



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



## SHENDI UNIVERSITY

### Faculty of Graduate Studies and Scientific Research

**Assessment Mothers Knowledge Regarding Irrational Uses Of  
Antibiotic in Sharge Algeria Locality from May to November**

**A thesis Submitted In Partial Fulfillment of The Requirement  
For Degree of MSc degree Community Nursing**

**Submitted by:**

Basmat Hassan Alshiek Albaderi

BSc in nursing science, International University of Africa

**Supervised by:**

Associate Professor Mohammed jabber alder

Ph.D. of community health nursing

بسم الله الرحمن الرحيم

قال تعالى:

﴿وَإِذْ قَالَ رَبُّكَ لِلْمَلَائِكَةِ إِنِّي جَاعِلٌ فِي الْأَرْضِ خَلِيفَةً ۗ قَالُوا أَتَجْعَلُ فِيهَا مَنْ يُفْسِدُ فِيهَا وَيَسْفِكُ  
الدِّمَاءَ وَنَحْنُ نُسَبِّحُ بِحَمْدِكَ وَنُقَدِّسُ لَكَ ۗ قَالَ إِنِّي أَعْلَمُ مَا لَا تَعْلَمُونَ ۗ﴾ (٣٠)

صدق الله العظيم

سورة البقرة (30)

## **Dedication**

**I Dedicate This Work:**

**To My Mother The Symbol Of Strength, From Her I Taught A Lot of Things.**

**To My Father, My Best Teacher in School and Life.**

**To My Lovely husband Who Sacrificed with His Time and Efforts to Support Me**

**To My Colleges, Who Support Me**

## **Acknowledgement**

Research project is never work of anyone alone ,the contribution of many people ,in their different ways have made this possible ,I would like to extend my thanks especially to my god for the wisdom and perservance that has been bestowed upon me during this research project and indeed throughout my life

I am truly grateful to my supervisor, Professor .Mohamed Jabber Aldar for his invaluable assistance and guidance while completing.my dissertation.

I would like to specifically acknowledge the cooperation of mothers.

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## Abstract

**Background:** Self-medication with antibiotics may be a threat to the individual who practiced it as well as to the whole community; Problems related to self-medication with antibiotics in the developing countries are complex because they are related to other issues, such as poverty, lack of access to medicines and information regarding medicines.

**Aim:** to assess mother knowledge regarding irrational uses of antibiotics in ruffaa city

**Methods:** This descriptive cross-sectional design, this study include 171 mothers as a total coverage, data were collected by using structured interview questionnaire, and was analyzed by using SPSS descriptive and statistical measure

**Results :** total respondent was (171) The spread of self-medication was found to be inversely proportional to age, it was highest among those aged between 20-30 years, The majority of those who practiced self-medication with antibiotics were moderate income, 65.5% of mothers mentioned that antibiotic used to treat infections this reflect had good knowledge near two third 64.3% mentioned convenience as a reason of self-medication, more than third 31.0% mentioned community pharmacists as a reference for use, majority of study group 44.4% mentioned Consulted a doctor as action of adverse reaction, near two fifth 39.2% of study group mentioned Increase antimicrobial drug resistance as impact of long using

**Conclusion :** The findings from this study highlight the spread of self-medication among mothers and the lack of awareness about the associating risks with use antibiotics by high risk group. the study recommend that a holistic approach must be taken to prevent this problem from increasing which would involve awareness and education regarding the implications of self-medication, strategies to prevent the supply of medicines without prescription by pharmacies and strict rules regarding pharmaceutical advertising



## المستخلص

قد يكون العلاج الذاتي بالمضادات الحيوية تهديداً للفرد الذي يمارسها وكذلك للمجتمع بأكمله؛ المشاكل المتعلقة بالتطبيق الذاتي بالمضادات الحيوية في البلدان النامية معقدة بسبب ارتباطها بمسائل أخرى، مثل الفقر، وعدم الوصول إلى الأدوية والمعلومات المتعلقة بالأدوية. **الهدف:** تقييم معرفة الأمهات فيما يتعلق بالاستخدامات غير العقلانية للمضادات الحيوية في مدينة رفاعه .

**المنهجية:** دراسة وصفية منهجية ، كان مجموع المستجيبين (171) ، أنها تغطية شاملة ، وقد تم جمع البيانات باستخدام استبيان منظم ، وتم تحليلها باستخدام إصدار SPSS وصفي وإحصائي **النتائج:** كان مجموع المستجيبين (171) وقد وجد أن انتشار التداوي الذاتي يتناسب عكسياً مع العمر ، وكان أعلى بين أولئك الذين تتراوح أعمارهم بين 20-30 سنة ، وكان معظم الذين مارسوا العلاج الذاتي بالمضادات الحيوية من ذوي الدخل المعتدل ، 65.5 ٪ من الأمهات ذكرن أن المضادات الحيوية تستخدم لعلاج الالتهابات هذا يدل علي ان لديهم لديه معرفه عن المضاد الحيوي ما يقرب من 64.3 ٪ ذكرن ان سهوله الوصول للمضادات سبب التطبيق الذاتي ، أكثر من 31.0 ٪ ذكرن ان صيادلة المجتمع هم المرجع الاول عند استخدام المضادات ، أغلبية مجموعة الدراسة 44.4 ٪ ذكرن استشارة الطبيب عند حدوث اعراض جانبية ، 39.2 ٪ من مجموعة الدراسة ذكرت في حاله الاستخدام الطويل والغير رشيد للمضادات الحيوية سوف يحدث زيادة في مقاومه الأدوية المضادة للميكروبات.

