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Research Article

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Factors Influencing Self-Medication Behavior Among Adults in the Ashaiman Municipal District, Greater Accra, Ghana

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Abstract

Self-medication is defined as a human behavior, in which an individual uses a substance or any exogenous influence to self-administer treatment for physical or psychological ailments. Self-medication is prevalent among adults in the Ashaiman Municipal District, Ghana. This cross-sectional study, conducted from September 28 to October 10, 2020, aimed to identify the factors influencing self-medication practices among adults in this community. Data were collected from 161 participants through structured and interviewer-administered questionnaires. The study found that 66.5% of participants used analgesics, 28.6% used antibiotics, and 32.9% used antimalarials for self-medication. The primary reasons for self-medication included perceived mildness of the condition (38.8%), time-saving (36.3%), and cost-effectiveness (22.5%). While the majority of respondents (88.1%) were aware of the risks associated with self-medication, such as incorrect dosage and drug dependency, the practice remains widespread. The findings highlight the need for public health education and stronger regulation of over-the-counter medication sales to mitigate the potential dangers of self-medication.

Keywords: Self-Medication, Drug Misuse, Ashaiman Municipality, Over-the-Counter Medications, Healthcare-Seeking Behavior, Public Health, Antibiotics Resistance, Health Education, Cross-Sectional Study, Ghana

1. Introduction

The instinct of general well-being is a common desire among humans; hence, all the necessary steps to achieve and maintain this state are principal. Self-medication is the most common method for achieving the above. It is practiced globally, but especially in developing countries [1,2].Self-medication is defined as a human behavior, in which an individual uses a substance or any exogenous influence to self-administer treatment for physical or psychological ailments [3]. It is also defined as the "use of medication without prescription, medical guidance or follow-up" in simpler terms [2]. Globally, SM is a public health issue with prevalence ranging from 11.7% to 92% [4,5]. In Africa, the median prevalence of self-medication is estimated to be 55.7% and 70.1% in West Africa. WHO also estimates that 20%–50% of all antibiotics in LMICs are inappropriately used [6,7]. Self-medication can have positive or negative effects on the individual and the healthcare system. This is dependent on whether it was practiced correctly or wrongly with adequate or inadequate information on usage [8].When practiced correctly, self-medication helps patients to be responsible for their health and also be aware of any health changes developing in their bodies. It can also be very beneficial in emergency settings such as one developing an asthmatic attack and getting a salbutamol inhaler from the nearest pharmacy rather than driving several miles to the hospital. Moreover, it can also help save time in waiting to see a doctor [5,6].

WHO stated in the article, *the role of the pharmacist in self-care and self-medication* that, self-medication can be used responsibly to treat certain conditions that don't require immediate consultation and help save cost and reduce the burden on the national health budget. This is due to the growing empowerment from improved education and wide access to information together with increased individual interest in personal health. However, the individual must be aware of the benefits and risks associated with the above practice and take responsibility. Regardless of the above benefits of self-medication, when practiced wrongly, there are associated risks such as microbial resistance, drug-drug interactions, severe adverse reactions, wrong self-diagnosis, wrong dosage, drug abuse, dependency and delay in seeking medical care [9-11]. Several researches have been done on self-medication in different settings around the world and it turns out that, Self-medication is influenced by factors such as age, gender, level of education, perception of illness, knowledge of pharmaceutical products (effects and risks), income and expenditure, previous experiences with medications and or hospital system. It has been found that a high level of education and professional status is a predictive factor for self-medication. Some channels through which individuals get introduced to self-medication are the internet, radio, television, friends, relatives and previous prescriptions.

Medications mostly used for self-medication are analgesics, antibiotics, antimalarial, anthelminthic and herbals [12-14]. Another study identified occupation and religion to be factors associated with self-medication. However, no strong association was identified for gender and marital status [15].

The increasing level of self-medication habit and misuse of drugs without prescription among inhabitants of the Ashaiman Municipal District is very alarming. Advertisements of pharmaceutical products on radio stations, television channels, street hawkers and social media is on the increase, posing great danger to this population.

