried out in collaboration among all authors. Authors NUI and HCI conceptualized the idea, designed the study tools and analyzed the results and wrote the results and discussion sections of the manuscript. Authors SMRN, PEJ, SEB and SCO wrote the introduction, methodology and designed the study tools. Authors SCO, IJE, MCO, CLI and EJU was involved in the data collection. All authors read and approved the final manuscript.

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*Corresponding author: E-mail: bonifaceebukasamuel@gmail.com;

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ABSTRACT

Aims: The prevalence of self-medication worldwide has been on the increase especially with the outbreak of the COVID-19 pandemic. Even though self-medication can reduce pressure on the healthcare, the seeming downsides is overwhelming especially with the lockdown in the COVID-19 era. This study is thus set to understand the prevalence and nature of self-medication against COVID-19 among Individuals in Nsukka Town.

Methods: A cross-sectional survey based on descriptive non-experimental research designed to investigate the prevalence and practices of self-medication against COVID-19 was conducted within the Nsukka town of Enugu state, Nigeria. A 20-item structured, self-administered questionnaire was administered to a population consisting of Health workers, Road Transport workers and market women. Microsoft Excel 2016 and SPSS version 21.0 were used to analyze the data. Descriptive and inferential statistics were used to summarize the data.

Results: A total of 840 responses were received. Participants aged 35-44 (262, 29.6%) and males (592, 67%) were the highest in the study. A 38.0% of the respondents have a tertiary education certificate while a 36.5% are traders. Nearly half (45.5%) of the participants were married. Participants indulgence in general self-medication (439, 49.7%) was higher than indulged in self-medication to prevent COVID-19 (415, 46.9%). Most self-medication was done largely to prevent COVID-19 infection. Among the drugs commonly self-medicated are dexamethasone (6.2%) and vitamin C (6%) closely followed prednisolone (3.8%). A few of the participants had “no trust in doctor” (1.8%) while an equal number “have medicines of family members” (1.8%).

Conclusion: Approximately half of the respondents reported to have self-medicated to prevent COVID-19. Dexamethasone and Vitamin C were most commonly used drugs. The only factor associated with COVID-19 self-medication was gender where being a female was associated with self-medicating against COVID-19. Concerted efforts are needed to educate the public on the dangers of self-medication and the need to access medical attention and information from healthcare professionals during pandemics.

Keywords: COVID-19; pandemic; self-medication; Nsukka Nigeria; lockdown.

1. INTRODUCTION

World Health Organization (WHO) defines self-care as what people do by themselves to keep their health, prevent and treat illness [1]. The concept of self-medication is the selection and use of medicines chosen by the patient for the treatment of the symptoms perceived by him/her. The practice of self-medication became very common with the pandemic outbreak of COVID-19 as most persons sought for a means to protect and prevent themselves against the virus. This resulted in people having to go for certain medications on their own without seeking counsel or consulting a physician [2].

Self-medication has been presented in many ways by different countries and cultures globally,

nevertheless the practices are mostly based on certain advantage or disadvantage obtained from past experiences with similar drugs [2]. The effects of self-medication can be positive when practiced correctly; such as saving scarce medical resources from being wasted on minor conditions, reducing the pressure on medical services where health care personnel are insufficient, lowering the costs of community funded health care program and reducing absenteeism from work due to minor symptoms [3]. However, it also has potential risks at individual level such as incorrect self-diagnosis and choice of therapy, route of administration, and severe adverse effects.

Generally, health literacy plays an important role in self-medication behavior [4]. Researches have