**الخاتمة:** تسلط نتائج هذه الدراسة الضوء على انتشار التداوي الذاتي بين الأمهات ونقص الوعي بالمخاطر المرتبطة باستخدام المضادات الحيوية من قبل مجموعة عالية المخاطر. توصي الدراسة بوجود اتخاذ نهج شامل لمنع هذه المشكلة من الزيادة والتي قد تتضمن الوعي والتوعية فيما يتعلق بآثار الأدوية الذاتية، واستراتيجيات لمنع توريد الأدوية دون وصفة طبية من الصيدليات وقواعد صارمة فيما يتعلق بالإعلانات الدوائية.

### **1.1Background:**

Self-medication is the use of drugs to treat self-diagnosed disorders or symptoms or the intermittent or continued use of prescribed drugs for chronic or recurrent disease or symptoms. In developing countries most illness are treated by self-medication as well as developed countries are experiencing self-medication and irrational use of Antibiotics in their communities<sup>(1)</sup>. Self-medication with antibiotics may be a threat to the individual who practiced it as well as to the whole community, Problems related to self-medication with antibiotics in the developing countries are complex because they are related to other issues, such as poverty, lack of access to medicines and information regarding medicines, poor quality of health care facilities, and most importantly weak implementation of regulation related to medicines<sup>(2)</sup>. For example, many studies showed that limited purchasing power is a major determinant for self-medication with antibiotics among the population in India,, Nigeria, the Philippines, Latino adults in the United States of America, and the non-Arab population in the United Arab Emirates.

Self-medication may be practiced as a consequence of ignorance, poverty and in availability of health facilities. It has been pointed that the main reason for self-medication as reported by the participants was their previous experience on the efficacy of treatment, People tend to diagnose and treat themselves and think that they are having the right drug for the right condition<sup>(3)</sup>. Reasons for self-medication vary between societies, cultures, and types of health services. A study remarked that reasons cited by patients for practicing self-medication included expediency, convenience, efficacy of medicines, dependability of supply, and cost reduction. It is stated that cost of treatment may have a negative effect on health and that many individuals self-medicate to avoid the long waiting times in facilities

and due to inaccessibility of health facilities, cost, and a feeling that the ailment is minor People believed that physician visits for a diagnosis and prescription were unnecessary when the patient was familiar with the symptom and it had previously responded to antibiotic treatment Community members who practiced self-medication with prescription drugs got their medicines over-the-counter from community pharmacies and patent medicine stores Pharmacy staff behavior can be a factor that puts patients at risk for self-medication with antibiotics. Community pharmacies are failing their tasks in enhancing rational use of antibiotics. Such a practice may be a consequence of weak enforcement and control over the legislation and professional standards Antibiotics are frequently purchased without proper indication, in insufficient quantities, or when contraindicated.<sup>(4)</sup> Approximately two-thirds of all oral antibiotics worldwide are obtained without a prescription and are irrationally used for diseases such as tuberculosis, , and pneumonia and for mild childhood infections .the nurse in particular can play a key role in giving advice to consumers on the proper and safe use of medical products intended for self-medication and also informing people of the risks of inappropriate use of antibiotics. The underlying motivation for this study is the prevailing health issues associated with inappropriate use of Antibiotics, which is increasingly becoming a challenge in Sudan.

## **1.2Justification:**

self-medication or irrational use of drugs is a crucial, global public health problem because there is increase drug resistance and decrease efficacy the reason of this problem can occur due to different societies, cultures, and types of health services.

This study shed light on level of knowledge of those mothers and information needed to enhance them for rational use to prevent major problem of using drugs without doctor's prescription or taking from pharmacies' directly that is because mothers play an important role in family care special of their children's.

### **1.3 Objective:**

#### **General objective**

To assess mother knowledge regarding irrational uses of antibiotics in sharge algeria locality

#### **Specific objective is to:**

1. Assess mother knowledge regarding antibiotics.
2. Identify reasons beyond using antibiotic.
3. Evaluate knowledge regarding adverse reaction toward antibiotics
4. Determine association between drug using and other variable

## Literature Review

### 2.1 Definition of rational drugs:

The rational use of medicines According to the WHO, is regarded as a situation in which the patient receives the appropriate medicine for their clinical need, at a correct dosage, for an appropriate period of time, and at a lower cost to themselves and the community <sup>(1)</sup>.

Irrational antibiotic use reflects not only patients' failure to comply with physician's instructions on how to use antibiotics adequately, but is also associated with inappropriate antibiotic prescribing.

Rational antibiotic therapy should be based on the correct indication, the right drug and dosage, the drug of the first choice, the appropriate period of use, and the lowest treatment costs all antibiotic prescription events that do not comply with these conditions should be considered as irrational prescribing.

### 2.2 Rights of medication administration

- |                    |                    |
|--------------------|--------------------|
| 1.Right Patient    | 6.Right To Refuse  |
| 2.Right Medication | 7.Right Assessment |
| 3.Right Dose       | 8.Right Evaluation |
| 4. Right Time      | 9.Right Education  |
| 5.Right Route      |                    |

### The Problem of irrational use

Irrational or non-rational use is the use of medicines in a way that is not compliant with rational use, Worldwide more than 50% of all medicines are prescribed, dispensed, or sold inappropriately, while 50% of patients fail to take them correctly. Moreover, about one-third of the world's population lacks access to essential medicines. The inappropriate use of antibiotics through self-medication may cause significant adverse effects, such as antibiotic resistance, treatment failure, and drug toxicity.

