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RESEARCH

Self-prescription practices by Nigerian medical doctors

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Background: Self-prescription by physicians is a form of self-care that has generated considerable controversy in recent years. The prevalence of self-prescription practices by physicians has been widely studied in North America, Europe and Asia. Few studies on physician self-prescribing and prescribing for family members have been carried out in Nigeria. The primary aim of this study was to investigate the prevalence of self-prescription by medical doctors in Nigeria.
Method: The study was carried out on medical doctors working in two public sector tertiary healthcare facilities in Nigeria; the Federal Medical Centre, Ido-Ekiti, and the University of Ilorin Teaching Hospital, Ilorin. This was a questionnaire-based, cross-sectional survey of different categories of medical doctor working in two healthcare institutions. A semi-structured questionnaire was used to collect demographic data on the respondents, self-prescription practices, prescribing for family and friends, reasons for self-prescription and the type of medications usually prescribed.
Results: One hundred and thirty-two doctors were enrolled in the study, giving a response rate of 53.0%. One hundred and twenty-seven respondents (96.2%) usually prescribed medications for themselves, 87 (91.6%) prescribed for their spouses and 72 (80.0%) for their children. One hundred and seventeen (89.3%) of the medical doctors had prescribed by telephone, 92 (70.8%) had informally asked colleagues for a prescription, while 80.9% of them had refused to prescribe for family members mostly because of the need for a physical examination (68.2%). Seventy-six respondents (61.3%) were of the opinion that self-prescription and prescription for family members was unethical. Antimalaria drugs, analgesics and antibiotics were the most commonly prescribed drugs.
Conclusion: The findings from the two clinical centres in Nigeria demonstrated that self-prescription by medical doctors was highly prevalent. Appropriate strategies are necessary to curtail this potentially harmful practice. A larger study across all geopolitical regions is needed to fully assess the prevalence of this practice.

Keywords: drug prescription, health-seeking behaviour, medical doctors, Nigeria, self-prescribing, self-treatment

Introduction

Self-prescription is a type of self-care by medical doctors which has generated considerable discussion in the last few decades. The normal practice is for patients to seek medical help when they are ill, but the literature has shown that this does not necessarily apply to physicians who are sick (so called "physician-patients").[1] The results of studies carried out in the UK, Hong Kong and the USA have shown that many doctors prescribe for themselves and their family members.[2–4] Similarly, a study on physicians in Norway revealed that 73% of them had self-prescribed in the preceding three years,[5] while 85% of medical residents prescribed for non-patients in another USA study.[6] Some of the reasons cited in the literature for this practice included time constraints, fear of exposure of lack of medical knowledge, risk of confidentiality breach and convenience.[7,8] The arguments against self-prescription and prescribing for family members included loss of objectivity, especially when dealing with potentially severe clinical conditions, over- or under-diagnosis and over-treatment. While it is generally accepted that physicians may treat acute minor conditions or medical emergencies when their family members or themselves are involved, treating non-emergency severe conditions or chronic conditions is regarded as unethical.[9] Antibiotics and non-narcotic analgesics were the most common self-prescribed drugs by doctors in a Norwegian study.[10] However, there is an increasing trend of opioid and benzodiazepine self-prescription by doctors in the UK, Australia and the USA.[11–13] The use of these dependence-causing drugs by medical doctors is a dangerous practice that could affect their optimal performance, as well as placing themselves and their patients at risk. Indeed in the UK, the number of closed fitness-to-practice cases due to allegations of self-prescribing, self-treatment or informal treatment of family and colleagues increased from 36 in 2010 to 98 in 2012.[14]

Results from studies on self-medication by healthcare workers and medical students in Nigeria have shown that this practice is common.[15,16] However, very few studies on physician self-prescribing and prescribing for family members have been carried out in Nigeria. The primary aim of this study was to investigate the prevalence of self-prescription by medical doctors in two tertiary healthcare facilities in Nigeria, and also to explore the reasons for this type of prescribing behaviour.

Method

Study setting

The study was carried out on medical doctors working in two tertiary healthcare facilities in Nigeria; the Federal Medical Centre, Ido-Ekitim and the University of Ilorin Teaching Hospital, Ilorin. These centres are located in the south-west and north-central regions of Nigeria, respectively; are accredited for postgraduate medical training of medical doctors, and cater for the secondary and tertiary care of the populations in their respective regions. The study included all categories of medical doctors, i.e. house officers (interns), medical officers, resident doctors (registrars and senior registrars) and consultants. For the sake of clarity, the medical officers were post-internship doctors who were yet to commence residency training.

