

Assessing the reasons for increase in self-medication and control measures among student nurses in school of nursing, University of Benin Teaching Hospital, Edo State, Nigeria

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ABSTRACT: Background Self-medication among student nurses is the use of medicines without doctor's prescription. This practice is a global phenomenon and potential contributor to human resistance to most drugs characteristic with many health challenges. Despite the high knowledge on the complication of self-medication, studies showed that most student nurses still practice self-medication. **Aims** To assess the reasons for increase in self-medication and control measures among student nurses in school of nursing, University of Benin Teaching Hospital, Edo State, Nigeria. **Materials and Methods** A descriptive cross-sectional survey was conducted with stratified simple random sampling technique to select 90 student nurses from three different levels in school of nursing, University of Benin Teaching Hospitals in Benin-City, Edo State. A self-structured questionnaire with open and Likert scale questions used as instrument was administered to assess the reasons for increase in self-medication and the control measures. Data collected were analyzed using tables, percentages, means, standard deviation and t-test for inferential statistics at 0.05 level of significance, through Statistical Package for Social Sciences software. **Results** The result showed the reasons for increase in self-medication and how to reduce its occurrence. It also showed that, the gender of the student nurses is statistically related to the reasons why they practice self-medication ($t=6.82, P<0.001$). **Conclusion** Self-medication can be reduced among student nurses by empowering the law enforcement agencies against self-medication, improving the availability of essential and quality drugs in school clinics, and inclusion of all student nurses in health insurance scheme program, where they can enjoy the benefit of paying only 10% of the treatment charges.

KEY WORDS: Student nurses; knowledge; practice; side effects; self-medication

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INTRODUCTION

Self-medication is the use of medication with-

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out the prescription of health care professionals and it is an important concern for health authorities at global level^[1-3]. This is an integral and vital component of self-care, it is the use of medicines and medicinal product including herbal and traditional products by individuals to treat self-recognized illnesses or symptoms, or continued use of medication prescribed by a physician for chronic or reoccurring diseases or symptoms^[4, 5]. Self-medication has been increasing in many developing and developed countries and has resulted in various side effects and complications^[6]. Self-medication has become a common practice among those that have easy access to drugs like health workers over those who don't have easy access to drugs like traders, teachers and so on^[7-9]. This practice results in wastage of resources, increase resistance to pathogens, and generally entails serious health hazards such as adverse drug reactions, prolonged suffering from side effects that result from irresponsible self-medication^[10-11]. The indiscriminate consumption of drugs entails disadvantages including decreasing clinical efficacy, an increase in treatment duration and prolongation of recovery^[12-13]. Self-medication is not only with over-the-counter (OTC) medications but also with those medications sold under prescription, induces the irrational use of medications^[14, 15]. In the case of drugs that require a prescription, it is very common for self-medication to be reused after a previous prescription or purchased directly from a pharmacy^[16]. This reality is far from being a completely safe practice, because self-medication can produce series of health risks that in many cases may result in toxicity, side effects, adverse reactions and in some cases intoxication or lack of effectiveness because they are used in situations where they are not indicated^[17-18]. This practice is one of the leading causes of death and even suffering because of the serious health hazards it poses on people but in the serious situation drugs are still being misused and hawkers are very common in Nigeria^[19, 20]. In Nigeria there are many unregistered medicine store/ pharmacies from which people purchase drugs from unknown sources^[21].

Self-medication both in OTC and prescription drugs is very common in Nigeria, previous studies have concentrated on general self-medication in Nigeria which is still on the high^[22-23]. The researchers, in the course of clinical teaching in the hospital, have come across different student nurses suffering from the side effects that resulted from irresponsible self-medication in University of Benin Teaching Hospital. Most studies show high knowledge and practice of self-medication among health workers like student nurses, but no available studies examined the reason behind self-medication or proffer solutions to the problem. Based on this notice gap, this study will determine the reasons for increase in self-medication and the control measures.