From my experience working in the pharmacy for quite some time, I realized a reasonable sample of this population misuses the drugs for purposes that are not the indications for the use of the drug. Some also use the drugs to prepare concoctions to either make them feel high or drowsy. Others go for self-medication based on advice from friends and or relatives and also from advertisements on radio and television. This arouses concern of wrong self-diagnosis, severe adverse reactions and use of drugs for purposes other than indicated. In this study, I would like to know if this population is aware of the dangers associated with self-medication and why most people will choose self-medication over going to the hospital and also what they will do if something goes wrong with their choice of self-care.

1.1. General Objective

To determine factors influencing self-medication among adults in the Ashaiman Municipal District

1.2. Specific Objectives

- To determine commonly used drugs for self-medication.
- To determine the reason for self-medication behavior.
- To assess knowledge on the dangers associated with self-medication.

1.3. Basic Assumptions

- All those interviewed clearly understood the questionnaire.
- All answers given were a true reflection of what the study planned to achieve.
- All adults interviewed about the factors influencing self-medication are residents of the Ashaiman Municipal District and hereby form a representative sample of this population.
- Information obtained from the respondents is a true reflection of what goes on in the community.
- The sample size is a true representation of the whole community.

2. Methodology

2.1. Study Type

This study is a cross-sectional study conducted from September 28 to October 10, 2020. Data was collected via interviewer-administered questionnaires. The interview was done in English, Ewe and Twi. The questionnaire was pre-tested in a small community in the Ashaiman municipal district called Jericho, to test for clarity and level of ease in filling of the questionnaire.

2.2. Study Population

The study population was made up of adults in the Ashaiman municipality, 18 years old and above who have practiced Self-medication at least once in their lifetime. A sample size of 161 adults was used due to limited time in the district rotation. There were 69 male respondents and 92 female respondents. Any individual in the Ashaiman municipal district who has practiced SM at least once in their life, also above 18 years of age were included while anyone below 18 years, not practiced SM at least once or not in the Ashaiman Municipality were excluded from the study.

2.3. Sampling Method

A simple random sampling method was used. Several towns and small areas in the Ashaiman municipality were covered randomly. Interviwer-administered questionnaires were administered at various pharmacies and OTC medicine shops to individuals trooping in for medications. An interview was done in English, Ewe and Twi to assist participants who could not fill the questionnaire on their own. Some areas in the Ashaiman municipality that were covered include: Ashaiman main market, Jericho, Asensu, Mexico, Zone 1, Kaketo, Night market and other smaller areas. Participants were mostly contacted at different pharmacies and chemical shops in the various zones in the municipality. Participants were assisted by the interviewer to complete their questionnaire.

Sample size calculation

$$n = \frac{N}{1 + Ne^2}$$

Where n= desired sample size
N= population size
e= error margin of 0.08 (confidence level of 92%)
Therefore:

$$n = \frac{131161}{1 + 131161 \times (0.08)^2} = 156.06$$

Hence, with a confidence interval of 92% from calculation sample size is approximately 156 therefore is used 161 respondents.

2.4. Data Collection Technique and Tools

A pre-tested structured questionnaire was used for data collection. A sample of people from the Ashaiman municipality were given a few of the questionnaires to fill out after which the level of ease was assessed and the necessary changes were made before a final print out was made for the study population. The questionnaire consisted of open-ended and close-ended questions and under some sections more than one response was allowed for some specific questions.

2.5. Data Analysis

The data was analyzed both manually and by use of computer software known as SPSS and Microsoft Excel. Results were represented by tables and charts.

2.6. Ethical Consideration

The need for ethical approval was waived off by the ethical committee of the Kwame Nkrumah University of Science and Technology, School of Medicine and Dentistry due to the nature of this study, as it does not pose any risk to participants and also since it is part of academic training for the award of an undergraduate degree. Informed consent was obtained from all participants in both written and verbal format where they were briefed on the nature of the study and told that participation was voluntary.