Sample size

The following assumptions were used to calculate the sample size. The acceptable margin of error was 5%, with a standard devation of 1.96 at 95% confidence interval and a prevalence rate of 50%. The calculated sample size was 384 doctors. The population of doctors working in the hospital was 550. However, since this sample size exceeded 5% of the target population (550 x 0.05 = 28), Cochran's correction formula was used to calculate the minimum sample size. These calculations are as follows: $n = 384/(1 \pm 384/550)$.

A sample size of 226 was estimated. We anticipated a participation rate of 90%, and the final sample size was increased to 249. The estimated sample size was distributed proportionally based on the total number of physicians in the participating centres.

Sampling method

Convenience sampling was employed when selecting participants for the study.

Doctors who participated in the pretesting of the survey instrument, as well as those who declined to participate in the study or failed to complete or return the questionnaire were excluded from the study.

Survey instrument

The questionnaire consisted of open-ended, close-ended and multiple response items, and was developed for the purpose of this study. It was pretested on 10 medical doctors at the Ekiti State University Teaching Hospital, Ado-Ekiti, another tertiary care facility in the south-west region. Appropriate corrections were made before it was administered. The questionnaires were distributed to respondents through the chief residents of the various departments and were administered during one of their departmental activities (seminar or grand round). Respondents were given 30 minutes to complete and return the questionnaire, after which they rejoined the researchers. The questionnaire, in addition to the demographic data on the respondents, included sections on the practice of self-prescription, prescribing for family and friends, reasons for self-prescription and the type of medications usually prescribed.

Data entry and analysis

The information obtained from the questionnaire was coded, entered and analysed using IBM SPSS® version 19. Analysis was carried out using descriptive statistics to obtain the general characteristics of the study participants. The chi-square test was used to determine the level of significance of groups of categorical variables. A p -value of less than 0.05 was considered to be significant.

Ethical consideration

Ethical approval was obtained from the Research Ethics Committee of the Federal Medical Centre, Ido-Ekiti, before commencement of the study.

Results

One hundred and thirty-two questionnaires were returned by the participants, giving a response rate of 53.0%. Of the respondents, 99 (76.2%) were males. Resident doctors (registrars and senior registrars) constituted the largest proportion (62.9%) according to their designation. The detailed distribution of the respondents by marital status, designation and medical specialties is shown in Table 1.

One hundred and twenty-seven respondents (96.2%) reported that they usually prescribed medications for themselves, 87 (91.6%) of the married participants for their spouses, and 72 (80%) for their children. The majority (93.9%) of the doctors routinely prescribed for other family members, while 96 (73.8%) had prescribed for people not physically seen by them. One hundred and seventeen (89.3%) of the medical doctors had prescribed telephonically, 92 (70.8%) had informally asked colleagues for a prescription, and 80.9% had refused to prescribe for family members. Reasons for refusing to prescribe included the need for a physical examination (68.2%) and having inadequate medical information to make a diagnosis (22.4%). The complete list of reasons given is detailed in Table 2.

Seventy-six respondents (61.3%) were of the opinion that self-prescription and prescription for family members was unethical. Only 41 respondents had some idea of the ethical issues relating to the practice of self-prescription and prescription for family members. Ethical issues cited by respondents included lack of objectivity, having no documentation, the risk of over- or under-treatment, and the inability to conduct a physical examination before prescribing. Antimalaria drugs, analgesics and antibiotics were the most commonly drugs prescribed by respondents. Details of the prescribed drugs are listed in Figure 1.

The respondents practised self-prescription because it reduced the cost of treatment (33.3%), saved time (37.8%), they felt that they could not refuse the requests (40.5%) and because the ailments were minor (75.7%).