MATERIAL AND METHODS

Research design and setting

A descriptive cross-sectional study was conducted with simple random sampling techniques to select respondents using a self-structured questionnaire, with open-ended and likert scale questions were administered. The research was carried out in the School of Nursing, University of Benin Teaching Hospital, Egor Local government located in Ugbowo, Benin-Lagos Road. It shares boundary with the University of Benin and Federal Government Girls College Road in Ugbowo Quarters, Benin City, Edo State.

The inclusion criteria were as follows: those who were willing to participate in the study and those who were current students at the school. The exclusion criterion was students who were under punishment or those who were preparing for nursing and midwifery council examination which could limit their ability in participating in the study.

Sample size and sampling procedure

Taro Yamane method was used to calculate for the sample size: Sample size (N) = $\frac{n}{1 + N(e)^2}$

Where n = sample size, N = the population size, e = level of precision/error margin (0.05), E = 0.005 (margin of error) with a confidence level of

95%. Ninety students were selected from School of nursing, University of Benin Teaching Hospital, based on the inclusion and exclusion rules, through stratified simple random sampling technique. Ninety questionnaires were distributed and same were recovered because the researchers were present during the filling of the questionnaire for correction as well as to ensure high percentage of return of the questionnaire.

Data collection tools and procedure

Data collection instrument was a structured questionnaire consisting of questions made up of six parts: Section A: socio-demographic data of respondent with 5 items. Section B: knowledge of self-medication among nursing students. The mean score of ≥ 3.5 is rated as excellent knowledge, 3.0 – 3.4 is rated as very good knowledge, 2.0–2.9 is rated as good knowledge, < 2.0 is rated as poor knowledge. Section C: practice of self-medication among nursing students with 3 items. Section D: effects of self-medication among nursing students with a single item. Section E: reasons for increase in self-medication among nursing students with 24 items. Section F: preventive measure of self-medication among nursing students with 9 items. To ensure reliability of the questionnaire, a pilot study was carried out among nursing student from Igbinedion School of Nursing, Okada, using test-retest method of reliability. 10% of the population questionnaire was administered and analyzed through Cronbach Alpha which result, with the reliability of 0.89 obtained, shows that the test item is highly reliable.

Data obtained were coded and analyzed using the Statistical Package for Social Science (SPSS) version 21.00 statistical software (IBM corp. released 2012. IBM SPSS statistics for windows, version 21.0 Armonk, NY: IBM Corp). Variables and research questions were analyzed using analyzed using descriptive, mean, standard deviation (SD) and the independent t-test for inferential statistics.

Ethical consideration

Ethical approval for this study was obtained

from University of Benin Teaching Hospital ethical committees where the study took place, with approval reference ADM/E22/A/VOL. VII/148300 on March 20th, 2020. In line with the Belmont report, the researcher strived to do no harm to participants. Consent form was given to the participants to seek written consent, and verbal consent was also taken before data collection. Participants were not be exploited financially and physically therefore their lecture time was not encroached, they took the questionnaires to hostel and return second day and data collection took place at the end of the class.

RESULTS

Demographic characteristic of the student nurses from different wards and units in **Table 1**: shows that majority of respondents (48.9%) were aged between 21 – 25 years. 13.3% of respondents were male, 86.7% of respondents were females, majority of respondents (76.7%) were single, 17.8% of respondents were igbo, 11.1% Esan, 33.3% Benin, 11.1% Urhobo, 22.2% Yoruba and 2% were Hausa. Regarding level of education, majority of the respondents (44.5%) were in 100 level.

Knowledge of self-medication among students nurses are reported in Table 2: It shows that student nurses in University of Benin Teaching Hospital have a good knowledge about self-medication with ground mean score of 3.2 (1.7).