3. Results

3.1. Socio-Demographic Profile

The study saw the participation of 161 respondents who were adults of the age of 18 years and above, in the Ashaiman municipality. One respondent did not fill out their occupational status and also one other respondent did not fill out their level of education. However, the following are the socio-demographic characteristics of the respondents: Approximately, 49.1% in the 21-29 age group, 57.1% of the respondents were females, 58.8% were employed, 63.4% are single and 46.3% graduated SHS. Also, 160 respondents were Ghanaians living in the Ashaiman municipality while 1 respondent was Togolese but stays in the Ashaiman municipality. Below is a tabular representation of the socio-demographic profile of the respondents.

Age (years)	**Frequency (n=161)**	**Percentage (%)**
18-20	18	11.2
21-29	79	49.1
30-39	45	28.0
≥40	19	11.8
Gender		
Male	69	42.9
Female	92	57.1
Occupational Status	**n(160)**	
Employed	94	58.8
Self-employed	42	26.3
Unemployed	24	15.0
Marital Status		
Single	102	63.4
Married	54	33.5
Co-habitation	5	3.1
Level of Education	**N (160)**	
Primary	9	5.6
JHS	14	8.8
SHS	74	46.3
Tertiary	61	38.1
Informal	2	1.3
Nationality		
Ghanaian	160	99.4
Other (Togolese)	1	0.6
Soure: Field Survey, 2020		

Table 1: Socio-demographic characteristics of respondents

Time	**Frequency (n=161)**	**Percentage (%)**
Daily	10	6.2
Weekly	18	11.2
Monthly	52	32.3
Yearly	22	13.7
Once in A While	59	36.6
Source: Field Survey, 2020		

Table 2: Frequency of Self-Medication

Table 2 represents the rate at which the respondents self-medicated. In this research, only individuals who have self-medicated at least once in their lifetime were allowed to participate. From table 2 above, 6.2% practiced SM daily, 11.2% weekly, 32.3% monthly, 13.7 yearly and 36.6% practiced SM once in a while in what they deemed was practiced where necessary.

Medication	Frequency (n=161)	Percentage (%)
Analgesics	107	66.5
Antibiotics	46	28.6
Antimalarials	53	32.9
Anthelminthics	31	19.3
Antacids	13	8.1
Antidiabetics	2	1.2
Herbals	34	21.1
Others	5	3.1

Table 3: Class of Medications Used

Table 3 illustrates the classes of medications used by respondents for SM. From calculations, Approximately, 52.2% use more than one class of medication and 66.5% use analgesics.

Symptom	Frequency (n=158)	Percentage (%)
Headache	87	55.1
Fever	53	33.5
Cold/Catarrh	37	23.4
Body Pains	48	30.4
Cough	8	5.1
Vomiting	6	3.8
Diarrhoea	7	4.4
Others	22	13.9
Source: Field Survey, 2020		

Table 4: Symptom(s) Which Resulted in Use of SM

Table 4 shows the symptoms which resulted in the practice of self-medication. Three (3) participants didn't fill out this part of the questionnaire and hence the above results are based on 158 respondents. From calculations, 55.7% of the respondents practiced SM as a result of experiencing one symptom while 44.3% had more than one symptom. From the table above, 55.1% had headache, 33.5% had fever, 23.4% had cold/catarrh, 30.4% had body pains, 5.1% had cough, 3.8% were vomiting, 4.4% had diarrhea and 13.9% had other symptoms and reasons such as: body itch, eczema, abdominal pains, dizziness, convulsion, body weakness and for preventive reasons.

Source Of Referral/Info.	Frequency (n=160)	Percentage (%)
Friends	36	22.5
Relatives	50	31.3
Previous Prescription	27	16.9
Radio	20	12.5
Internet	13	8.1
OTCMS	57	35.6
Others	12	7.5
Source: Field Survey, 2020		

Table 5: Source of Referral or Information

Table 5. shows the various sources of referral or information that influenced the respondents to self-medicate. One (1) participant did not fill out this portion of the questionnaire hence the above results are based on responses from 160 respondents and the results are as follows: 22.5% from friends, 31.3% from relatives, 16.9% from previous prescriptions, 12.5% from radio, 8.1% from internet and 35.6% was from OTCMS. 7.5% gave other responses such as: "I am a pharmacist", "I am an MCA", and "Myself" as their source of referral or information. From calculation, 75.6% of the respondents gave just one source of referral or information while 25.0% gave more than one source of referral or information that led to SM.

