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SELF-MEDICATION AND ITS DETERMINANTS IN DIFFERENT AREAS OF SAUDI ARABIA: A CROSS SECTIONAL COMMUNITY-BASED STUDY

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Abstract:

Background: *Antibiotic misuse refers to the misuse or overuse of antibiotics, with potentially serious effects on health which result in antibiotic resistance.*

Objectives*: to determine the prevalence and factors associated with self-medication practice among the different sectors of the general population of Saudi Arabia.*

Methods*: A cross-sectional community based study in different areas of the Kingdome of Saudi Arabia, during the period from 1 March to 31 June, 2018. Five community pharmacies were selected from each area of Saudi Arabia using simple random sampling technique in order to represent the 5 geographical areas of the kingdom (North, East, South, West and Centre). A predesigned self administered questionnaire distributed to consumers buying medications with or without prescriptions. The questionnaire included the relevant questions about the needed data. The statistical analysis was carried out using SPSS software for Windows (version 16.0). Chi-Square test was used as a test of significans. A 5% level was chosen as a level of statistical significance.*

Results*: The results indicated that 5.6% of the participants always and 25.0% sometimes, purchased the drugs without prescriptions. Most of them 62.0% purchased non prescribed drugs 1-3 times within the previous 6 months. The source of information about the medications was the pharmacist in 22.9% and the physician in 28.6%. The most common reasons for self-medications was Influenza and common cold 18.1% followed by dental problems 10.5% and the most common medications purchased without prescriptions were analgesics/antipyretics 23.1%, antibiotics 17.4% and antispasmodics 6.8%. Improvement on self medication was reported by 83.3%, occurrence of problems in only 5.8% but only 24.1% recommend self medication to others.*

Conclusion*: self-medication is still considered a common public health problem in Saudi Arabia as the results of the current study indicated that 5.6% of the participants always and 25.0% sometimes, purchased the drugs without prescriptions. So we recommend conducting large scale researches focusing on the causes and methods of prevention of this problem. We also recommend health education of the public to increase the consumers' awareness about the hazards of self-medication specially with antibiotics.*

Key words: *Irresponsible; Self-medication; Saudi Arabia.*

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INTRODUCTION:

Antibiotics are very important medical resource. The ability to treat infections saves lives and provides safety for medical advances that now seem routine [1]. Antibiotic misuse refers to the misuse or overuse of antibiotics, with serious effects on health like resistance [2]. Antibiotic resistance refers to development of resistant strains of micro-organisms to the known and used antibiotics which is an important public health threat. Self-medication with antibiotics is an economical and health problem. Families, friends, neighbors, the pharmacist, previous prescribed drug, or suggestions from an advertisement in newspapers or popular magazines are common sources of self-medications. In present time, self-medication should be described as the "desire of /patients to play an intelligent, independent and informed role, not merely in terms of decision-making but also in the management of those preventive, diagnostic and therapeutic activities which concern them" [3, 4]. Major problems of self-medication are increased resistance of pathogens, adverse reaction wastage of resources and prolonged suffering. Antimicrobial resistance is a current problem world-wide particularly in developing countries where antibiotics are available without any prescription [5, 6]. There are difficulties in access, delay and low quality of care in health services in developing countries all of which exist despite the advances made. In addition, the marketing of non-prescription drugs in the media, the existence of home-stored medication and the belief that drugs solve all health problems, are important factors involving self-medication [7].

A previous study in India [8] reported that; prevalence of self-medication was found to be 11.9%. Males, age >40 years and involving in moderate level activity of occupation, were found to be significantly associated with higher self-medication usage ($P < 0.05$). Fever (31%), headache (19%), and abdominal pain (16.7%) are most common illnesses where self-medication is being used. Telling the symptoms to pharmacist (38.1%) was the commonest method adopted to procure drugs by the users. Majority of the self-medication users expressed that self-medication is harmless (66.6%) and they are going to use (90%) and advice others also (73.8%) to use self-medication drugs.

The current study was carried out aimed to determine the prevalence and factors associated with self-medication practice among the different sectors of the general population of Saudi Arabia.

METHODS:

Study design: A cross-sectional community based study in different areas of the Kingdome of Saudi Arabia, during the period from 1 March to 31 June, 2018

Five community pharmacies were selected from each area of Saudi Arabia using simple random sampling technique in order to represent the 5 geographical areas of the kingdom (North, East, South, West and Centre). In each community pharmacy, a sample of population (>18 years) was selected using systematic random sampling and taking every 9th consumer. A total of 503 consumers visiting community pharmacies in the target cities were interviewed in private place and asked to fill the questionnaire. The respondents provided with an explanation about the aim of the study and the confidentiality of the provided data.

A predesigned self administered questionnaire distributed to consumers buying medications with or without prescriptions. The questionnaire included questions about the sociodemographic characteristics of the participants as age, gender, educational level, and working status. the questionnaire also included questions on the type of medication purchased, the indication for self medication, sources of medications information, and the frequency for buying medications without a prescription, occurrence of problems due to using of non prescribed drugs, improvement with non prescribed drugs and if advising others to use non prescribed drugs.