Practice of self-medication among student nurses are reported in **Table 3**: it shows that Practicing of self-medication involves all participants 90 (100%) and doing this on a regular basis are 32 (35.5%). Effect of self-medication among student nurses are reported in **Table 4**: it shows the major effects of self-medication in which 80 (88.9%) agreed to drug addiction, 70 (77.8%) agreed to adverse drug reaction as an effect of self-medication, 50 (55.6%) agreed to liver disease, 79 (87.8%) agree to peptic ulcer as an effect of self-medication, 72 (80.0%) agreed to drug resistance as an effect of self-medication, 69 (76.7%)

Table 1 Demographic characteristic of students nurses from school of nursing, University of Benin Teaching Hospital (n=90)

Demographic characteristic	n(%)
Age (year)	
16 - 20	40(44. 4)
21 - 25	44(48. 9)
26 - 30	5(5. 6)
31 - 35	1(1. 1)
Gender	
Male	12(13. 3)
Female	78(86. 7)
Marital Status	
Married	20(22. 2)
Single	69(76. 7)
Divorced	1(1. 1)
Ethnic Groups	
Igbo	16(17. 8)
Esan	10(11. 1)
Bini	30(33. 4)
Urhobo	10(11. 1)
Yoruba	20(22. 2)
Hausa	2(2. 2)
Others (Igbanke)	2(2. 2)
Level of education	
100	40(44. 5)
200	30(33. 3)
300	20(22. 2)
Total	90(100)

agreed to drug dependence as an effect of self-med-

ication.

Reasons for increase in self-medication among student nurses reported in **Table 5**: it shows that the participants agreed that the most reasons why student nurses practice self-medication are: mild symptom of the diseases, Ineffective drug in school clinics and long waiting time with mean scores of 3.1 (1.8), and believed that consulting doctor is time consuming with mean score of 3.3 (1.9). The participants also agreed that the major reasons why student nurses practice self-medication are: consulting doctor is expensive, peer pressure and emergency need of drug with mean scores of 2.9 (1.7), also believed that Lack of health insurance and Information about Drug from internet with mean scores of 3.0 (1.7). The respondents also agreed the following as the may be reasons why student nurses practice self-medication as: Previous use of medication 2.1 (1.2), Ease of access to Drug 2.1 (1.2), Easy to purchase over the counter drug 2.7 (1.6), Familiarity with treatment 2.0 (1.2), For hiding and denying mental illnesses 2.1 (1.2), Perceived self-medication to be harmless 2.4 (1.4), Availability of medication at home 2.1 (1.2), Cost effective 2.4 (1.4) and Dissatisfaction by health care system service 2.2 (1.3).

Table 2 Knowledge of self-medication among school of nursing students in University of Benin Teaching Hospital

Items (n=90)	Sd, N(%)	D,N(%)	A,N(%)	SA, N(%)	Mean (SD)
Self-medication is taking of drugs without doctor's prescription	0(0)	18 (20. 0)	30 (33. 3)	42 (46. 7)	3. 2 (1. 9)
Self-medication causes pathogen resistance	15(16. 7)	5(5. 6)	50(55. 5)	20 (22. 2)	3. 1(1. 8)
Self-medication is beneficial to health	12(13. 3)	28 (31. 1)	30 (33. 3)	20 (22. 2)	2. 2(1. 3)
Self-medication is illegal	14(15. 6)	20 (22. 2)	36 (40. 0)	20 (22. 2)	2. 4(1. 4)
Self-medication causes drug dependence	10(11. 1)	15(16. 7)	40(44. 4)	25 (27. 8)	2. 9(1. 7)
Self-medication causes drug reactions	10(11. 1)	4 (4. 4)	48 (53. 3)	28 (31. 1)	2. 6(1. 52)
Self-medication causes overdosing	10(11. 1)	4(4. 4)	54 (60. 0)	22 (24. 4)	3. 4(2. 0)
Ground mean					3. 2 (1. 7)

Keys: SA: Strongly agree, A: Agree, D: Disagree, Sd: Strongly disagree, SD: Standard deviation.

