

Knowledge, Attitudes and Behavior regarding Antibiotics Use and Misuse among Adults in the Community of Lahore, Pakistan

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Abstract- Objective The aim of this retrospective study was to assess knowledge, behavior and attitude towards antibiotics use among adult population of Lahore Pakistan.

Study Design Descriptive / retrospective study.

Plan and Duration of Study 3rd July to 31st August, 2017.

Materials and Methods This study represents a cross sectional survey using an interviewer administered questionnaire. Data collected from a random sample of adult people, recruited at different settings, regarding their knowledge about the effectiveness of, resistance toward, and self-medications with antibiotics against bacterial, viral and parasitic diseases.

Results Only 40% people used antibiotics within last 2 months. 84% people had taken antibiotics from medical store or Pharmacy. Only 44% people thought that antibiotics are used for bacterial infections. 77% are not agreed to use unfinished antibiotics in future. Only 42% people answered 7 or less to be an appropriate duration of antibiotic use. Only 36% adults knew that antibiotics can cause ADR. 71% people never use left-over antibiotics without physician consultation. 68% adults are agreed to visit the doctor immediately if they experience any ADR from taking antibiotics. 60% adults think that symptoms of illness reduced during antibiotic use while 23% adults think that resistance developed during antibiotic use.

Index Words Antibiotics, adverse drug reaction, self-medication, resistance

I-Introduction

Antibiotics are viewed as most usually sold medication class in the developing countries. The irrational and abuse of antibiotics result not just in the resistant bacterial strains yet in addition in adverse responses and monetary weight on national wellbeing framework. This nonsensical utilize emerges from the financial elements, wellbeing arrangements concerning therapeutic protection, absence of doctors' concerns about long term resistance and impact as opposed to treating current manifestations, pharmaceutical promoting and the sale of antibiotics without prescription in a few nations.

In Pakistan, patients visit a drug store to buy a pharmaceutical item much like they would at a market. Likewise, as most other developing nations, having a valid

prescription isn't generally implemented for getting prescription only medications (POM) [1].

The greater part of antibiotics (80%) is prescribed in essential care. Outpatient antibiotic utilization is higher in elderly patients than in the all-inclusive community and most antibiotics are recommended in elderly patients for respiratory tract infections (RTI), skin and delicate tissue infections and urinary tract infections (UTI). Adverse drug events (ADEs) are additionally connected with antibiotic use and all the more much of the time in frail elderly with co-morbidity and co-medication. Furthermore, elderly patients have altered pharmacokinetics, for example, diminished absorption and decreased elimination, which alters antibiotic blood levels, along these influencing the risk of ADEs.

Despite the fact that the antibiotics have wide variety of uses yet at the same time their abuse can prompt resistance towards extensive range of pathogens and bacteria. There might be a few elements prompting the abuse or overuse of antibiotics. These components which prompt abuse of antibiotics might be at the patient level or at the level of specialists. These elements can be named as social elements, behavioral elements, financial status of patients and level of education both at the level of medical experts and patients particularly in our community. Recently, it is thinking that antibiotics period may arrive at an end due to expanded resistance of pathogens towards antibiotics and because of less production of new agents [2]. Resistance to first-line medications to treat infections caused by *Staphylococcus aureus*—a typical reason for serious infections in health facilities and the community—is across the board. Individuals with MRSA (methicillin-resistant *Staphylococcus aureus*) are evaluated to be 64% more prone to die than individuals with a non-resistant type of the infection [3].

Self-medication with antibiotics is a typical practice, which may likewise prompt the development of antimicrobial resistance (AMR) — a noteworthy health concern around the world. Pharmacists have to play a noteworthy part in judicious utilization of antibiotic medications. In 2008, FIP published an updated articulation on AMR entitled, FIP Statement of policy - control of antimicrobial medicines resistance (AMR) (18), whereby FIP takes liability for the expert authority through a range of activities [4].

II-Material and Methods

The retrospective study was conducted almost for the period of 2 months. Data was collected from a random sample of adult people, recruited at different settings, regarding their knowledge about the effectiveness of, resistance toward, and self-medications with antibiotics against bacterial, and viral diseases. The data was collected from 115 adults of both sexes. Adult males and females were included in this study.

III-Results

According to the survey, only 40% people used antibiotics within last 2 months (Fig.1). Only 23% adults had taken prescribed (from a doctor or a nurse) antibiotics (Table: 1). 84% people had taken antibiotics from medical store or pharmacy (Fig. 2). Only 44% people thought that antibiotics are used for bacterial infections (Fig. 3).77% are not agreed to use unfinished antibiotics in future (Table: 2).