Cross-tabulation of the respondents' designation, practice of self-prescription and knowledge of ethical issues relating to such practice showed that there was a significant association between

Table 1: Characteristics of the respondents

	Frequency (*n*)	Percentage
Designation		
House officers	37	28 .0
Medical officers	9	6.8
Registrars	66	50 .0
Senior registrars	17	12.9
Consultants	3	2.3
Total	**132**	**100.0**
Marital status		
Married	95	72.0
Single	37	28.0
With children	90	68.2
Without children	42	31.8
Medical specialty		
Internal medicine	28	37.3
Surgery	13	17.3
Family medicine	12	16.0
Paediatrics	8	10.7
Obstetrics/gynaecology	4	5.3
Other	10	13.3
Duration of medical practice (years)		
0–5	77	72.6
5–10	26	24.5
> 10	3	2.8

Table 2: Reasons for refusing to prescribe

Reasons	Frequency	Percentage*
Need for a physical examination	73	68.2
Outside the specialty of doctor	38	35.5
Need for own physician	30	28.0
Ethical concerns	26	24.3
Inadequate medical information	24	22.4
Conflict of interest	16	15.0

*Percentage score may be more than 100 because of multiple responses

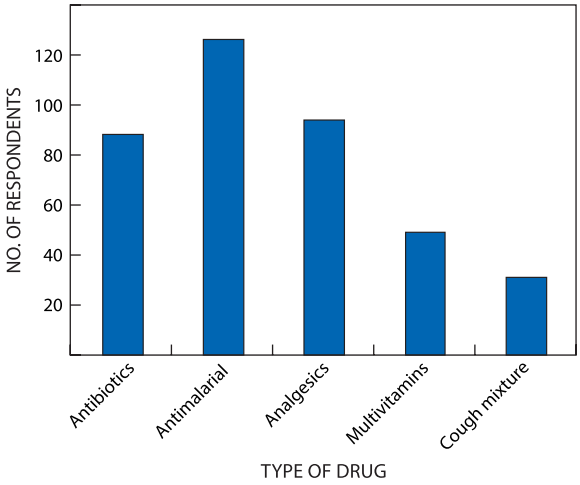

Figure 1: Common self-prescribed drugs

the sex of the respondents and prescription for spouses, children and other family members. The designation, practice of self-prescription and knowledge of ethical issues relating to the practice did not carry any statistically significant difference ($p = 0.293$ and $p = 0.251$, respectively). Details of cross-tabulation of the respondents' designation, sex and duration of practice by other prescribing variables can be seen in Table 3.

Discussion

The practice of self-prescription by our study respondents was significantly higher than that found with respect to physicians in Hong Kong (62%) and residents in the USA (52%).[3,4] It was found in a study on general practitioners in the UK that 84% of medications taken by them in the previous five years were self-prescribed.[17] It was revealed in an Irish study that up to 92% of general practitioners also practised this form of self-care.[18] Self-prescription was also described by medical students in several studies.[19,20] This practice by medical students is worrisome as it portends an unhealthy trend for future practitioners. In our study, 91.6% and 80% of married respondents prescribed for their spouses and children, respectively. These results are comparable with findings of an American study according to which 80% of neurologists had treated family members for minor illnesses.[21] A high level of informal care with respect to family members and friends has also been reported in many other studies.[22,23] While there are regulations in the UK, Canada and USA against self-prescription and treatment for family members,[24–26] there are no clear-cut rules on prescribing for colleagues and co-workers in our setting. It was shown in a study on USA paediatricians that almost half of them had informally asked colleagues for a prescription, while 68% of respondents in another study reported being asked for a prescription by fellow colleagues.[27,28] These results are comparable to the 70.8% reported in our study, and show that the health-seeking behaviour of physicians in different parts of the world does not differ significantly. It was shown in another study on medical students that one third had informally requested prescriptions from faculty or house staff, adding credence to the earlier noted trend with respect to "future" physicians.[29] A significant number of the respondents admitted to having prescribed drugs telephonically for people not seen or examined by them. This practice is fraught with potential risks both for the patient and prescriber. The symptoms described by the patient on the phone may not be detailed enough, or may even camouflage a more severe illness. Also, prescribing for a patient not seen or examined could lead to misdiagnosis and the wrong treatment potentially. Physicians prescribed telephonically, mainly for non-clinical reasons in a study in Denmark, while a USA study revealed the consequences of mistakes made by physicians following telephonic consultations and prescriptions.[30,31]

Table 3: Cross-tabulation of designation and sex of respondents and prescribing variables

Cross-tabulated variables	*p-value*
Self-prescription and sex	0.387
Self-prescription and designation	0.387
Self-prescription and duration of practice	0.905
Prescription for spouse and sex	0.002*
Prescription for spouse and designation	0.083
Prescription for spouse and duration of practice	0.168
Prescription for children and sex	< 0.001*
Prescription for children and designation	0.640
Prescription for children and duration of practice	0.366
Prescription for other family members and sex	0.037*
Prescription for other family members and designation	0.457
Prescription for other family members and duration of practice	0.239
Prescribing by phone and sex	0.442
Prescribing by phone and position	0.313
Prescription by phone and duration of practice	0.414