Moreover, this study identified the following as preventive measures of self-medication among nursing students [**Table 6**]: enforcement of laws to prevent self-medication 1.6 (0.9), public enlightenment on the dangers 1.1 (0.6), pharmacists

must dispense drugs based on valid prescription 1.9 (1.1), hospital managers should reduce or remove consultation fee for student nurses working in the hospital 1.6 (0.9), reducing waiting time for doctor consultation 1.9 (1.1), all student nurses

Table 3 Practice of self-medication among nursing students in University of Benin Teaching Hospital

Practice situation of self-medication (n=90)	Frequency (N)	Percentage (%)
Have you ever self-medicated?		
Yes	90	100
No	0	0
How often do you self-medicate?		
Daily	18	20.0
Weekly	10	11.1
Regularly	32	35.6
Occasionally	30	33.3
What route do you use?		
Orally	80	88.9
Parenteral	5	5.5
Injection	5	5.5
Inhalation	4	4.4
All of the above	1	1.1

Table 4 Effects of self-medication among nursing students in University of Benin Teaching Hospital

Effects of self-medication (n=90)	True, N(%)	False, N(%)
Drug addiction	80 (88.9)	10 (11.1)
Adverse drug reaction	70 (77.8)	20 (22.2)
Liver disease	50 (55.6)	40 (44.4)
Peptic ulcer	79 (87.8)	11 (12.2)
Drug resistance	72 (80.0)	18 (20.0)
Drug dependence	69 (76.7)	21 (23.3)

should be under health insurance scheme of the country 1.9 (1.1), provision of good and quality essential drugs in the school clinic 1.5 (0.9), and information about drug on internet should be under control 1.2 (07).

Furthermore, *t*-test analysis shows that there is significant difference between gender and the reasons for increase in self-medication among nursing students in University of Benin Teaching Hospital. ($t=6.82$, $P < 0.001$).

DISCUSSION

This study showed that nursing students were knowledgeable about self-medication. This is in agreement with a study conducted in 2015 among medical students in Chitwan Medical College, Bharatpur, Nepal, where 75 students studying in first year were selected for the study and found that

more than half of the respondents have a good knowledge about self-medication regarding definition, adverse effects and different types of drug. [2, 4] It is also in line with the study carried out in 2016, and found that person's using self-medication have sufficient knowledge about medicines [25, 26].

This study also shows that student nurses practice self-medication regularly. This is in agreement with the study on the assessment of self-medication practices and its associated factors among undergraduates of a private University in Nigeria in 2018, and found that Majority of the students practice self-medication and attribute it to unfriendly attitude of health care workers in the university clinic [22]. This is also in agreement with a Doctoral dissertation in University of Ghana in 2017 on Self-Medication Perception and Practice among Pregnant Women in Wa - Municipality. Their study aim was to investigate the perception and practice of self-medication among pregnant women in Wa-Municipality and they found that easy accesses to non-prescribed medication is the main associated factors that had great influence in the practice of self-medication among pregnant women [27]. Moreover, this present study shows that the major perceived effect of self-medication among student nurses are: drug addiction, adverse drug reaction, drug dependence, and liver disease. This is in agreement with the study carried out in 2016 on the analysis of analgesic, antipyretic, and non-steroidal anti-inflammatory drug use in pediatric prescriptions and found that paracetamol is an antipyretics and analgesics which is used in large dose can cause liver problems (toxicity) [28].

In addition, this study identified the following reasons for self-medication: mild symptoms of the diseases, ineffective drugs in school clinics, long waiting time, consulting a doctor is time-consuming, consulting a doctor is expensive, peer pressure, emergency need of drugs, lack of health insurance, information about drugs from internet, previous use of medication, ease of access to drugs, easy to purchase over-the-counter drugs,

Table 5 Reasons for increase in self-medication among student nurses in University of Benin Teaching Hospital