Only 42% people answered 7 or less to be an appropriate duration of antibiotic use (Fig. 4) (Table: 2) Only 36% adults knew that antibiotics can cause ADR (Table: 2). 77% people take antibiotics after meal while 2% take with meal (Table: 3). 68% people never use antibiotics on relative advice (Table: 3).71% people never use left-over antibiotics without physician consultation. While 6% people use left-over antibiotics without physician consultation (Table: 3). 68% adults are agreed to visit the doctor immediately if they experience any ADR from taking antibiotics (Table: 3).60% adults think that symptoms of illness reduced during antibiotic use while 23% adults think that resistance developed during antibiotic use (Fig. 5)(Table: 3).

Figure: 1

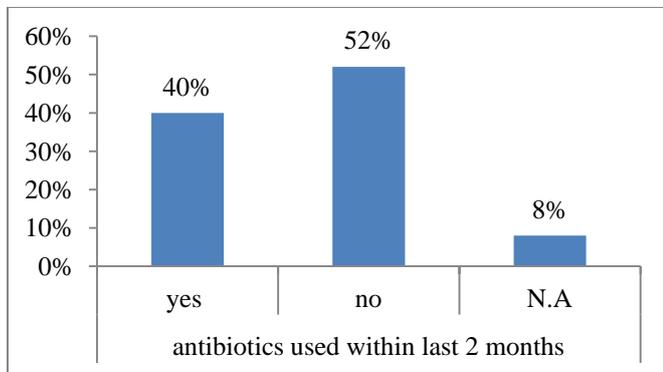


Figure: 2

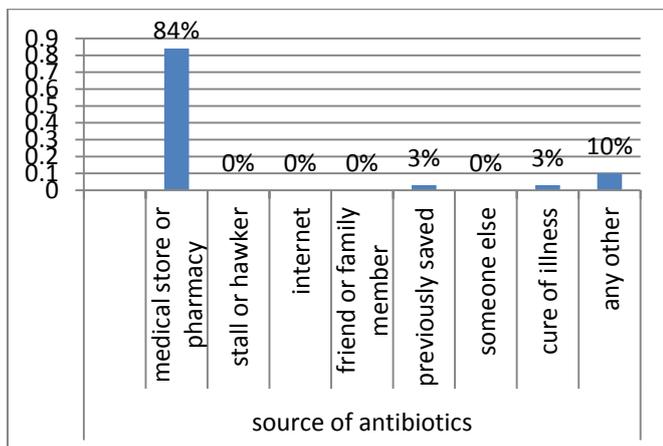


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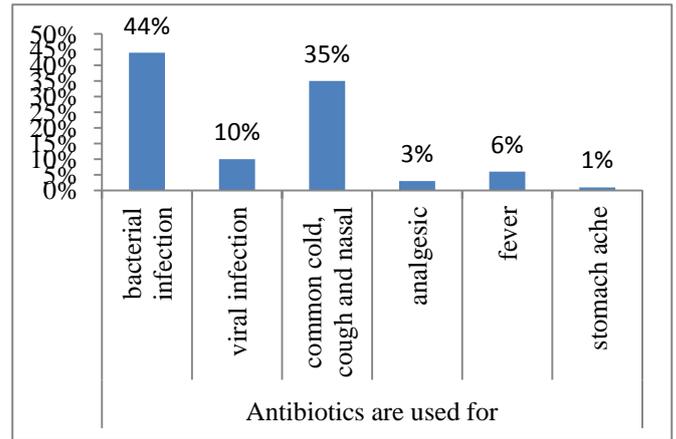


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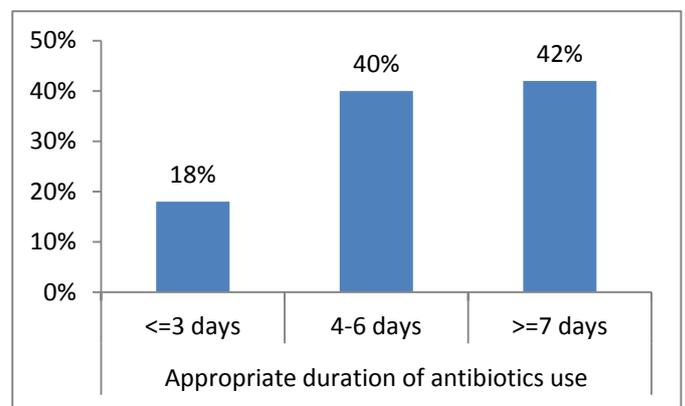