### **2.3 Types of irrational medicines use are**

- the use of too many medicines per patient (poly-pharmacy);
- inappropriate use of antimicrobials, often in inadequate dosage, for non-bacterial infections;
- over-use of injections when oral formulations would be more appropriate;
- failure to prescribe in accordance with clinical guidelines;
- inappropriate self-medication, often of prescription-only medicines.

Lack of access to medicines and inappropriate doses result in serious morbidity and mortality, particularly for childhood infections and chronic diseases, such as hypertension, diabetes, epilepsy and mental disorders, Inappropriate use and over-use of medicines waste resources - often out-of-pocket payments by patients - and result in significant patient harm in terms of poor patient outcomes and adverse drug reactions. Furthermore, over-use of antimicrobials is leading to increased antimicrobial resistance and non-sterile injections to the transmission of hepatitis, HIV/AIDS and other blood-borne diseases, Finally, irrational over-use of medicines can stimulate inappropriate patient demand, and lead to reduced access and attendance rates due to medicine stock-outs and loss of patient confidence in the health system <sup>(2)</sup> .

### **2.4 Reasons for irrational use of drugs**

#### **1. Lack of information:**

Unlike many developed countries, we do not have regular facility, which provides us up to date unbiased information on the currently used drugs Majority of our practitioners rely on medical representatives. There are differences between pharmaceutical concern & the drug regulatory authorities in the interpretation of the data related to indications & safety of drugs.

2. Faulty & inadequate training & education of medical graduates:

Lack of proper clinical training regarding writing a prescription during training period, dependency on diagnostic aid, rather than clinical diagnosis, is increasing day by day in doctors.

3. Poor communication between health professional & patient:

Medical practitioners & other health professional giving less time to the patient & not explaining some basic information about the use of drugs.

4. Lack of diagnostic facilities/Uncertainty of diagnosis:

Correct diagnosis is an important step toward rational drug therapy. Doctors posted in remote areas have to face a lot of difficulty in reaching to A precise diagnosis due to non-availability of diagnostic facilities. This promotes poly-pharmacy.

5. Demand from the patient:

To satisfy the patient expectations and demand of quick relief, clinician prescribe drug for every single complaint. Also, there is a belief that every ill has a pill” All these increase the tendency of polypharmacy.

6. Defective drug supply system & ineffective drug regulation:

Absence of well-organized drug regulatory authority & presence of large number of drugs in the market leads to irrational use of drugs

7. Promotional activities of pharmaceutical industries:

The lucrative promotional programs of the various pharmaceutical industries influence the drug prescribing<sup>(3)</sup>

## **2.5 Obstacles exist in rational drug use**

Various obstacles in rational drug use are:

1. Lack of objective information & of continuing education & training in pharmacology.

2. Lack of well organized drug regulatory authority & supply of drugs.



3. Presence of large number of drugs in the market & the lucrative methods of promotion of drugs employed by pharmaceutical industries.

4. The prevalent belief that “every ill has a pill.” (4)

## **2.6 Hazards of irrational use of drugs**

### **Individual level**

- Inaccurate self-diagnosis
- Failure to inquire about suitable medical advice promptly
- Inaccurate choice of therapy
- Fail to recognize unusual pharmacological risks
- Uncommon but severe adverse effects
- Fail to diagnosis of contraindications, interactions, warnings, and precautions
- Fail to distinguish that the same active substance is already being taken under a different name
- Fail to report recent self-medication to the prescribing physician (double medication/harmful interaction)

Fail to recognize or report adverse drug reactions

- Incorrect route of administration
- Excessive dosage
- Excessively prolonged use
- Risk of dependence and abuse
- Food and drug interaction
- Storage in incorrect conditions or beyond the recommended shelf life<sup>(5)</sup>

### **Community Level**

Improper self-medication could result in an increase in drug-induced disease, tolerance, resistance in the body, and in wasteful public expenditure.

## **2.7 WHO advocates 12 key interventions to promote more rational use:**

1. Establishment of a multidisciplinary national body to coordinate policies on medicine use
2. Use of clinical guidelines
3. Development and use of national essential medicines list
4. Establishment of drug and therapeutics committees in districts and hospitals
5. Inclusion of problem-based pharmacotherapy training in undergraduate curricula
6. Continuing in-service medical education as a licensure requirement
7. Supervision, audit and feedback
8. Use of independent information on medicines
9. Public education about medicines
10. Avoidance of perverse financial incentives
11. Use of appropriate and enforced regulation
12. Sufficient government expenditure to ensure availability of medicines and staff

### **Steps To improve rational drug prescribing**

1. Step:

Identify the patient's problem based on symptoms & recognize the need for action.

2. Step:

Diagnosis of the disease. Identify underlying cause & motivating factors. This may be specific as in infectious disease or non specific.

3. Step:

List possible intervention or treatment. This may be non drug treatment or drug treatment. Drug must be chosen from different alternatives based

on efficacy, convenience & safety of drugs including, drug inter-actions & high risk group of patients.