Reasons for self-medication (n=90)	SA, N (%)	A, N (%)	D, N (%)	Sd, N (%)	Mean(SD)
Mild symptoms of diseases	40(44.4)	30(33.3)	15(16.7)	5(5.6)	3.1(1.8)
Self-diagnosis of diseases	37(41.1)	26(28.9)	18(20.0)	9(10.0)	2.8(1.6)
Previous use of medication	25(27.8)	22(24.4)	23(25.6)	20(22.2)	2.1(1.2)
Ease of access to drugs	22(24.4)	25(27.8)	23(25.6)	20(22.2)	2.1(1.2)
Easy to purchase over-the-counter drugs	36(40.0)	24(26.7)	13(14.4)	17(18.9)	2.7(1.6)
Consulting a doctor is expensive	39(43.3)	26(28.9)	15(16.7)	10(11.1)	2.9(1.7)
Consulting a doctor is time consuming	42(46.7)	32(35.6)	6(6.7)	10(11.1)	3.3(1.9)
People too busy to go through the normal process of consultation	20(22.2)	18(20.0)	24(26.7)	28(31.1)	1.7(1.0)
Shame of disclosing their problem to the doctor	20(22.2)	15(16.7)	30(33.3)	25(27.8)	1.6(0.9)
Ignorance	15(16.7)	10(11.1)	25(27.8)	40(44.4)	1.1(0.6)
Cultural and socio-economic issues	18(20.0)	20(22.2)	30(33.3)	22(24.4)	1.7(1.0)
Familiarity with treatment	21(23.3)	24(26.7)	25(27.8)	20(22.2)	2.0(1.2)
Emergency need of drugs	36(40.0)	29(32.2)	8(8.9)	17(18.9)	2.9(1.7)
Lack of health insurance	41(45.6)	26(28.9)	13(14.4)	10(11.1)	2.9(1.73)
Information about drug from internet	37(41.1)	30(33.3)	10(11.1)	13(14.4)	2.9(1.7)
For hiding and denying mental illnesses	23(25.6)	24(26.7)	20(22.2)	23(25.6)	2.1(1.2)
Unfriendly attitude of health workers	38(42.2)	26(28.9)	12(13.3)	14(15.6)	2.7(1.6)
Ineffective drugs in school clinics	41(45.6)	29(32.2)	12(13.3)	8(8.9)	3.1(1.8)
Perceived self-medication to be harmless	37(41.1)	18(20.0)	25(27.8)	10(11.1)	2.4(1.4)
Availability of medication at home	25(27.8)	23(25.6)	21(23.3)	21(23.3)	2.1(1.4)
Cost effective	30(33.3)	23(25.6)	20(22.2)	17(18.9)	2.4(1.4)
Peer pressure	38(42.2)	27(30.0)	10(11.1)	15(16.7)	2.89(1.7)
Dissatisfaction by health care system service	20(22.2)	30(33.3)	22(24.4)	18(20.0)	2.22(1.3)
Long waiting time	40(44.4)	30(33.3)	12(13.3)	8(8.9)	3.11(1.8)

Keys: SA: Strongly agree, A: Agree, D: Disagree, Sd: Strongly disagree, SD: Standard deviation.

Table 6 Preventive measures of self-medication among nursing students in University of Benin Teaching Hospital

Preventive measures (n=90)	Yes, N (%)	No, N (%)	Mean(SD)
Enforcement of laws to prevent self-medication	70 (77.8)	20 (22.2)	1.6 (0.9)
Public enlightenment on the dangers	50 (55.6)	40 (44.4)	1.1(0.6)
Pharmacists must dispense drugs based on valid prescription	85(94.4)	5(6.2)	1.9(1.09)
Good interpersonal relationship between student nurses and health workers	41(45.6)	49 (54.4)	0.9 (0.5)
Hospital managers should reduce or remove consultation fee for student nurses working in the hospital	73 (81.1)	17 (18.9)	1.6 (0.9)
Reduce waiting time for doctor consultation	87(96.7)	3 (3.3)	1.9 (1.1)
All student nurses should be under health insurance scheme of the country	84 (93.3)	6 (6.7)	1.9 (1.1)
Provision of good and quality essential drugs in the school clinic	68 (75.6)	22(24.4)	1.5 (0.9)
Information about drugs on internet should be under control	55(61.1)	35 (38.9)	1.2 (0.7)

familiarity with treatment, for hiding and denying mental illnesses, perceived self-medication to be harmless, availability of medication at home, cost effective and dissatisfaction by health care service. These findings are in agreement with a study carried out in Mansoura University, Egypt, on Self-Medication among University Students in 2017 and

found that the students practice self-medication because of their previous experiences, advice of family or friends, their health problems being considered as too trivial, time saving, non-availability of transport, convenience, ability to self-manage the symptoms, urgency of the problem, doctor that was not available, having sufficient information,

Lack of time, low-cost consultation, and lack of trust in medical doctors^[29].