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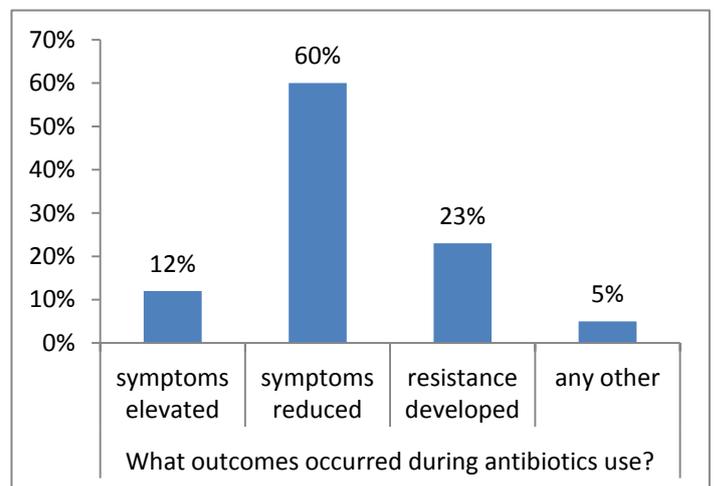


Table 1. Demographic characteristics

Parameters	Number	Percentage
Gender		
• Males	30	26
• Females	85	74
Age		
• Males	15-49 years	
• Females	16-48 years	
Co morbid diseases	16	14
Medication use within last 2 months	40	35

Antibiotics use within last 2 months	46	40
Antibiotics had taken on prescription (from doctor or nurse)		
• Yes	27	23
• No	72	63
• Can't remember	13	11
• Not answered	3	3

Table 2. Knowledge and Beliefs about Antibiotics

Parameters	Number	Percentage
Antibiotic is use for		
• Bacterial infection	51	44
• Viral infection	12	10
• Common cold, cough and nasal congestion	40	36
• Analgesic	4	3
• Fever	7	6
• Stomach ache	1	1
Will antibiotic always be effective in the treatment of same infection in future		
• Yes	36	31
• No	79	69
Can unfinished antibiotics be kept to use in the future		
• Yes	26	23
• No	89	77
Appropriate duration of antibiotic use		
• <3days	21	18
• 4-6days	46	40
• >7days	48	42
Appropriate period of antibiotic use		
• Period indicated by physician or pharmacist	54	47
• Period indicated in drug leaflet	19	17
• Period indicated by family members or friends	4	3
• Until disappearance of symptoms	14	13
• Until relief of symptoms	20	17
• Until relief of symptoms	4	3
• Not answered		
Are antibiotics safe medications		
• Yes	54	47
• No	14	12
• I don't know	47	41
Can antibiotics cause adverse drug reactions		
• Yes	42	36
• No	21	18
• I don't know	52	46

Table 3 Attitude and Behavior towards Antibiotic Use

Parameters	Number	Percentage
When would people take antibiotics		
• Before meal	10	9
• With meal	2	2
• After meal	89	77
• Before or after (no preference)	14	12
How would people take antibiotics		
• With water	104	90
• With tea	2	2
• With juice	3	3
• Any other	6	5
In general, how do people store oral antibiotic/ tablets and capsules		
• In a medicine cabinet	70	61
• On kitchen shelf	21	18
• In the refrigerator	24	21
People keep antibiotics at home for emergency for children		
• Yes	32	28
• No	83	72
People use siblings' (brothers and Sisters) antibiotics when you are ill?		
• Always	3	3
• Sometimes	44	38
• Never	68	59
People use antibiotics on relative advice		
• Always	3	3
• Sometime	33	29
• Never	79	68
People use left-over antibiotics without physician consultation		
• Always	6	6
• Sometime	27	23
• Never	82	71
If people experienced adverse effects from taking antibiotics, what would they do		
• Stop taking the antibiotics	23	20
• Visit the doctor immediately	78	68
• Not be concerned	14	12
People told about outcomes occurred/showed during antibiotic use		
• Symptoms elevated	13	12
• Symptoms reduced	69	60
• Resistance developed	27	23
• Any other	6	5

III-Discussion

Misconceptions about antibiotic use among community members potentially lead to inappropriate use of antibiotics

in the community. This population-based study was aimed at examining common knowledge, attitudes and behavior survey conducted in Yogyakarta City of Indonesia, Italy, Jordan and Lithuania^{[5][6][1][7]}.

In this study, data was collected from Private and Government Educational Institutes and from residents of Lahore by means of questionnaire regarding knowledge, attitudes and behavior regarding antibiotics use and misuse. 115 adults were interviewed. They were all of different ages. They were including both from unmarried and married population.

