Acta Scientific Women's Health (ISSN: 2582-3205)

Volume 5 Issue 2 February 2023

Research Article

Self-Medication Among Students in Higher Institutions in Yaounde, Cameroon: Risk-Benefit Analysis

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DOI: 10.31080/ASWH.20223.05.0464

Received: November 02, 2022

Published: January 10, 2023

Abstract

Introduction: Self-medication remains a global public health concern, with many risks and benefits. This cross-sectional study seeks to analyse these potential good and bad sides and provide a balance where the negative impacts are reduced in the interest of population health.

Methodology: A pilot-tested, validated questionnaire was administered to participants. Data were collected and analysed using Microsoft Excel 2010 and the results expressed as counts and percentages, pie chart and histogram.

Results: Five hundred and fifty (550) questionnaires were administered, and 470 respondents filled correctly (85.45% participation rate). 57.0% of the respondents were undergraduate students, while 38.7% were within the age range 16 - 20 years. Self-medication practice was found to be high among students in higher institutions as shown by a prevalence of 80.6%. Of the 470 respondents, 240 (51.1%) said self-medication practice is good as opposed to 35.3% who disagreed, respectively stating benefits and risks. Drug resistance, treatment complication and disease recurrence emerged as major risks of self-medication (22.98%, 21.70% and 18.09% respectively). Other risks included increased mortality, no drug regulation, disorder, and organ damage. Potential benefits included treatment effectiveness (20.85%), cost-effectiveness (20.21%), time-saving (16.80%), availability (16.60%) and accessibility (11.06%). Economic growth and reduced Disability-adjusted life years (DALYs) were also considered to be beneficial.

Discussion and Conclusion: The prevalence of self-medication remains high, especially in low resource settings. This study showed that a majority of students of higher institutions favour self-medication. However, this practice needs to be kept under control to reduce the risks and maximize the benefits, towards ensuring population health.

Keywords: Self-medication; Self-Treatment; Risks; Benefits; Analysis

Abbreviations

sLMICs: Low-Income Countries; MoH: Ministry of Health; OTC: Over-the-Counter; SM: Self-medication; SPSS: Statistical Package for the Social Sciences; ST: Self-treatment; WHO: World Health Organization

Introduction

Self-medication (SM) or self-treatment (ST) remains a global public health concern and constitutes a form of self-care and is practiced in many countries, including Australia, Argentina, Canada, Germany, India, United Kingdom and many low-income countries (LMICs). Depending on the target population and country, the global prevalence rate of SM ranges from 11.2% to 93.7% [1].

The World Health Organization (WHO) appreciated the crucial role played by SM in curing disorders [2]. This led to the approval of the switch of some medications from prescription to non-prescription status for sale as over-the-counter (OTC) drugs

in the 1980s [3,4], thereby contributing to increased prevalence of SM [4,5]**.** Products used for SM are those which do not require medical prescription and which are produced, distributed and sold to consumers to use on their own initiative. The increasing role of some governments at encouraging selfcare of minor illnesses [3,6,7] has equally been a contributing factor to increased prevalence of SM [8,9].

Despite the many adverse health reactions or fatalities associated with SMs [8,10,11], the practice is on the rise [10,12-15]. The prevalence of ST is higher in Africa compared to other countries [16], with significantly high levels in Egypt in 1995 [5,14] and Cameroon, Sudan and Nigeria [14,17]. With a high disease burden and amidst low resources, many Africans have a preference for traditional medicine as their first response to illness [10,14,18]. The practice of traditional medicine is approved in many African countries [19], but with little regulatory control [14,18,20]. Although SM is a common practice globally, it is guided in developed countries because people are enlightened and have several sources from which they can derive adequate information [21]. There is evidence to suggest that many people who self-medicate tend to obtain knowledge of the practice from relatives, neighbours, medicine dealers, and sometimes media [21]. However, poor medical services and lack of professional control of pharmaceutical products in low- middle income countries make the situation preoccupying [10,12,21].