4. Step:

Start the treatment by writing an accurate & complete prescription e.g. name of drugs with dosage forms, dosage schedule & total duration of the treatment.

5. Step:

Given proper information instruction & warning regarding the treatment given e.g. side effects, dosage schedule & dangers/risk of stopping the therapy suddenly

6. Step:

Monitor the treatment to check, if the particular treatment has solved the patient's problem.

It may be:

(a) Passive monitoring – done by the patient himself. Explain him what to do if the treatment is not effective or if too many side effect occurs

(b) Active monitoring done by physician and he make an appointment to check the response of the treatment.<sup>5</sup>

## **2.8 The impact of irrational prescribing**

The impact of irrational drug use is predictable.

1. Reduction in the quality of drug therapy leads to increased morbidity and mortality, wastage of resources leading to reduced availability of other vital drugs,
2. Increased costs, increased risk of unwanted affects and the emergence of antimicrobial drug resistance,
3. There is also an adverse psychosocial impact of irrational prescribing by way of perpetuation of the notion that every symptom requires a medication.<sup>(6)</sup>

## **Methodology**

### **3.1 Study design:**

This was a descriptive cross-sectional community base study design

### **3.2 Study area:**

The study was conducted at ruffaa city, The town of Rafa'a is located in the sharg algzeria locality, which is the capital of the east of the algzeria and its area is more than (16) square kilometers. The twin city of Al-Hasaissa is the eastern part of the Blue Nile, and is connected by the great link between the two cities. The population depends on agriculture, grazing and trade for their economic activity and sources of income It has a huge university teaching hospital, Rafa'a Teaching Hospital As well as a large health center under the umbrella of health insurance.

### **3.3 Study population :**

The study was conducted among mothers who had children under 5 years and have had prescription of antibiotics and reside in block 23 at Rafa'a city

### **3.4 Sampling and sample size:**

Total coverage of study group of the block (20 ).

### **3.5 Data collection tool**

The data were collected by using a standardized questionnaire modified by the researcher. Under guidance of supervisor. The questionnaire composed of 13 question part one demographic data , part two about knowledge of antibiotics .

### **3.6 Data collection technique:**

The data collected by women interview, the researcher visited the women that participate in the study.

### **3.7 Data management (analysis)**

The data were analysed via descriptive statistic in form of frequency and percentage with the aid of statistical program for social science (SPSS) package version 23. To compare between data result chi square was used. The result was represented in form tables and figures

### **3.8 Ethical consideration:**

.The participant well be receive the questionnaire with a letter of explanation including the intent of the study. The participant has complete freedom to be involved in the research according to selected by sampling.

**Table (1):Demographic Data of Sample Study**

Demographic Variables		Percent (%)
Age	20-30	%35.1
	31-40	%27.5
	41-50	%21.6
	50>	%15.8
Education Level	Illiterate	%3.5
	informal education	%2.3
	Primary	%13.5
	Secondary	%44.4
	BSc	%33.3
	Postgraduate	%2.9
Occupation	Housewife	%60.2
	Employee	%29.8
	Businesswomen	%.6
	Student	%6.4
	Worker	%2.3
Income	Low	%28.1
	Moderate	%66.1
	High	%5.8
number of children	less than five	%79.5
	More than six	%20.5
Health Insurance	National	%59.6
	Employee	%2.3
	Haven't	%38.0

From table (1), we found that the more than third (35.1%) their age between (20 to 30), Concerning education Level, less than half (44.4%) were secondary level, About Income, the two third 66.1% was Moderate, Regard number of children the majority of study group less than five(79.5%), while (59.6%) Had health insurance

**Table (2): knowledge about definition of antibiotics**

	Frequency	Percent
That help kill or inhibit bacterial growth.	59	34.5
Which are sometimes used to treat infections	112	65.5
Total	171	100.0

The above table show that 65.5% of mothers mentioned sometimes used to treat infections.

**Table (3): safeness of antibiotics**

	Frequency	Percent
Yes	117	68.4
No	29	17.0
a do not no	25	14.6
Total	171	100.0

The above table clarify that 68.4 of study group mentioned antibiotics is safe

**Table (4): previous taken antibiotic and treatment by study group**

Previous taken	Frequency	Percent
Yes	155	90.6
No	11	6.4
Not Sure	5	2.9
Total	171	100.0
Treatment by antibiotic		
Yes	149	87.1
No	16	9.4
Not Sure	6	3.5
Total	171	100.0

The above table show majority of study group (90.6, 87.1) previous taken and treated with antibiotic respectively

**Table (5): Indication of Antibiotics**

	Frequency	Percent
Bacterial infection	74	43.3
Virus infection	42	24.6
parastic infection	14	8.2
prophylactic uses	41	24.0
Total	171	100.0

The above table show that more than two fifths mentioned (Bacterial infection) 43.3 % while same percent 24.6% mentioned Virus infection and prophylactic uses .



**Table (6): the reference for use antibiotics**

	Frequency	Percent
Recommendation by community pharmacists	53	31.0
Opinion of family members	1	.6
Opinion of friends	8	4.7
My own experience	36	21.1
Recommendation by net citizens	3	1.8
Previous doctor's prescription	31	18.1
(Recommendation by community pharmacists + Previous doctor's prescription )	8	4.7
(Recommendation by community pharmacists + Recommendation by net citizens )	2	1.2
(Recommendation by community pharmacists + My own experience)	10	5.8
(Recommendation by community pharmacists + Opinion of friends )	1	.6
( My own experience + Previous doctor's prescription )	14	8.2
( Opinion of friends + Previous doctor's prescription )	3	1.8
( Opinion of friends + Recommendation by net citizens )	1	.6
Total	171	100.0

Above Table Indicate That More Than Third 31.0% Mentioned Recommendation By Community Pharmacists While 21.1%, 18.1% Mentioned My Own Experience ,Previous Doctor's Prescription).