Ethical considerations:

Permission to conduct the study was obtained from each pharmacy manager of the participating community pharmacies. Data collectors gave a brief introduction to the consumers by explaining the aims and significance of the study. Written consent was obtained from all participants. Confidentiality of data was maintained throughout the study.

Statistical Analysis:

We utilized the Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) version 16 to analyze the study data. Descriptive statistics were used to illustrate respondents' demographic characteristics, and list of medication classes. Categorical variables were presented as count and percentages. Chi-square Test was used and P value less than 0.05 were considered significant.

RESULTS:

Table (1) illustrates the socio-demographic characteristics of the studied population, KSA, 2018. A total of 503 consumers visiting community pharmacies in the target cities, participated in the survey. Most responders were female (64.6%), the participants were predominantly in the age group 30-40 years (32.0%) followed by age group 20-30 (30.4%). The majority (70.0%) of them was married and 27.4% were single. Most (79.7%) of the respondents were highly educated (university or more).

Table (2) demonstrates Pattern of self medication, frequency of self-medication during the last 6 months and source of drug information among the participants, KSA, 2018. A percentage of 5.6% of the participants always purchased the drugs without prescriptions, 25.0% sometimes, 23.7% rarely and 45.7% never purchased the drugs without prescriptions. most of them 62.0% purchased non prescribed drugs 1-3 times within the previous 6 months. The source of information about the medications was the pharmacist in 22.9%, the physician in 28.6%, relatives in 26.6% and other sources as friends, internet, reading and nurses constitute small percentages of sources of information.

Table (3) shows Table (3): The most common reasons for self-medications, the most common medications purchased without prescriptions, Improvement and occurrence of problems due to self medication in studied population. The most common reasons for self-medications was Influenza and common cold 18.1% followed by dental problems 10.5% and the most common medications purchased without prescriptions were analgesics/antipyretics 23.1%, antibiotics 17.4% and antispasmodics 6.8%. Improvement on self medication was reported by 83.3%, occurrence of problems in only 5.8% but only 24.1% recommend self medication to others.

Table (4) demonstrates the relationship between self medication and education, age group and sex among the studied population,. Most of the self-medication were females ($P<0.05$). University educated constitute 80.2% sometimes and 78.6% of always self-medication cases and 77.8% of never self medication cases ($P>0.05$). No statistically significant difference regarding age group and self medication among the participants ($P<0.05$).

Table (1): Socio-demographic characteristics of the studied population, KSA, 2018 (N=503)

Characteristics	**No.**	**%**
Age group		
• Less than 20 years	77	15.3
• 20 -	153	30.4
• 30 -	161	32.0
• More than 40 years	112	22.3
Minimum 10.00	Maximum 70.00	Mean ± SD 33.4±10.9
Sex		
• Female	325	64.6
• Male	178	35.4
Marital status		
• Divorced/ Widow	13	2.6
• Married	352	70.0
• Single	138	27.4
Educational level		
• Basic education	12	2.4
• Secondary	90	17.9
• University or more	401	79.7

Table (2): Pattern of self medication, frequency of self-medication during the last 6 months and source of drug information among the participants, KSA, 2018 (N=503)

Variable	No.	%
Pattern of self medication		
• Always	28	5.6
• Sometimes	126	25.0
• Rare	119	23.7
• Never	230	45.7
Frequency of self-medication (in the last 6 months)		
• 1-3 times	312	62.0
• 4-6 times	66	13.1
• More than 6 times	125	24.9
Source of drug information in self-medication cases		
• Pharmacist	115	22.9
• Physician	144	28.6
• Relatives	134	26.6
• Reading	45	8.9
• Friends	34	6.8
• Internet	31	6.2

Table (3): The most common reasons for self-medications, the most common medications purchased without prescriptions, Improvement and occurrence of problems due to self medication in studied population, KSA, 2018 (N=503)

Reasons for self-medications	No.	%
• Skin allergy	25	4.9
• Arthritis and back pain	35	6.9
• Bronchial asthma	41	8.1
• Burns	23	4.5
• Abdominal or renal colic	47	9.3
• Contraceptive methods	41	8.1
• Dental problems	53	10.5
• DM + hypertension	45	8.9
• Dysmenorrheal	25	4.9
• Hemorrhoids	17	3.3
• Influenza and common cold	91	18.1
• Needs tonics	60	11.9
The most common medications purchased without prescriptions		
• Anti-inflammatory drugs	116	23.1
• Antibiotics	88	17.4
• Antispasmodics	34	6.8
• Tonics	31	6.2
• Anti allergic drug	5	1.0
• Anti- hypertensive drugs and Diabetes TTT	28	5.6
• Bronchodilators	33	6.6
• Contraceptives	29	5.8
Improvement		
• Yes	419	83.3
• No	84	16.7
Occurrence of problems due to self medication		
• No	474	94.2
• Yes	29	5.8
Recommend self medication to others		
• No	382	75.9