Self-medication has become widely accepted to play an important role in the health care system [1]. Success stories with SM (use of OTC medicines) has been reported among children in the Kenyan coast, and Togo [4,22], and with anti-malarial drugs in Tanzania [13]. The prevalence of SM is highest among OTC medicines [3,10], with [14,15] reporting paracetamol or acetaminophen as the most commonly used.

Although SM has recorded successes, many adverse health reactions [8], or fatalities associated with this practice such as drug resistance, organ toxicity, addiction and wrong doses, have been recorded [6,10,11,13-15].

Unlike in conventional sources of medications like pharmacies, medicines for self-medication are found in almost every location in many towns across Africa, making it accessible [5,8,11,13,23,24]. The quest for quick relief, lack of time to consult, long waiting time, and poverty are among the reasons why SM is often the first option for minor illnesses [3,16,25]. Social factors such as poverty, cultural perception of certain diseases and their perceived responses to indigenous medications have been widely reported in LMICs as risk factors [21].

With these benefits and risks, which seem to conflict, there is need for a careful analysis to establish a balance that would reduce the harm and increase the gains, with human health as priority. This study is a critical analysis of the risks and benefits of self-medication and how a central point can be established to maximize the benefits.

Materials and Methods

Study design and population

This cross-sectional study was carried out in two professional higher institutions (one state-owned and one private university) in Yaounde, Cameroon. While all selected institutions had students at both undergraduate and masters levels, only the state university had students at the doctorate level. Selected higher institutions were within Yaounde IV and VI sub-Divisions, chosen due to convenience and accessibility to participating institutions. Yaounde is Cameroon's political capital with an estimated population of 2.8 million. The city is seat to all political and major academic institutions, with a population from varied economic, social and cultural backgrounds. The study population involved students at both undergraduate, masters and doctorate degree levels. Both males and females greater than or equal to 16 years were targeted as respondents. Convenience sampling method was used to select participants this study.

Study questionnaire

Pre-validated close-ended, self-developed questionnaires were used to collect data for this study. Questions on demography, prevalence of SM among students, impression about SM and risks and benefits of SM were asked. Questions involved checking boxes with a "yes", "no" or "not sure" response. Pilot testing to check for face validity and modify questionnaire was done. Only the fully completed questionnaires were considered for final analysis. After getting authorisation and clearance from the Divisional Delegation of Public Health, in collaboration with the national ethics committee, a briefing on study objectives, methodology, data management, rights as participants, and guidelines on how to fill

the questionnaire was held. Assurance of protection, confidentiality and anonymous treatment of data was given. Possible benefits and risks of the study were explained to the participants, with rights to withdraw at any point or avoid answering questions they do not feel comfortable about. Written consent was obtained using a signed consent form and only those who accepted were allowed to participate.

Statistical analysis

Data collected were analysed using Statistical Package for the Social Sciences (SPSS) version 21.0 and expressed as counts and percentages in tables, pie and bar charts.

Results and Discussion

Respondent demographics

Out of the 550 questionnaires administered, a total of 470 were correctly filled by 320 female respondents and 150 males, giving a total of 85.45% participation rate. As shown in table 1, majority of the respondents (57.0%) were undergraduate students while the highest number of participants (38.7%) was within the age range 16 - 20 years.

Gender	Number (N)	Percentage (%)	Age (Years)	Number (N)	Percentage (%)
Male	150	31.9	16 - 20	182	38.7
Female	320	68.1	21 - 25	131	27.9
Total	470	100	26 - 30	95	20.2
Education			31 - 35	46	9.8
Undergraduate	268	57.0	36+	16	3.4
Masters	120	25.5	Total	470	100
Doctorate	64	13.6			
Other	18	3.9			
Total	470	100			

Table 1: Demographic information.

Sex	Yes (N)	%	No (N)	%	Not sure (N)	%
Male	111	23.6	30	6.4	9	1.9
Female	268	57	38	8.1	14	3
Total	379	80.6	68	14.5	23	4.9

Table 2: Number of Students who practice SM.