**Table (7): previous adverse reaction and their action**

Adverse reaction	Frequency	Percent
No	154	90.1
no sure	10	5.8
Diarrhea	1	.6
Body disorder	1	.6
eipgastris pain	1	.6
Allerge	3	1.8
cramp and diarrhea	1	.6
Total	171	100.0
<b>Action for adverse reaction</b>		
Stopped taking antibiotics	31	18.1
Switched to another antibiotic	4	2.3
Consulted pharmacy staff	11	6.4
Consulted a doctor	76	44.4
(Stopped taking antibiotics+Consulted pharmacy staff)	11	6.4
(Stopped taking antibiotics+Consulted a doctor)	20	11.7
(Switched to another antibiotic+Consulted pharmacy staff)	4	2.3
(Switched to another antibiotic+Consulted a doctor)	6	3.5
(Consulted a doctor+Consulted pharmacy staff)	4	2.3
Consulted family members/friends	4	2.3
Total	171	100.0

The above table indicate that majority of study group 90.1% mentioned there is no previous adverse reaction , while 44.4% mentioned Consulted a doctor.

**Table (8): concept of using antibiotics at home**

	Frequency	Percent
Same age	38	22.2
Same symptoms	125	73.1
Experience	4	2.3
The type of disease	4	2.3
Total	171	100.0

The above table show that most 73.1% of them mentioned same symptoms while 22.2% mentioned same age

**Table (9): Intervention to promote rational use**

Intervention	Frequency	Percent
Public education about medicines	69	40.4
Use of appropriate and enforced regulation	48	28.1
Use of clinical guidelines	54	31.6
Total	171	100.0

The above Table show that two fifth 40.4% mentioned Public education about medicines, while31.6% mentioned Use of clinical guidelines

**Table (10): irrational use of antibiotics by high risk group**

High risk Group	Frequency	Percent
Children under five years	50	29.2
Pregnant mother	9	5.3
Geriatric	112	65.5
Total	171	100.0

The above table show that near two third 65.5% mention geriatric ,while 29.2% mention children under five

**Table( 11):Relation between age and reasons of self-medication with antibiotics**

	reasons of self-medication with antibiotics					Total	P. value
	Cost saving	Convenience	Lack of trust in prescribing doctor	Experience	Reduce the pain increase		
20-30	17 9.9%	40 23.4%	2 1.2%	0 0.0%	1 0.6%	60 35.1%	0.038
31-40	9 5.3%	36 21.1%	2 1.2%	0 0.0%	0 0.0%	47 27.5%	
41-50	10 5.8%	23 13.5%	3 1.8%	1 0.6%	0 0.0%	37 21.6%	
50>	12 7.0%	11 6.4%	1 0.6%	3 1.8%	0 0.0%	27 15.8%	
Total	48 28.1%	110 64.3%	8 4.7%	4 2.3%	1 0.6%	171 100.0%	

**Table( 12):Relation between Income and reasons of self-medication with antibiotics**

		reasons of self-medication with antibiotics					Total	<i>P. value</i>
		Cost saving	Convenience	Lack of trust in prescribing doctor	Experience	Reduce the pain increase		
Income	low	21 12.3%	23 13.5%	2 1.2%	1 0.6%	1 0.6%	48 28.1%	0.029
	moderate	25 14.6%	81 47.4%	4 2.3%	3 1.8%	0 0.0%	113 66.1%	
	high	2 1.2%	6 3.5%	2 1.2%	0 0.0%	0 0.0%	10 5.8%	
Total		48 28.1%	110 64.3%	8 4.7%	4 2.3%	1 0.6%	171 100.0%	