• Yes	121	24.1

Table (4): relationship between self medication and education, age group and sex among the studied population, KSA, 2018 (N=503)

Variable	Responses	Self medication				Total (N=503)	P value
		Sometimes (n=126)	Always (n=28)	Never (n=230)	Rare (n=119)		
Education	Basic	5	1	4	2	12	0.66
		4.0%	3.6%	1.7%	1.7%	2.4%	
	Secondary	20	5	47	18	90	
		15.9%	17.9%	20.4%	15.1%	17.9%	
	University or more	101	22	179	99	401	
		80.2%	78.6%	77.8%	83.2%	79.7%	
Age group	<21	26	5	21	25	77	0.02
		20.6%	17.9%	9.1%	21.0%	15.3%	
	21-30	30	8	74	41	153	
		23.8%	28.6%	32.2%	34.5%	30.4%	
	31-40	38	8	87	28	161	
		30.2%	28.6%	37.8%	23.5%	32.0%	
	>40	32	7	48	25	112	
		25.4%	25.0%	20.9%	21.0%	22.3%	
Sex	Female	72	20	162	71	325	0.04
		57.1%	71.4%	70.4%	59.7%	64.6%	
	Male	54	8	68	48	178	
		42.9%	28.6%	29.6%	40.3%	35.4%	

DISCUSSION:

Self-medication is the use of drugs to treat self-diagnosed disorders, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms [9]. The US Food and Drug Authority has defined Over the Counter medication as "drugs that are safe and effective for use by the general public without seeking treatment by a health professional" [10]. The practice of self-medication is common in both developed and developing countries. It may even be more common than the use of prescribed medication [11]. It was also reported that self-medication influenced by many factors like age, sex, medication knowledge, previous experience of disease, non-seriousness of illness [12]. It increases the chance of illegal drug use, dependence and masking the underlying disease which generate drug resistance and impede diagnosis [13].This is a cross-sectional community based study was conducted on general population in KSA which include 503 participants. This study aims to find the prevalence of self-medication and associated factors in KSA, It also aims to assess the attitude of respondents who had experienced self-medication. According to prevalence of self-medications our study found that there were 25% of participants sometimes used drug without prescriptions and 5.6% of them always purchased the drugs without prescriptions. Our result was less than another study conducted in Arar city, the capital of Northern province, KSA which indicated that 53.9% of the respondents had practiced self-medication practice [14]. In a recent survey of 500 patients attending primary health care centers in Riyadh, Saudi Arabia was carried out to determine the prevalence and factors associated with self-medication practice. It was reported that 35% of patients attending primary care centers have some experience with self-medication [15]. A study from Bahrain reported that 44.8% of medical students have self-medication [16]. Many studies conducted in different parts of the world such as the United States [17], the United Kingdom [18], Spain [19], Germany [20], France [21], Mexico [22], Singapore [23], Turkey [24], Pakistan [25], Jordan [26], Kuwait [27], Egypt [28] and Sudan [29] vary in their estimation of the percentage of patients who practice self-medication, with prevalence rates that range from about 13% to 92%.

Regarding to source of drug information in self-medications cases, our study found that physician was the most common sources by 28.6% followed by relatives 26.6% and pharmacist 22.9%. However, in Arar, another study reported t that the most common source of information for self-medications was the

pharmacist (40.5%) followed by the physician (16.0%) and friends 17(13.0%) [14].Another study reported that the most common sources of information stated were physicians and pharmacists (80.2%), medicine pamphlets (58%), followed by friends and family (27%), and online sources (n=95, 22%) [30].

As regards reasons for self-medications we found that dental problems were the most common one by 10.5% followed by abdominal or renal colic 9.3% and 8.9% for DM and hypertension. Another study found that the most common reasons for self-medications was common cold (16.8%) [14].In Central Saudi Arabia another study reported that the most common reasons for buying medications without a prescription were that the symptoms were too minor to visit a doctor (54%), time saving (40%), and minor illnesses for which the participants knew the required treatment (40%) [30].Also, Alghanim in his study in Riyadh, KSA indicated that the most common reason for self-medication was the minor illness [15].

According to medications purchased without prescriptions, our study reported anti-inflammatory drugs by 23.1% and antibiotics by 17.4%. However, another study found that the most common medications purchased without prescriptions were analgesics/antipyretics 41(31.3%), antispasmodics 25(19.1%) and antibiotics 14(10.7%) [14]. This results were similar to those reported in previous research conducted in Riyadh, KSA by Aljadhey et al; who revealed that the most common medication for self-medications was analgesics/ antipyretics 61(41.8%) [30].

CONCLUSION AND RECOMMENDATIONS:

Self-medication is still considered a common public health problem in Saudi Arabia as the results of the current study indicated that 5.6% of the participants always and 25.0% sometimes, purchased the drugs without prescriptions. So we recommend conducting large scale researches focusing on the causes and methods of prevention of this problem. We also recommend health education of the public to increase the consumers' awareness about the hazards of self-medication especially with antibiotics.

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