Furthermore, this study also identified ways of reducing or eradicating self-medication among students as follows: enforcement of laws to prevent self-medication, public enlightenment on the dangers, pharmacist must dispense drugs based on valid prescription, reduction or removal of consultation fee for student nurses working in the hospital, reducing waiting time for doctor consultation, inclusion of student nurses under the health insurance scheme of the country, provision of good and quality essential drugs in the school clinic, and information about drug on internet should be under control. These findings are in conformity to the study carried out by Burnam-Fink (2016), which reveals that health education of people about self-medication, patient waiting time, public enlightenment on dangers of self-medication through television, radio, and so on, are ways of preventing self-medication^[30]. This is also in line with the research carried out by Gupta and Singh 2016, after analysing the data; it reveals that self-medication can be prevented through prevention of supply of medicines prescription, awareness and education regarding implication of self-medication, control of prescriber's consultation fee, enforcing strict rules regarding misleading pharmaceutical advertisement^[31].

Finally, this study shows that there is a significant relationship between gender of the student and the reasons for self-medication which is in agreement with Helal and Abou-ElWafa, 2017. They found that sex, having children, illicit drug use, and having a home pharmacy were statistically associated with self-medication among university students.^[29]

Nevertheless, the researcher encountered some challenges during the course of this work. Some respondents were not honest enough while answering the questionnaire, also retrieving the questionnaire from the respondents was difficult as most of the respondents were slow in answering the questionnaire said they are busy with their assign-

ment, but after much explanation and persuasion by the researchers they all cooperated.

CONCLUSION

This study revealed that majority of the student nurses had a good knowledge about self-medication, and they practiced of self-medication. It also identified reasons for self-medication, and its preventive measures. Based on the findings of the study, the researchers made the following recommendations: (1) hospital managers should encourage good interpersonal relationship between student nurses and other health personnel; (2) they should also re-considered inclusion of student nurses in National Health Insurance Scheme (NHIS) that was said to have been removed since last year in the country; (3) it is better to provide monthly incentive like bursary to student nurses in other to alleviate their financial challenges; (4) seminars and workshop on the side effects and other complications associated with self-medication should be organized; and (5) the law enforcement agents should be strengthened to discipline err student.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

- [1] Rather IA, Kim BC, Bajpai VK, et al. Self-medication and antibiotic resistance: Crisis, current challenges, and prevention. *Saudi J Biol Sci* 2017; 24: 808-12.
- [2] Nguyen HV, Nguyen TH. Factors associated with self-medication among medicine sellers in urban Viet-