**P. value 0.029 \*\*\***

**Table( 13):Relation between Level of education and Decision of self-treatment of antibiotics**

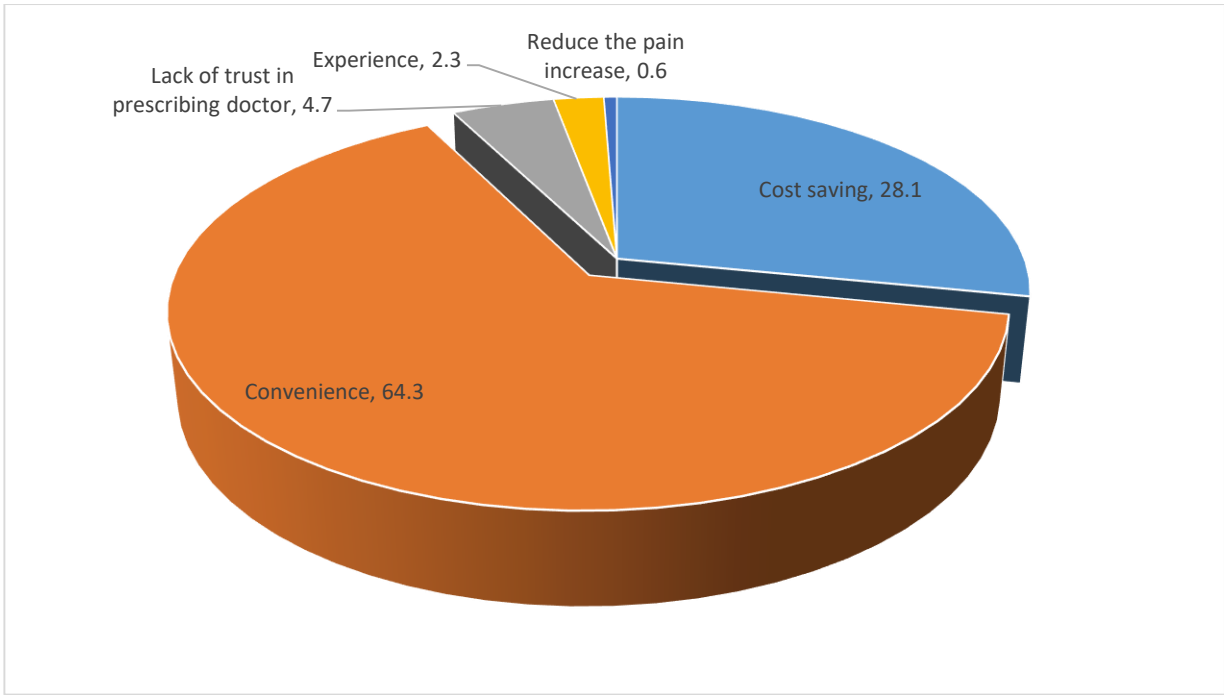
		Decision of self-treatment of antibiotics			Total	P. value
		Previous experience on the efficacy of treatment	Socioeconomic factor	Inaccessibility to health services		
Level of education	literate	4 2.3%	1 0.6%	1 0.6%	6 3.5%	0.009
	informal education	2 1.2%	2 1.2%	0 0.0%	4 2.3%	
	primary	11 6.4%	7 4.1%	5 2.9%	23 13.5%	
	secondary	65 38.0%	7 4.1%	4 2.3%	76 44.4%	
	B.Sc	48 28.1%	6 3.5%	3 1.8%	57 33.3%	
	postgraduate	5 2.9%	0 0.0%	0 0.0%	5 2.9%	
Total		135 78.9%	23 13.5%	13 7.6%	171 100.0%	

P. value 0.009

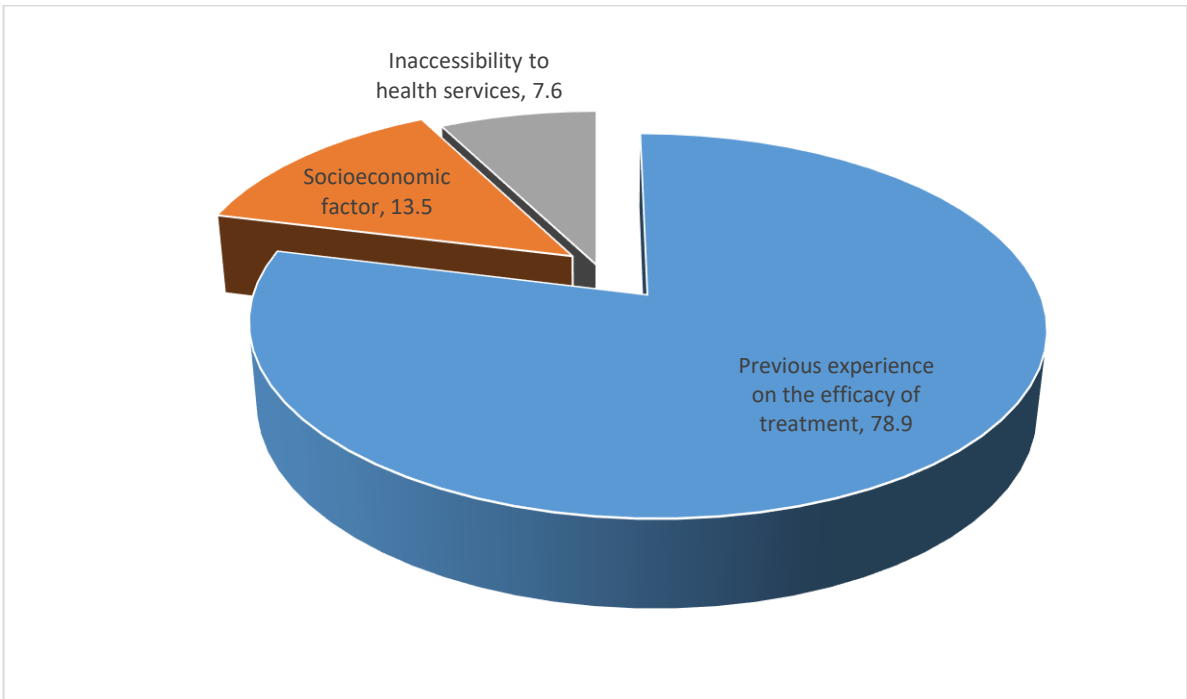
**Table( 14) Relation between Level of education and Action for the adverse reactions**