Sex	Yes (N)	%	No (N)	%	Not sure (N)	%
Male	68	14.5	54	11.5	28	6
Female	172	36.6	112	23.8	36	7.6
Total	240	51.1	166	35.3	64	13.6

Table 3: Students' Impression about SM as Good Practice.

The benefits of self-medication

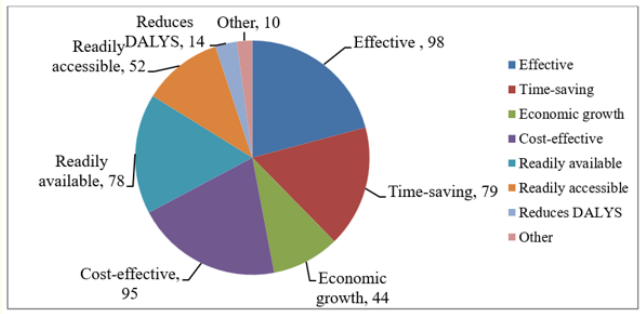

Figure 1: The Benefits of Self-Medication.

Risks of self-medication

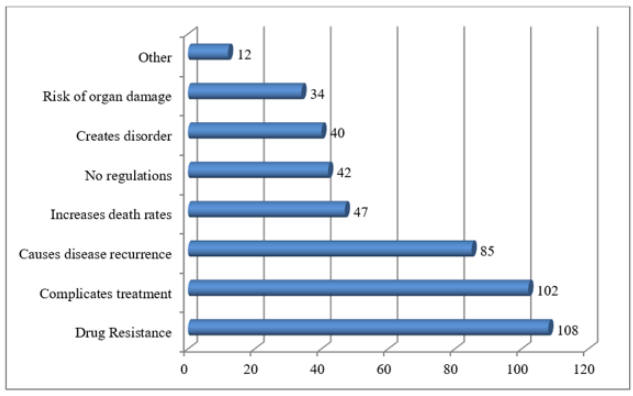

Figure 2: Risks of Self-Medication (SM).

Five hundred and fifty (550) questionnaires were administered, and 470 were correctly filled (85.45% participation rate). A majority of the respondents (57.0%) were undergraduate students, with 38.7% being within the age range 16 - 20 years. A total of 379/470 (80.6%) self-medicate, indicative of a high prevalence of SM among students of higher institutions in Cameroon, supported by [3,10,12-15]. Africa tops the list in terms of SM practices, highly compounded by unregulated traditional medicine sector [5,14,16,17]. The switch of some medications from prescription to non-prescription (over-the-counter or OTC) status by the World Health Organisation (WHO) lent credibility to this practice and greatly contributed to increase prevalence of SM, even of prescription medicines [4,5]**.** This decision has been supported by the idea that professional care is not necessary for minor ailments [3]. Of the 470 respondents, 240 (51.1%) were of the opinion that self-medication practice is good while 166 (35.3%) were opposed to the idea. The 51.1% who supported self-medication backed their standpoint with the benefits while those who opposed (35.3%) stated the negative consequences.

Risks analysis of self-medications

Out of the total of 470 respondents, 108 (22.98%) and 102 (21.70%) respectively pointed drug resistance and treatment complication as potential risks posed by SM practice. [8,10,11,14,16,18,26] supported this finding by citing antibiotic resistance and temporary masking of disease with potential to increase treatment duration [6]. Organ toxicity, addiction and wrong doses are equally deadly consequences of SM [6,13,15]. Also, self-prescribers rarely receive information on how to use a prescription medicine [13], with potential for overdose of paracetamol and analgesics leading to organ damage (fetus and mothers) [16,21]. Negative side-effects of SM could become emergencies in the event of toxicity, drug reaction and anaphylactic shock [16]. Misdiagnosis, overdose, prolonged duration of use, drug interactions and polypharmacy equally pose negative impacts [8,18,27].

