

Patient's Perspectives Regarding Use and Misuse of Antibiotics; A Cross Sectional Study

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ABSTRACT

OBJECTIVE: To understand and evaluate the perspectives of patient regarding use and misuse of antibiotics.

METHODOLOGY: This cross-sectional study was conducted at rural health center SANN from November 2018 to May 2019. Both male and female patients over the age of 15 years were included in this study subjected to their willingness by convenient sampling. Sample size was 628. A self-structured questionnaire was used for data collection. Data was analyzed using SPSS Version-24

RESULTS: Sample size was 628 out of which 43.2% were male (n=271) and 56.8% were female (n=357). Around 65% responded that antibiotics were always safe to use and 79% responded that they take antibiotics from friends and family without even consulting medical practitioner and 72% had purchased antibiotics even without prescriptions. Self-request for unnecessary prescriptions of antibiotics was reported by 83% of the respondents.

CONCLUSION: This specific study reflects a gap regarding the appropriate knowledge about usage of antibiotics and owing to this the misuse is likely to happen.

KEYWORDS: Perspectives, Antibiotics, Misuse, Resistance

This article may be cited as: Aleem S, Asif M, Bahadur S, Mushtaq M, Hassan W. Patient's Perspectives Regarding use and Misuse of Antibiotics; A Cross Sectional Study. J Liaquat Uni Med Health Sci. 2021;20(02):153-6. doi: 10.22442/jlumhs.2021.00838

INTRODUCTION

Humans have a vast history of using antibiotics spread over the decades. Globally, antibiotics are among the most common and regularly prescribed drugs. At the same time, in the underdeveloped and developing countries, antibiotics are sold over the counter routinely. Irrational use of antibiotic leads to antibiotic resistance. The problem is not with the antibiotics but lies in the way these drugs are used. The World Health Organization set the theme of the World Health Day as "Combat Antimicrobial Resistance: No Action Today, No Cure Tomorrow"¹. As per September 2013 report of the U.S. Center for Disease Control and Prevention (CDC), "treatment of antibiotic-resistant infections adds \$35 billion to health care costs and 8 million hospital days per year in the United States"². Globally, approximately 50 % of these are purchased without any prescription. Worldwide, many pharmacies and street vendors had no license for such type of illegal activity³. Due to lack of implementation of proper rules and regulation, the improper use of antibiotics is leading source of antibiotics resistance in developing and under developed countries⁴. In today's modern age, the antibiotics are prescribed for all systemic as well as dental infections so as to reduce the spread of infections to adjoining tissues⁵. Although several cases had been reported where the infections reoccur despite the use to antibiotics and make the efficacy of treatment quite objectionable. Due to improper use of antibiotics in the form of self-medication has

contributed a lot in developing antibiotic resistance not only in Pakistan but also in countries like Saudi Arabia^{6,7}. Various studies revealed an alarming increase in the patients demanding antibiotics even when not required or prescribed by their physician⁸. In rural population, due to increased illiteracy and lack of knowledge, the patients carry forwards the beliefs that any drug or antibiotic previously effective on any other family member or relative will be equally effective on them in case of similar symptoms. This myth forces them to self-medication practices. In middle eastern countries like Jordan, Kuwait and Saudi Arabia the studies revealed the unsatisfactory knowledge pertaining to the use of antibiotics^{4,9,10}. Hence the sole aim and objective of this specific study was to access the state of knowledge pertaining to the antibiotics use and also to get access the practices prevailing concerning to use as well as misuse of antibiotics in the patient reporting to dental outpatient department of rural health center, Sann in district Jamshoro.

METHODOLOGY

This cross-sectional study was conducted at dental outpatient department at RHC SANN, Jamshoro Sindh from November 2018 to May 2019. Departmental permission and ethical approval were taken (MS-RHC/Sann/160/). Convenient sampling technique was incorporated and the patients reporting to dental OPD over the age of 15 years were included in this study regardless of gender and subjected to their

willingness. All the patients reporting to general OPD and emergency regardless of their age and gender were excluded from this study.

Sample size was calculated using openepi.com with 95% confidence level and 4% absolute precision. The anticipated proportion of patient in the favor of self-prescription was 51.4%¹¹ Total sample size was 600 and anticipating a 10% non-response rate, the overall sample size was 660. Informed consent was taken from all the participants. The data from 32 questionnaire was incomplete and missing so was not included in final analysis.

The questionnaire was structured to access the demographic profile and the level of knowledge and attitude about use and misuse of antibiotics. The first part of questionnaire covered the demographic profile including name, age, gender, area of residence, education level etc. The second part accessed the knowledge and practices regarding antibiotic's use and misuse. The confidentiality of all the participants was ensured. Data was analyzed using SPSS version 24.