	Action for the adverse reactions										Total	P. value	
	Stopped taking antibiotics	Switched to another antibiotic	Consulted pharmacy staff	Consulted a doctor	(Stopped taking	(Stopped taking	(Switched to another antibiotic, Consulted	(Switched to another	(Consulted a	Consulted family			
Level of education	literate	1 0.6%	1 0.6%	2 1.2%	2 1.2%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	6 3.5%	0.000
	informal education	0 0.0%	0 0.0%	0 0.0%	1 0.6%	0 0.0%	0 0.0%	0 0.0%	1 0.6%	0 0.0%	2 1.2%	4 2.3%	
	primary	9 5.3%	1 0.6%	0 0.0%	5 2.9%	1 0.6%	5 2.9%	2 1.2%	0 0.0%	0 0.0%	0 0.0%	23 13.5%	
	secondary	9 5.3%	2 1.2%	4 2.3%	40 23.4%	4 2.3%	7 4.1%	2 1.2%	3 1.8%	4 2.3%	1 0.6%	76 44.4%	
	B.Sc	12 7.0%	0 0.0%	5 2.9%	25 14.6%	6 3.5%	7 4.1%	0 0.0%	1 0.6%	0 0.0%	1 0.6%	57 33.3%	
	postgraduate	0 0.0%	0 0.0%	0 0.0%	3 1.8%	0 0.0%	1 0.6%	0 0.0%	1 0.6%	0 0.0%	0 0.0%	5 2.9%	
Total	31 18.1%	4 2.3%	11 6.4%	76 44.4%	11 6.4%	20 11.7%	4 2.3%	6 3.5%	4 2.3%	4 2.3%	171 100.0%		

P. value: 0.000

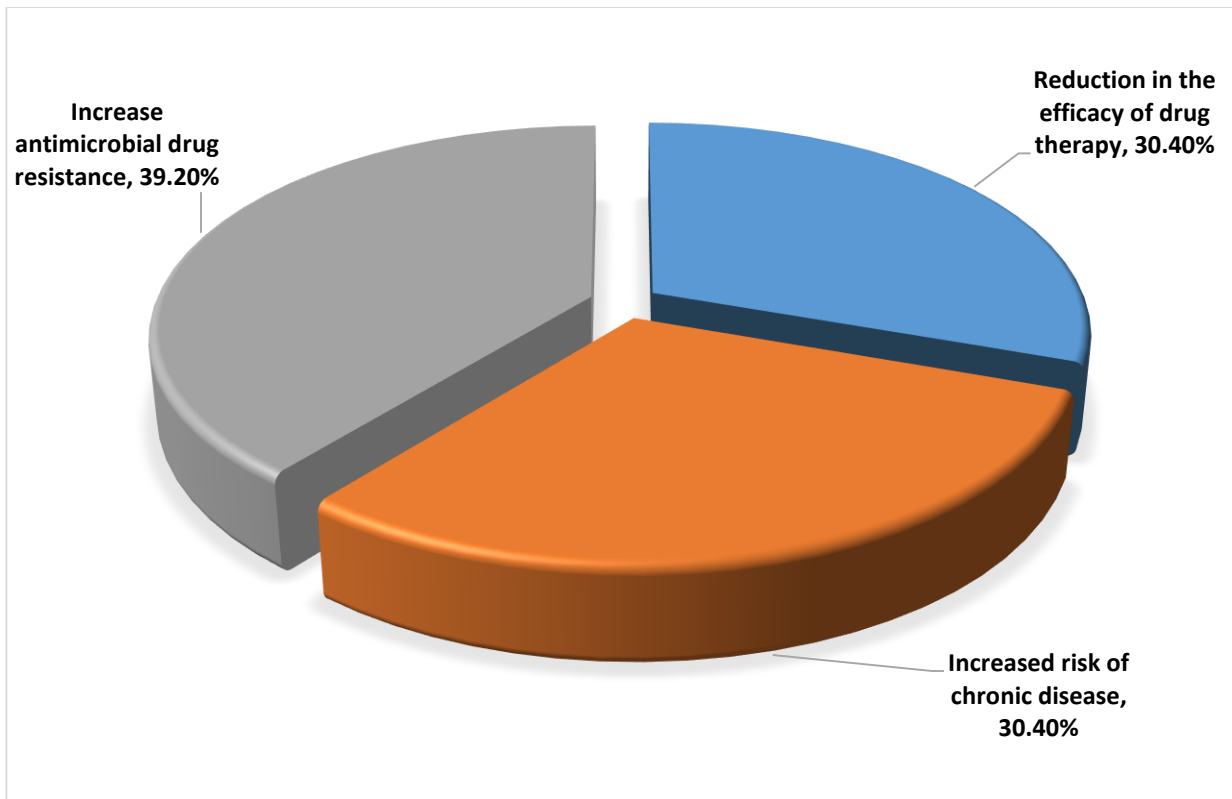


**Figure ( 1 ) Reasons of Self-medication With Antibiotics**



**Figure( 2 ) Decision of Self-treatment of Antibiotics**





**Figure( 3 ) Impact of Long Using of Antibiotics**

## Discussion

In this study 90.1 % of the respondents practiced self-medication with antibiotics, majority of study group (90.6, 87.1) taken and treated with antibiotic respectively, where age was significantly associated with antibiotic self-medication ( $p = 0.038$ ) Self-medication was higher in moderate level an explanation of this is that most of these people cannot afford to pay for a doctor's visit Health insurance was not shown to limit the behavior of self-medication in this study; This phenomenon reflects the limitations of health insurance systems in Sudan.