Delay in looking for a definitive solution can cause disease recurrence as supported by 85 (18.10%) of the respondents in this study [8,18,27,28]. list misdiagnosis, ingesting toxic drug doses, long-term use of drug interactions and complications, and polypharmacy as risks associated with SM. This study also reveals increase mortality (10.0%) as one of the risk factors of SM resulting from failure to treat a disease, leading to worsening patient's health condition, with [28] lending support to the findings. Promotional messages through the media and the internet seem to support safety with SM [20]. Inappropriate practice of SM through poor use of OTC medicines or non-prescription medications or using prescription drugs without professional advice is considered unsafe and could potentially harm the individual and the healthcare system [3,10,16,28]. Lack of regulations in the pharmaceutical sector can promote anarchy, creates complete disorder and an enabling environment for SM to thrive [9,29], supported by this study (8.50% for disorder and 8.90% for no regulation). ST exposes users to medicines which may have been banned from the market or have expired, posing great risks [16].

Benefit analysis of self-medications

The healthcare system widely considers SM as a critical component because like physical exercise and healthy nutrition in self-care, [7] its aim is to treat a disease condition and maintain the health and wellbeing of individuals [2,26,28]. This statement is supported by findings in this study, with 98 (20.85%) stating that SM is effective in treating diseases. [8,18] further highlight increased access to medication, relief for the patient, the active role of the patient in his or her own health care (evidence-based medicine), better use of physicians and pharmacists skills and reduced (or at least optimized) burden of governments due to health expenditure linked to the treatment of minor health conditions [3].

If practiced responsibly, ST has the tendency to increase access to medication, which is a necessary step in promoting universal health coverage [8,10,18,24], backed by 52 (11.06%) of respondents in this study. It takes medical services closer to remote areas that are otherwise not accessible by formal medical health services. As shown by 78 (16.60%) of respondents, SM drugs are readily available and can facilitate distribution of pharmaceutical products.

According to this study 95 (20.20%) of the respondents stated reduced cost of treatment**.** This reduces costs on publicly funded health programmes [7,8,27], and government expenditure on health care and direct health workers attention to emergencies [6,16]**.** SM reduces costs associated with consultation and laboratory tests, thereby reducing out-of-pocket expenditures [7,8,20,28].

This study shows that 98 (20.85%) of the respondents were of the opinion that SM is effective as supported by the [20]. It prevents and treats symptoms and ailments that do not require the attention of a medical doctor [3,16,26]. A higher number of children in the Kenyan coast, and Togo were treated at home with drugs obtained from a street or market vendor [4,22]. In the event of an emergency, SM can offer quick and life-saving relief and sustain life prior to evacuation to a hospital [16]. This reduces pressure on medical services, especially human, material and financial resources are limited.

Of the 470 respondents, 79 (16.81%) considered ST as time-saving. By self-treating minor health conditions at home [3], SM limits the number of visits to hospitals, and reduces waiting time during consultation [16,23,25,28]. SM contributes in filling the gap in health human resource by reducing doctor-to-patient ratio and access to health care in deprived communities [7,16].

ST offers economic improvement and greater independence in decision-making for both the patient and the medicine vendor [16] by helping them respectively save or make money [27]. This is backed by 44 (9.36%) of the respondents attributing economic growth to ST.

Conclusion

Considering the conflicts between the risks and benefits of SM [2,8], there is need to promote self-care through healthy nutrition, water therapy and regular exercise [7]. Also, governments need to regulate SM by mandating user instructions for every safe drug for proper usage [9,20,29]. There is a need integrate SM into the health care to maintain control. A monitoring system, partnership between patients, physicians and pharmacists and the provision of education and information concerned on the risks and benefits SM to all [1,8,16,20,26,27]. Legal instruments should be used to dissuade and punish drug regulatory and health authorities [8,16] who fail to implement WHO's decision on medicine reclassification from prescription to non-prescription [8,16]. It is obvious that self-medication will continue, especially in low resource settings, requiring continuous control to ensure safe use and guarantee human health.

Acknowledgements

Sincere thanks to the Integrated Health for All Foundation, Cameroon for endorsing and supporting this piece of work.

Conflict of Interest

There are no conflicts of interest about this research.

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