proven that the level of knowledge is globally low concerning the COVID-19 pandemic and other coronaviruses according to a meta-analysis of 70 scientific articles. The purpose is to systematically review the global trends and factors influencing self-medication. The COVID-19 pandemic has prompted a general lock-down in most of the world, leaving the general sense that the only resource that people have is to self-care, self-help and self-medicate [5]. Because of commonly occurring symptoms of soreness or throat pain, dry cough, fever, body ache, diarrhea and vomiting, breathlessness; many people started to take medicines without being diagnosed or tested for COVID-19 [6]. Most of the drugs in this category are those who were previously used in the treatment of the various symptoms associated with COVID-19, they include antimalaria drug hydroxychloroquine [7], the antibiotic azithromycin [8], the non-steroidal anti-inflammatory drug (NSAID) ibuprofen [9], the antiretrovirals lopinavir and ritonavir, leukotrienes inhibitor, Montelukast, Vit D and calcium supplements [6]. The trend of this self-medication has been reported by some researchers to have increased worldwide based on the number of Google searches since the pandemic started [10]. This trend has also resulted to a tremendous medical challenge [11,12] because the various prescription drugs currently approved for COVID-19 symptoms carry adverse drug reactions [10]. Considering the danger placed on the population to self-medicate due to the pandemic, it is therefore necessary to understand the self-medication practices of individuals in our immediate communities. This study is therefore set out to determine the prevalence of self-medication practices against COVID-19 amongst adults in Nsukka; to determine the reasons for self-medication against COVID-19 amongst adults in Nsukka; to determine the various drugs used for self-medication against COVID-19 amongst adults in Nsukka and to assess the reported outcomes of self-medication against COVID-19.

2. METHODOLOGY

2.1 Study Design and Setting

A cross-sectional survey based on descriptive non-experimental research designed to investigate the prevalence and practices of self-medication against COVID-19. The study was conducted within the Nsukka town of Enugu state, Nigeria to cover the target population of health care workers, road transport workers and traders within the location.

2.2 Study Population

A population size was first gotten for the three different categories. For the Health workers, there's an estimated population size of 1500. For the Road transport workers, there's an estimated population size of 750. For the traders, there's an estimated population size of 2000. Sample size calculation was done using confidence level of 95%, margin of error of 5% and a population proportion of 50% to obtain sample sizes of 306, 255 and 323 for health workers, road transport workers and traders, respectively. A total sample size of 884 was used for the study.

2.3 Survey Instrument and Administration

The study instrument was a 20-item structured, self-administered questionnaire, constructed in simple English to enable understanding by the target population. The questionnaire was constructed to have two (2) main sections; Section (A) and Section (B). section A consists of the Demographic information; This section asked questions that will enable the researcher know more on the personal data of the correspondents. Vital parameters like age, gender, educational level, work status and marital status were contained in this section. Section B consists of the Prevalence and practices; In this section, the prevalence and practice of self-medication by the correspondents were assessed using fifteen (15) well structure questions to determine the prevalence, medications used, reasons, reported outcomes and associated factors of self-medication amongst the adults in Nsukka, Enugu state. The study was explained to the intending participants with oral or written consent obtained from those who agreed to participate. The participants were required to fill the questionnaire individually without reference to any material.

2.4 Inclusion/Exclusion Criteria

The study included a population of 18 years and above, of health care workers, road transport workers and traders who could be either non-educated or with education level of Primary, secondary or tertiary. The study excluded all persons of various categories who did not meet the inclusion criteria.

2.5 Data Analysis

Data was coded into Microsoft Excel 2016 and analyzed using IBM SPSS Statistics for Windows

Version 21.0 (IBM Corp, Version 21.0, Armonk, NY, USA). Descriptive statistics was used to summarize data. Inferential statistics such as Pearson’s Chi square test was used, where applicable, with statistical significance set as $P < 0.05$.

2.6 Ethical Considerations

An ethical clearance was gotten through the Faculty of Pharmaceutical Sciences Ethics Review Board. A written approval was obtained from the various hospital used for the data collection. Also, an oral consent was obtained from the various unions covering the traders and road transport workers.

3. RESULTS

3.1 Socio-demographic Data

The demographic Table 1 below showed that the number of study candidates aged 35-44 (262, 29.6%) was more than the other age categories of 18-24, 25-34, 45-54, and 55+ (70, 7.9%) were the least age group for the study. It was also revealed that the total number of males in all the categories that filled the questionnaire (592, 67%) was far more than the number of females (292, 33%) filled the questionnaire. The work status formed the basis the categorization. The distribution of the questionnaire was divided into three different sectors: health care sector (306, 34.6%), traders (323, 36.5%) and road transport workers (255, 28.8%).

Table 1 also shows that the total number of married respondents who was the highest (402, 45.5%) while divorced were the least (43, 4.9%).

3.2 Self-medication Prevalence and Practices

The result shows that a total number of respondents that have indulged in general self-medication (439, 49.7%) was higher than those who have indulged in self-medication to prevent COVID-19 (415, 46.9%). The result also shows that the candidates for the survey did not self-medicate to treat COVID-19 as none of them tested positive to COVID-19, rather that they self-medicate to prevent against it. They mostly did this for a period of 1 to 2 weeks (219, 24.8%).