In spite of 90% had no previous adverse reaction but their knowledge about action reveal that 44.4% consulted doctor this reflect that had good awareness and behavior about action taken, which contribute to decrease antibiotics resistance.

The major reference of the antibiotics used was community pharmacies (31.0%). So that to prevent self-medication , Strengthening pharmacy regulations and educating both the public and pharmacists, Other mothers used medications from previous prescriptions (18.1%) , on other hand there is significant Relation between Level of education and Action for the adverse reactions.

Despite the high education level of the participants (more than 44% where secondary level), 90.1% still had previous self-medication with antibiotics.

Concern concept of using antibiotics at home about 73.1% of study population mentioned that they use antibiotics when their children experience the same symptoms', this may be due to their culture and traditional knowledge about using medication in general ,this result agree with study done in middle east prevalence of Self-medication of antibiotics is alarmingly high among members of the public in the Middle East The

self-medication practice was higher among mother and increased with age and income., for example, may push individuals towards finding ways to save on costs, such as saving on the costs of medical consultations by approaching pharmacists directly

Impact of long using of antibiotics, the study show that near two fifth 39.2% of study group mentioned Increase antimicrobial drug resistance similar to literature review Increased costs, increased risk of unwanted affects and the emergence of antimicrobial drug resistance,

Intervention to promote rational use the study show that two fifth 40.4% mentioned Public education about medicines, the study recommend that Educational interventions targeting the general public, pharmacists, and healthcare students.

Regard to irrational use of antibiotics by group The study show that near two third 65.5% mention geriatric , this reflect miss concept about complication and problems which can face the geriatric age ,to prevent this problem it need to increase public awareness about geriatric issue

## Conclusion

The results of this study conclude that majority of study group practiced self-medication , The major reference of the antibiotics used was community pharmacies , the concept of using antibiotics at home are more spread among mothers due to their culture and traditional knowledge, and mainly irrational uses of antibiotics was prevalent among geriatric this reflect miss concept of mothers.

## **Recommendation**

1. Educational interventions targeting the public, pharmacists, and healthcare students.
2. Improvement in the quality of healthcare facilities with easy access, law enforcement.
3. Pharmacists should also be morally encouraged to educate patients and rationalize antibiotic use by strictly stopping antibiotic sales without an authorized prescription by physicians.

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



**Shendi University**

***Faculty of Graduate Studies and Scientific Research***

**This Structured Administrative Questionnaire Design To  
Assess Self-Medication With Antibiotics Among Mothers**

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Be assured ... This questionnaire is very confidential and used to improve  
the quality of health services

**Demographic data:**

**1. Age:**

- a) (20-30)
- b) (31-40)
- c) (41-50)
- d) (more than 50)

**2. Level of education:**

- a) illiterate
- b) informal education
- c) primary
- d) secondary
- e) BSc
- f) postgraduate

**3. Occupation:**

- a) housewife
- b) employee
- c) businesswomen
- d) other

**4. Income:**

- a) low
- b) moderate
- c) high

**5. Number of children:**

- a) less than five
- b) More than six

**6. Health insurance:**

- a) National
- b) Private
- c) Haven't

**7. Antibiotic is?**

- a) That help kill or inhibit bacterial growth.
- b) Which are sometimes used to treat infections

**8. Antibiotics are safe medications. ?**

- a) Yes
- b) No
- c) I do not know

**9. Have you ever taken antibiotics?**

- a) Yes
- b) No
- c) Not sure

**10. What are antibiotics used for?**

- a) Bacterial infection
- b) Virus infection
- c) parasite infection
- d) As prophylactic uses



**11. Have you treated yourself with antibiotic?**

- a) Yes
- b) No
- c) Not sure

**12. What was your reasons of self-medication with antibiotics?**

- a) Cost saving
- b) Convenience
- c) Lack of trust in prescribing doctor
- d) Others  (specify).....

**13. What is your reference when you use antibiotics?**

- a) Recommendation by community pharmacists
- b) Opinion of friends
- c) Opinion of family members
- d) My own experience
- e) Recommendation by net citizens
- f) Previous doctor's prescription
- g) The advertisement

**14. Decision of self-treatment of antibiotics depend on ?**

- a) Previous experience on the efficacy of treatment
- b) Socioeconomic factor
- c) Inaccessibility to health services
- d) Other  (specify).....

**15. Have you ever had any adverse reaction when you took antibiotics for self-medication?**

- a) Yes  (specify).....
- b) No
- c) Not sure

**16. Action for the adverse reactions?**

- a) Stopped taking antibiotics
- b) Switched to another antibiotic
- c) Consulted pharmacy staff
- d) Consulted a doctor
- e) Consulted family members/friends
- f) Nothing
- g) Others  (specify).....

**17. Antibiotics can be use according to ?**

- a) Same age
- b) Same symptoms
- c) Other  (specify).....

**18. Impact of long using of antibiotics?**

- a) Reduction in the efficacy of drug therapy
- b) Increased risk of chronic disease
- c) Increase antimicrobial drug resistance

**19. Intervention to promote rational use?**

- a) Public education about medicines
- b) Use of appropriate and enforced regulation
- c) sufficient government expenditure to ensure availability of medicines and staff

**20. Vulnerable age need to use antibiotics without visiting doctors?**

- a) Children under five years
- b) Pregnant mother
- c) Geriatric