Reason(s) For SM	Frequency (n=160)	Percentage (%)
Cost Effective	36	22.5
Time Saving	58	36.3
Previous Experience	33	20.6
Lack Of Near Health Centre	17	10.6
Dissatisfaction With Hospital System	6	3.8
Simple Disease	62	38.8
Influence From Friends And Relatives	15	9.4
Others	6	3.8
Source: Field Survey, 2020		

Table 6: Reason(s) For Self-Medication Behavior

Table 6. above, shows the various reasons for self-medication behavior given by the respondents. 160 out of 161 participants filled this part of the questionnaire. Out of this, 64.4% chose only one reason behind their self-medication behavior while 35.6% chose more than one reason as participants were allowed to choose a maximum of three options. 22.5% chose cost effectiveness as the reason behind their SM behavior, 36.3% chose time saving, 20.6% chose previous experience, 10.6% chose lack of near health facilities, 3.8% chose dissatisfaction with hospital system, 38.8% chose simple disease (mild condition) and 9.4% chose influence from friends and relatives. Moreover, 3.8% gave other reasons such as: "I don't like the smell at the hospital", "Because I am in the health field", "I have visited the hospital several times but symptoms persist", "Previous prescription", and "Periodic medication to boost my immune system".

Wrong self-diagnosis is a danger associated with SM	**Frequency (n=161)**	**Percentage (%)**
True	144	89.4
False	8	5.0
I don't know	9	5.6
Wrong dosage is a danger associated with SM	**Frequency (n=161)**	**Percentage (%)**
True	150	93.2
False	4	2.5
I don't know	7	4.3
Severe adverse reactions is a danger associated with SM		
True	127	78.9
False	11	6.8
I don't know	23	14.3
Delay in seeking medical care is a danger associated with SM		
True	138	85.7
False	11	6.8
I don't know	12	7.5
Risk of drug abuse/dependency is a danger associated with SM		
True	150	93.2
False	6	3.7
I don't know	5	3.1

Table 7: Knowledge on the Dangers Associated with Self-Medication

Table 7 above represents the level of knowledge of respondents in the dangers associated with self-medication. A few questions were asked to assess the level of knowledge of the 161 participants and the following are the results: 89.4% of the respondents had knowledge on the fact that 'wrong self-diagnosis' was a danger associated with self-medication and 10.6% did not have enough knowledge on that. 93.2% knew that 'wrong dosage' was a danger associated with SM while 6.8% did not. 78.9% knew that 'severe adverse reactions' was a danger associated with Sm while 21.1% did not. 85.7% knew that 'delay in seeking medical care' is a danger associated with SM while 14.3% did not. 93.2% knew that 'risk of drug abuse/dependency' was a danger associated with SM while 6.8% did not. On the average, 88.1% participants have enough knowledge on the dangers associated with SM while 11.9% have less knowledge on dangers associated with SM.

What step(s) will you take when you experience a side effect?	Frequency (n=161)	Percentage (%)
Go to hospital	136	84.5
Stop taking medication	19	11.8
Change medication	2	1.2
Report to person who introduced you to medication	4	2.5
Will you recommend medications to friends/ relatives?	**Frequency (n=156)**	**Percentage (%)**
Yes	102	65.4
No	54	34.6

Table 8: General Knowledge and Attitude on SM

Table 8 represents general knowledge and attitude of participants on SM. From the table above, when asked 'what step you will take when you experience a side effect?', 84.5% chose 'go to the hospital', 11.8% chose 'stop taking medication', 1.2% chose 'change medication' and 2.5% chose 'Report to person who introduced you to medication'. Moreover, when asked "will you recommend self-medication to friends/relatives?" 65.4% chose 'YES' and 34.6% chose 'NO'.

4. Discussion

This study was done to assess the factors influencing self-medication behavior among adults in the Ashaiman municipal assembly hence questionnaires containing both close ended and open ended questions were administered to 161 participants.