Table 1. Socio-demographic characteristics of the respondents

Variables	Frequency n (%)
Age (Years)	
18-24	156 (17.6)
25-34	184 (20.8)
35-44	262 (29.6)
45-54	212 (24.0)
55+	70 (7.9)
Gender	
Male	592 (67.0)
Female	292 (33.0)
Education level	
Tertiary	424 (48.0)
Primary school	244 (27.6)
Secondary school	216 (24.4)
Work Status	
Transportation	255 (28.8)
Trader	323 (36.5)
Health care	306 (34.6)
Marital Status	
Single	223 (25.2)
Married	402 (45.5)
Widowed	216 (24.4)
Divorced	43 (4.9)

3.3 Symptoms and Drugs

The result shows the various symptoms exhibited by the study candidates who have self-medicated to prevent COVID-19. The major symptom exhibited by most of the study candidates in all categories was “body ache” (61, 6.9%) whereas only few of the candidates who have self-medicated to prevent COVID-19 showed symptoms of sneezing (2%). Dexamethasone (6.2%) and Vit C (6%) were the drug mostly taken by those who self-medicated to prevent COVID-19 whereas the least drug that was taken by the study candidates who self-medicated to prevent COVID-19 was prednisolone (3.8%).

3.4 Reasons, Drug Selection Factors and Source of Drugs for COVID-19 Self-Medication

Two of the major reasons the study candidates gave for self-medication for the prevention of COVID-19 was that, they had “no trust in doctor” (1.8%) and that “they have medicines of family members” (1.8%). This can be clearly seen in the Table 2. Only a few of the study candidates gave the reason of “saves time” (0.9%) as why they self-medicated for the prevention of COVID-19. The result also shows that the major drug

Table 2. Reasons, drug selection factors and sources of drugs used for COVID-19 self-medication

Reasons	Frequency (%)
Doctor/clinic far from home	12 (1.4)
High fees of doctor	11 (1.2)
Saves time	8 (0.9)
I have no trust in doctor	16 (1.8)
I have old prescription	13 (1.5)
I have medicines of family member	16 (1.8)
Pharmacist's advice	11 (1.2)
Drug selection factors	
Price	174 (19.7)
Pharmaceutical company/brand	170 (19.2)
Type of Medicine	176 (19.9)
Dosage Form	199 (22.5)
Route of administration	165 (18.7)
Source of drugs for COVID-19	
Pharmacy	159 (18.0)
Online shop	172 (19.5)
Primary health care center	196 (22.2)
Medical representative	175 (19.8)
Patent medicine stores	182 (20.6)

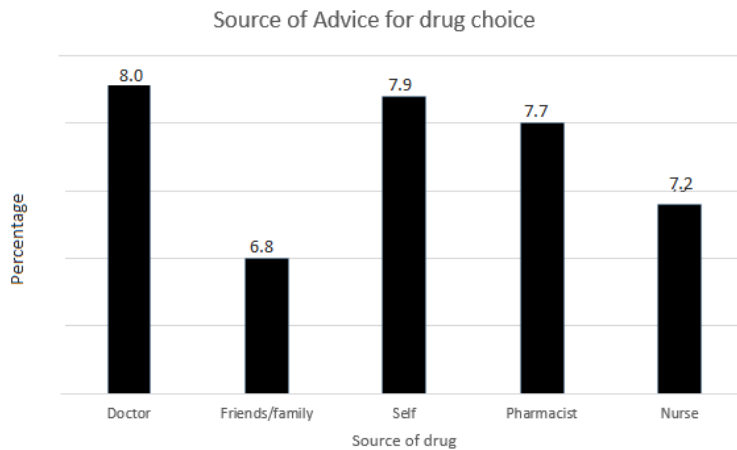


Fig. 1. Source of advice for choice of drugs among the participants

selection factor for self-medication in the prevention of COVID-19 was the dosage form of the drug whereas the least drug selection factor for self-medication in the prevention of COVID-19 was the route of administration. Most of the study candidates who self-medicated to prevent COVID-19 obtained their drugs from primary health care center and only a few candidates (15.9%, 18.0%).