- nam. *Int J Health Plann Manage* 2015; 30:219–31.
- [3] Nepal G, Bhatta S. Self-medication with antibiotics in WHO Southeast Asian Region: a systematic review. *Cureus* 2018; 10: 1–17.
- [4] Hazekamp A, Pappas G. Self-medication with cannabis. In *Hand book of Cannabis*. New York, NY: Oxford University Press; 2014.
- [5] Ekor M. The growing use of herbal medicines: issues relating to adverse reactions and challenges in monitoring safety. *Front Pharmacol* 2014; 10(4) : 177:1–10
- [6] Montastruc JL, Bondon-Guitton E, Abadie D, et al. Pharmacovigilance, risks and adverse effects of self-medication. *Therap* 2016; 71(2):257–62.
- [7] Gibson BA, Brown SE, Rutledge R, et al. Gender identity, healthcare access, and risk reduction among Malaysia's mak nyah community. *Glob public health*. 2016;11(7–8):1010–25.
- [8] Bonti D. Bridging the Gap Between Self-Medication and Access to Healthcare in Ghana (Doctoral dissertation, The Ohio State University); 2017.
- [9] Benson K, Flory K, Humphreys KL, et al. Misuse of stimulant medication among college students: a comprehensive review and meta-analysis. *Clin Child Fam Psychol Rev*. 2015;18:50–76.
- [10] Mehmood A, Rehman AU, Zaman M, et al. Self-medication; An Emerging Trend. *J Pharm Res Int*. 2016; 29:1–8.
- [11] Islam M. A survey on prevalence, practice, knowledge and attitudes of self-medication among Bangladeshi parents' with antibiotics to their children (Doctoral dissertation, East West University); 2016.
- [12] Ruiz MA. Self-Medication: a Major Problem Worldwide that Could be Prevented. *Int J Risk Saf Med*. 2016;27: 59–60.
- [13] Dell'Osso B, Albert U, Atti AR, et al. Bridging the gap between education and appropriate use of benzodiazepines in psychiatric clinical practice. *Neuropsychiatr Dis Treat*. 2015; 11: 1885 – 1909.
- [14] Haseeb A, Bilal M. Prevalence of using non prescribed medications in economically deprived rural population of Pakistan. *Arch Public Health*. 2016; 74:1–7.
- [15] Chang J, Ye D, Lv B, et al. Sale of antibiotics without a prescription at community pharmacies in urban China: a multicentre cross-sectional survey. *J Antimicrob Chemother*. 2017; 72:1235–42.
- [16] Kalungia AC, Burger J, Godman B, et al. Non-prescription sale and dispensing of antibiotics in community pharmacies in Zambia. *Expert Rev Anti Infect Ther*. 2016; 14:1215–23.
- [17] Mira JJ, Lorenzo S, Guilabert M, et al. A systematic review of patient medication error on self-administering medication at home. *Expert Opin Drug Saf*. 2015; 14:815–38.
- [18] Weaver MF, Hopper JA, Gunderson EW. Designer drugs 2015: assessment and management. *Addict Sci & Clin Pract*. 2015; 10:8–16.
- [19] Agbo MC. The health and educational consequences of child Labour in Nigeria. *Health Sci J*. 2017; 11: 1–9.
- [20] Ogbonna BO, Ilika AL, Nwabueze SA. National Drug Policy in Nigeria, 1985–2015. *World J Pharm Res*. 2015;4(6):248–64.
- [21] Klantschnig G, Huang C. Fake drugs: health, wealth and regulation in Nigeria. *Rev Afr Polit Econ*. 2019; 46(161):442–58.
- [22] Esan DT, Fasoro AA, Odesanya OE, et al. Assessment of Self-Medication Practices and Its Associated Factors among Undergraduates of a Private University in Nigeria. *J Environ Res Public Health*. 2018; 2018:1–7.
- [23] Babatunde OA, Fadare JO, Ojo OJ, et al. Self-medication among health workers in a tertiary institution in South-West Nigeria. *Pan Afr Med J*. 2016; 24: 1–8.
- [24] Gyawali S, Shankar PR, Poudel PP, et al. Knowledge, attitude and practice of self-medication among basic science undergraduate medical students in a medical school in western Nepal. *J Clin Diagn Res* 2015; 9: FC17 – FC22.
- [25] Chouhan KI, Prasad SB. Self-medication and their consequences: a challenge to health professional. *Asian J Pharm Clin Res*. 2016; 9:314–7.
- [26] Alkhatatbeh MJ, Alefan Q, Alqudah MA. High prevalence of self-medication practices among medical and pharmacy students: a study from Jordan. *Int J Clin Pharmacol Ther*. 2016; 54:390–8.
- [27] Adama S. Self-Medication Perception and Practice among Pregnant Women in Wa Municipality (Doctoral dissertation, University of Ghana); 2017.
- [28] Ferreira TR, Lopes LC. Analysis of analgesic, antipyretic, and nonsteroidal anti-inflammatory drug use in pediatric prescriptions. *J Pediatr*. 2016 ; 92: 81–7.
- [29] Helal RM, Abou-ElWafa HS. Self-medication in

-
- university students from the city of Mansoura, Egypt. *Journal of environmental and public health*. 2017; 2017:1–7.
- [30] Burnam–Fink M. Making better students: ADHD in higher education and the biopolitics of stimulant medication (Doctoral dissertation, Arizona State University); 2016.
- [31] Gupta S, Singh M. Self–medication among North Indian first–year undergraduate healthcare students: A questionnaire–based study. *J Med Res*. 2016; 19: 162–7.