4.1. Socio-Demographic Profile

According to this study, most of the people who practiced SM were in the 21-29 years age group [49.1%] followed by the 30-39 years age group [28.0%]. In a study conducted in Nigeria identified a significant association with age (p= 0.021). 63.4% were in the 19-23 years age group [14]. Majority of the participants who practiced SM were employed [58.8%] and a greater proportion were single [63.4%]. Considering the educational level of the study participants, a greater percentage (46.3%) had had secondary school education. This is in congruence with the study conducted by which concluded that a higher level of education was found to be associated with participants' knowledge of adverse reactions. Regardless, both educated and uneducated individuals partake in SM. Another study stated that individuals with higher level of education practiced SM more using OTCMs than POMs [13].

4.2. Frequency of SM

In this study, majority of the participants (36.6%) practiced SM once in a while in what they described as 'only where necessary' followed by 32.3% who practiced SM monthly. This is in line with a study conducted by among tertiary students in Accra. In the study, 30% of the study population practiced SM at 1month intervals [16].

4.3. Class of Medications Used

The most common medications mostly used for SM in this study were analgesics (66.5%); followed by antimalarials (32.9%); antibiotics (28.6%); herbals (21.1%) and anthelminthics (19.3%). This is in congruence with a study conducted in Asmara College of Health Sciences, Asmara, Eritrea, an Eastern African country. In this study, out of 313 participants, 64.6% used analgesics, 40.7% used antipyretics while 25.4% used antibiotics [17]. Similarly, in a study conducted in Meket district, Eastern Ethiopia, out of 435 respondents who had complained about illness in the last one month, 40.79% used analgesics and antipyretics for SM [18]. A study conducted in Brazil concluded that paracetamol amongst other analgesics were the most commonly self-medicated class of drugs [19]. In other similar studies in Nigeria and Mexico, antibiotics came up as the most common self-medicated drugs. This shows that analgesics and especially antibiotics cut across several studies across the world.

4.4. Symptom(s) Which Resulted in Use of SM

In this study, headache (55.1%); fever (33.5%); body pains (30.4%) and cold/catarrh (23.4%) came up as the most common symptoms which lead to SM. In a study conducted in Northeast Ethiopia stated that 30.06% complained of headache and fever [18]. Similarly, Nirma Subashini and Lahiru Udayanga in a study conducted in Sri Lanka in 2020 showed that 61.3% chose fever as the most common symptom which led to SM behavior [12]. This shows that the above mentioned symptoms commonly afflict people and lead them to self-medicate.

4.5. Source of Referral or Information

From the results of this study, we observe that OTCMS (35.6%) are the major sources of referral or information for individuals who practice SM followed by relatives (31.3%); friends (22.5%); previous prescription (16.9%) and radio (12.5%). This study shares similarities with a study conducted in Sri Lanka where out of 546 undergraduates who practiced SM, 77.9% by own previous experience, 68.6% by previous prescriptions of a doctor, 47.9% by pharmacist advice and 45.4% by opinions of family members were the influencers on making decisions for practice of SM [12]. We can observe that people confide in health field workers to get information or seek advice on their SM behavior.

4.6. Reason for Self-Medication Behavior

In this study, the commonest reason behind SM behavior was simple disease or mild condition (38.8%). This shows that the individuals who practice SM see the symptom(s) which led to SM to be mild or simple hence not requiring a physician. Time saving (36.3%), cost effective (22.5%) and previous experience (20.6%) came up second, third and fourth respectively as the reasons

behind SM behavior. This corresponds to the study conducted in Meket district, northeast Ethiopia which saw the participation of 722 participants had the following results: 50.19% perceived their condition to be mild, 13.9% practiced SM due to previous experiences [18]. Similarly, another study conducted in Addis Ababa also stated two main reasons behind SM (1) mild illness (47.4%) and (2) previous knowledge or experience of the drug (23.2%) [20].