*: Statistically significant

The acceptance or otherwise of self-prescription and treatment of family members has long been a controversial issue. The majority (90%) of respondents in an Australian study felt that it was acceptable in cases in which the condition was acute,[32] while in another study, 33% agreed to treat family members for chronic conditions.[21] 39.2% of medical students felt that it was appropriate to self-prescribe.[19] Our study revealed that antimalaria drugs, analgesics and antibiotics were the most prescribed medications by doctors, in that order. Antibiotics (71–81%), contraceptives (24–25%), analgesics (18–21%) and hypnotics (9–12%) were the most prescribed drugs in a Norwegian study.[10] The choice of antimalaria drugs as the most prescribed was not surprising as Nigeria is located in a malaria-endemic region and most people with febrile illnesses are treated for malaria. The high prevalence of antibiotic self-prescription reflects the widespread non-rational use of antimicrobial agents in society, with its attendant consequences. The risk of abuse of controlled drugs, such as benzodiazepines and opiates, is one of the major arguments against physician self-prescription. Studies from the USA and India have shown that addiction to benzodiazepines and opiates is a major problem in medical doctors, with most of

them prescribing for themselves.[33,34] The fact that drugs with addiction potential, like benzodiazepines and opiates, were not among those indicated by respondents in our study may not reflect the real situation, as this is a very sensitive issue which many people may not wish to disclose.

The reasons highlighted by respondents for self-prescription were similar to those cited in several self-medication studies on medical students in India and Pakistan.[35,36] This suggests that self-prescription and self-medication practices may be "two sides of the same coin". Some studies have indicated that medical doctors without personal physicians or general practitioners have promoted the practice of self-prescription.[1,3] However, another study revealed that 30% of physicians with general practitioners had not visited them in the previous five years.[37]

The general perception with respect to many studies is that while self-prescription may be acceptable for acute emergencies and minor ailments, it is generally unaccepted and unethical when dealing with serious conditions. Most of the respondents in our study were unaware of the ethical issues surrounding self-prescription. This is not surprising as a recent study demonstrated that the training of Nigerian medical doctors on medical ethics was grossly inadequate.[38] In another study carried out on residents in the USA, only 14% of them were aware of ethical guidelines regarding the practice of self-prescription.[6] Collectively, ethical issues regarding self-prescription and prescription for family members contribute to a suboptimal standard of care, with potentially negative outcomes. Lack of objectivity in making a diagnosis and instituting treatment is a major ethical dilemma when treating oneself or one's close relatives as it can lead to over- or under-treatment, or even treating the wrong disease.[39] When prescribing for close relatives and colleagues, vital information may be necessary for an accurate diagnosis to be made, or may influence the correct choice of medications which may not be disclosed owing to confidentiality and stigma issues.[27] Also, family members and close relatives may not be able to seek another opinion or raise objections to the treatment offered by the physician. The lack of opportunity to examine the "patient" properly and the absence of proper documentation with respect to the encounter are also issues with ethico-legal implications for the prescriber.[22] The threat of medical malpractice is very likely in these situations, especially when the consultation takes place in an informal setting as most insurance companies only cover for malpractice in a formal setting.[40] The possible negative impact of self-prescription on the health and performance of medical doctors has led to the development of guidelines by professional regulatory bodies in the UK and Canada.[41,42] However, studies have shown that these guidelines are not usually followed by medical doctors, leading to various forms of sanction by the regulatory authorities.[2,14]

A limitation of the study included the inherent associations of a self-administered questionnaire, i.e. bias in answering the questions and accuracy of the recall of the information. Also, respondents might have avoided answering some of the questions because of confidentiality issues. All of these could have affected the results of this study and its interpretation to an extent. The fact that the study was carried out in only two healthcare facilities in Nigeria our findings may not be representative of the whole country. However, conducting the study in two geopolitical regions in the country and the involvement of various cadres of medical doctors could mean that this work is relevant.

Conclusion

Prescribing for self, family members and non-patients was very prominent by medical doctors in two tertiary healthcare facilities in Nigeria. In view of the potential adverse consequences of this practice, there is a need for medical practitioners to consult their own general practitioners and to encourage their relatives to seek proper medical care. A larger study across all geopolitical regions is needed to fully assess the prevalence of this practice.

Conflict of interest — The authors declare that they have no financial or personal relationships which may have inappropriately influenced them in writing this paper.

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