3.5 Reported Outcomes of COVID-19 Self-medication

From the result, only few symptoms of the outcome of COVID-19 self-medication

resolved. There was a prevalence of ADR (277, 31.3%), even though most of the study candidates indicated that they couldn't remember the prevalence of ADR. Stomach cramps was the ADR mostly felt by the study candidates (45, 5.1%), whereas only a few reported to have felt heart problem and weight gain (28, 3.2%). The frequency of those who consulted a nurse for the resolution of ADR were more (72, 8.1%). Similar frequency was observed in candidates who either consulted a doctor or pharmacist or stopped taking the drugs to alleviate the ADR.

3.6 Factors Associated with COVID-19 Self-medication

From the result, the sociodemographic factors mostly associated with COVID-19 self-medication include: - Health Care workers (frequency of 132 and valid percent of 43.1%), People aged 35-44 years (with frequency of 120 and valid percent of 48.9), Males (with frequency of 249 and valid percent of 49.7), tertiary level with frequency of 190 and valid percent of 44.8%) and married with frequency of 195 and valid percent of 48.5%. The result also shows that only "Gender" as a factor was significantly associated with self-medication against COVID-19 ($p = 0.021$).

4. DISCUSSION

The WHO does not recommend self-medication of any form, whether general or specific with any medicine including antibiotics either as preventive or in the treatment of COVID-19 [1]. The study shows that almost half the proportion of the respondents had self-medicated to prevent COVID-19, this included the use of various classes of drugs ranging from antibiotics, analgesics and to anti-inflammatory drugs. Most of these drugs have been reported to have been misused in self-medication of other disease conditions [7,8]. Some of the drugs have also been used previously for the self-medication against COVID-19 [6,9].

It was clear from the study that self-medication was not devoid of adverse effects. A sizeable proportion of the respondents indicated that they experienced ADR on the course of self-medication to prevent COVID-19. This agrees with Samuel *et al.* (2021) who clearly portrayed that self-medication was on the rise during the COVID-19 outbreak [2]. It was not also surprising that a higher number of the respondents who self-medicated during COVID-19 outbreak said it was because they had no trust in doctor This agrees with the research by Lacobucci *et al.* (2020) which reported that more people fear being tested for COVID-19 because of the increased death toll of the patients under treatment [13].

A similar proportion of the respondents also said that their reason for self-medication to prevent COVID-19 was because they had medicines of their family members This was buttressed by the research by Kamran *et al.* in which it was reported that availability of medicines at home

was a major factor for self-medication during the COVID-19 outbreak [4].

The major source of drugs for self-medication was through the primary health center. This could be because, the majority of the drugs stocked in those centers were by donation or support from government and hence could be given free of charge [14]. Expensive drugs are not usually candidates for self-medication. Dexamethasone, Vitamin C and calcium supplements are the drugs mostly used by those who self-medicate for the prevention of COVID-19. These drugs mentioned are mostly affordable by all and sundry and this could contribute to their use for self-medication in the prevention of COVID-19 [15].

More number of males (49.7%) than females (41.4%) self-medicated to prevent against COVID-19. This could be as a result of the unequal distribution of both sexes amongst road transport workers who are majorly males.

5. CONCLUSION

Approximately half of the respondents reported to have self-medicated to prevent COVID-19. The major reasons for self-medication to prevent COVID-19 were majorly that the respondents had no trust in the doctor and that they also have medicines of family members. Dexamethasone and Vitamin C were most commonly used drugs. Stomach cramp was the ADR mostly felt by the study candidates as the outcome of COVID-19 self-medication and only few of the symptoms of COVID-19 self-medication resolved. The only factor associated with COVID-19 self-medication was gender where being a female was associated with self-medicating against COVID-19.

6. LIMITATION OF THE STUDY

Major limitation encountered in the study were the issue of impatience on the part of the respondents in filling the questionnaire. This were discovered from the incoherent manner in which most of the questionnaires were filled. Another limitation to this study was the delay in getting approval from the various authorities involved, so as to carry out the study in their premises.

CONSENT AND ETHICS APPROVAL

An ethical clearance was gotten through the Faculty of Pharmaceutical Sciences Ethics Review Board. A written approval was obtained from the various hospital used for the data

collection. Also, an oral consent was obtained from the various unions covering the traders and road transport workers. No identifier information was obtained from them, as confidentiality, privacy, and anonymity were upheld following the Nuremberg code and Helsinki declarations.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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