4.7. Knowledge on the Dangers Associated with Self-Medication

In this study, few questions were asked to assess the level of knowledge of the participants. And these are to assess if the participants knew that the following were dangers associated with SM:

- Wrong self-diagnosis
- Wrong dosage
- Severe adverse reactions
- Delay in seeking medical care
- Risk of drug abuse/dependency

From the results, majority of the participants identify 'wrong dosage' and 'risk of drug abuse/dependency' (93.2% each) as dangers associated with SM followed by 'wrong self-diagnosis' (89.4%); 'delay in seeking medical care' (85.7%) and 'severe adverse reactions' (78.9%). On the average, 88.1% participants have enough knowledge on the dangers associated with SM. This corresponds to results from several studies across the world. An example is the study conducted in southwestern Nigeria which found that 82.3% of the respondents had high awareness of the dangers associated with SM [21]. It will be safe if people practicing SM had sufficient knowledge about its dose, time of intake and side effects on over-dose [22]. However, the question is if it will be completely safe to allow people to practice SM entirely. According to WHO in 2005, self-medication can help reduce the burden on the medical system and save cost but it is far from being a completely safe practice. Furthermore, 84.5% knew they had to visit the hospital when they experienced any side effects. However, 65.4% of the partakers in SM will recommend SM to friends/relatives.

4.8. Strengths and Limitations

The study was limited to only adults thus age from 18 years and above. Some of the participants were illiterates and hence much time was needed to help them fill the questionnaires. The study is purely descriptive with no inferential statistics conducted which makes the findings a little weak in nature and hence generalizing findings from this research should be done with these limitations in mind.

5. Conclusion

The results show that most people who practice SM are between the ages of 21-29 years followed by 30-39years age group. This refers to the young adult and slightly towards the middle aged group. Also, people who practice SM are mostly employed and have enough funds to support the behavior and they are also averagely educated enough to read and also get information from sources to enhance their SM behavior. Finally, most people who practice SM are single which shows that if they had a partner, it would affect the decisions they take. The results from this study show that people who practice SM usually do it 'once a while' in what they refer to as 'when necessary'. People who practice SM do it when they experience a symptom and mostly stop when the symptoms subside. This shows that most people who practice SM don't follow the full course of treatment leading to microbial resistance. Analgesics, antimalarials, antibiotics, herbals and anthelminthics are the most commonly used classes of medications for SM in the Ashaiman Municipality. This goes to explain the exceeding increase in advertisement of such products on television, radio, internet, social media and the like. People practice SM in the Ashaiman Municipality because of the following symptoms: Headache>Fever>Body pains>Cold/Catarrh. These are the most common symptoms that lead people in the Ashaiman Municipality to practice SM.

The highest source of referral or information for SM in the Ashaiman Municipality is the OTCMS followed by friends and relatives. This concludes that health field workers are trusted to know more about medications and their use followed by friends and relatives. The reason why people in the Ashaiman Municipality practice SM commonly is because they perceive the condition or illness to be mild and doesn't need physician care. Time saving and cost effectiveness is also a major reason for SM behavior. Most complain of the long queues in the major hospitals and also not being able to afford the cost. On the average, majority of the people in the Ashaiman Municipality have adequate knowledge on the dangers associated with SM such as:

- Wrong self-diagnosis
- Wrong dosage
- Severe adverse reactions
- Delay in seeking medical care
- Risk of drug abuse/dependency

Recommendations

Public Education and Awareness

- The District Health Directorate should intensify public education on the advantages and risks of SM, incorporating global and local research data.
- Clear guidelines should be disseminated to distinguish between medications suitable for SM and prescription-only drugs.
- Public campaigns through platforms like television, radio, and social media should aim to counter misinformation and promote responsible SM practices.
- *Regulatory Measures by the Pharmacy Council of Ghana*
- Over-the-counter medicine sellers (OTCMS) should undergo frequent inspections to prevent the sale of restricted medications without proper authorization.
- Advertisements for medications must be thoroughly vetted to ensure accuracy and prevent misinformation.
- Unregulated sales of medications in buses, markets, streets, and other inappropriate locations should be strictly prohibited.
- A comprehensive framework should be developed to educate the

public on the safe use of SM, specifying which medications are permissible and under what circumstances.

Statements and Declaration

I hereby declare that this research work is solely my original work and has not been submitted to any other journal for publication. Therefore, there is no competing interest and no funding for this work. All sources used have been duly referenced and acknowledged. There is no conflict of interest in this body of work.

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