According to the survey, 78% adults have no co morbid diseases while 14% have co morbid disease. 35% adults used medicines within last two months. Only 40% people used antibiotics within last two months. Only 23% adults had taken prescribe (from a doctor or a nurse) antibiotics while 63% had taken antibiotics without prescription. One of the previously conducted studies in Italy reveals the use of antibiotics as one-third of the respondents self-classified them as users of self-medication since they had taken an antibiotic without the prescription of a physician^[6].

84% people had taken antibiotics directly from medical store or pharmacy while 3% used previously save antibiotics and the previous studies conducted in Italy showed the same fact as the majority of the self-medication users said that they already have antibiotics at home and or they buy them directly at the pharmacy without a prescription^[6].

Only 44% people thought that antibiotics are used for bacterial infections while 10% thought that antibiotics are used for viral infections and 35% thought that antibiotics are used for common cold, cough and nasal congestion. It is almost same findings as that of a previous study conducted in Jordan. This previous study reveals that out of the total respondents, 32.9% agreed correctly that antibiotics are effective only against bacteria, whereas, 6.9% of respondents incorrectly agreed that antibiotics are effective against viruses. Half of the respondents are agreed that antibiotics work on common cold, cough and nasal congestion^[1].

77% are agreed not to use unfinished antibiotics in future. The previous study conducted in Jordan has same finding as almost only one third of the respondents thought that unfinished antibiotics can be used in future^[1].

Only 42% people answered 7 or less to be an appropriate duration of antibiotic use while 18% adults answered 3 days or less to be an appropriate duration of antibiotic use. This finding is same as that of previously conducted study in Lithuania which reveals the considerably low percentage of the respondents (15.1%) indicated 3 days or less to be an appropriate duration of antibiotic use^[7].

According to our study, 47% adults used antibiotics for a period indicated by Physician or Pharmacist while 17% adults used antibiotics for the period indicated in drug leaflet and 17% used till the relief of symptoms. 36% adults are agreed that antibiotics can cause ADR while most of the people did not know about adverse drug reactions. Therefore, it is necessary that physicians should inform patients about

about antibiotic use in adult people in the community of Lahore, Pakistan like a cross sectional population-based the adverse effects of self, abuse and overuse of medication. Physicians should also prescribe the exact dosage according to the patient's age and weight requirement and instruct them to complete full antibiotic course.

In our study, only 2% adults would take antibiotics with meal while 77% adults would take antibiotics after meal and 90% of the respondents would take antibiotics with water. It is same finding stated in the previous study conducted in Jordan that majority (94.0%) reported taking antibiotic with water^[1]. Half of the respondents, 59% answered that they never use sibling antibiotics when they were ill.

Almost one third of the respondents, 28% answered that they keep antibiotics at home for emergency for children. Most of the people 71% answered that they never use left-over antibiotics without physician consultation. Only 6% people used left-over antibiotics without physician consultation. 68% people answered that they did not use antibiotics on relative advice while 29% adults answered that they sometime use antibiotics on relative advice. These findings regarding attitude and behavior towards antibiotic use are almost same as the findings in the previous study conducted in Jordan. According to this previous study, almost one third of respondents kept antibiotics at home for emergency use for children younger than 12 years of age, and almost half of respondents indicated that they did use left-over antibiotics (antibiotics remaining from uncompleted previously prescribed courses) without physician consultation. Fifty-two percent used antibiotics based on a relative advice^[1].

More than half of the adults, 68% answered that they visit the doctor immediately if they experience any ADR from taking antibiotics and half of the respondents, 60% thoughts that symptoms of illness reduced during antibiotic use while 23% adults thought that resistance developed during antibiotic use.

The present survey has generated information about knowledge, attitudes, and behaviors regarding antibiotics issues in the adult population. This study has highlighted lack of proper knowledge of antibiotic use and its misuse among community. The results of this study are helpful in planning effective antibiotic awareness programs and guiding patients. Effective public education initiative should not only disseminate information, but also provide practical and appropriate means to change their behavior. Improvement of knowledge and awareness can improve health practices.

IV-Conclusion

Irrational antibiotics use is a major reason for the spread of antibiotic resistance. This survey indicates the irrational antibiotic use among the adult public. We tried to evaluate the current knowledge, attitude and behavior regarding antibiotic use and reasons for resistance development among adult population. We believe that this study is useful in describing people's knowledge and beliefs regarding antibiotic use among adult community. These findings may be useful to help develop intervention to decrease misconceptions regarding antibiotic use and to increase people's awareness regarding the risks of inappropriate use of antibiotics in the community. It is concluded that there is a need not only to educate patients about antibiotics, but also to educate physicians to prescribe antibiotics according to guidelines

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