RESULTS

Total 628 participants were included in study. The Table I represents the demographic profile of the participants including gender, age, marital status and educational status of the participants. 43.2% were male and 56.8% were female, 81% participants belonged to age group 15-49. 78.3% were married and 21.7% were unmarried. 55.2% were uneducated, 25.3% were middle pass and 19.5% were high school pass.

TABLE I: DEMOGRAPHIC PROFILE OF THE PARTICIPANTS

Variables	Frequency	Percentage
Gender		
Male	271	43.2
Female	357	56.8
Age groups		
Below 50 years age	509	81
Above 50 years age	119	19
Marital status		
Married	492	78.3
Unmarried	136	21.7
Educations background		
Illiterate	346	55.2
Middle	159	25.3
High school and above	123	19.5

Figure I represents the knowledge status of the study

participants regarding use or misuse of antibiotics.

FIGURE I: KNOWLEDGE OF PARTICIPANTS REGARDING USE AND MISUSE OF ANTIBIOTICS

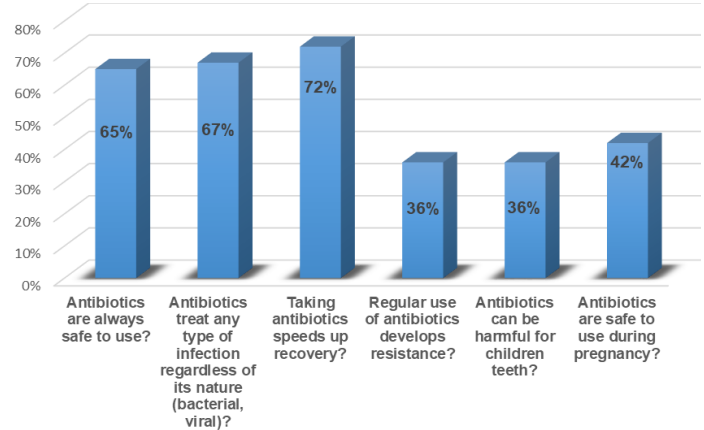


Table II represents the attitude and practices pertaining to use and misuse of antibiotics. 64% of the respondents revealed that they had purchased antibiotics from outside the hospital at least once in lifetime and 72% has purchased antibiotics without any prescription. 79% mentioned that they even take antibiotics mentioned by friends or family without even consulting doctor. Full course of treatment was completed by only 47% of the patients where as 53% don't complete full course of treatment. 83% had the habit of demanding doctor to prescribe antibiotics unnecessarily and 83% self-medicate themselves for ailments like cough and sore throats. 66% of the patients keep the antibiotics in kitchen cabinets or in open in house where as 34% didn't follow this practice.

TABLE II: ATTITUDE AND PRACTICES REGARDING USE AND MISUSE OF ANTIBIOTICS

Attitude and practices regarding use and misuse of antibiotics	Yes	No
Antibiotic purchased from outside the hospital at least once	64%	36%
Antibiotic purchased ever without prescription	72%	28%
Antibiotics used mentioned by friends or family without even consulting doctors	79%	21%
Full course of treatment completed even if felt better	47%	53%
Unnecessary antibiotics at home to be used later	55%	45%
Self-request doctors for antibiotics prescription even if it is not needed/ unnecessary	83%	17%
Antibiotics used even for cough and sore throat on self-medication basis	83%	17%
Antibiotics kept in kitchen cabinets/ open?	66%	34%

DISCUSSION

Since the study was conducted in a rural population, 55.2% of the respondents were illiterate. This was similar to the results of another study where 42.8% of the study participants were illiterate¹². Owing to the lack of education majority of the participants were not having requisite knowledge regarding the appropriate use of antibiotics. In this specific study, 65% labelled the antibiotics to be safest for the use and 72% thought that they speed up their recovery. In a study conducted in the Karachi, 73.3% respondents revealed that antibiotics were effective in treating both bacterial and viral infections where as in this specific study 67% thought that antibiotics can treat any type of infection¹³. Respondents (36%) didn't know that regular use of antibiotics can develop resistance and we can assume that major contributing factor is again the illiteracy and lack of proper knowledge about antibiotics. In this specific study around 64% of the respondents did not know if antibiotics were harmful for children teeth which are quite close to a study conducted in Saudi Arabia where almost half of the respondents were lacking in knowledge regarding safety of antibiotics and their effects on child's teeth¹⁴. Surprisingly, around 58% of the respondents considered antibiotics were not safe to use during pregnancy. 64% of respondents had purchased antibiotics from outside hospital which was in line with the results of another study where 68.5% had purchased these from outside hospital¹⁵.

The study revealed the poor practice regarding antibiotic purchase without prescription and around 72% had practiced this. This is quite related to different studies conducted in various parts of the world where such practices are regularly observed¹⁶⁻¹⁸. It was also similar to a study where nonprescription dispensing of antibiotics was 63.1%¹⁹. Another practice observed in this study was that majority of the respondents (79%) used antibiotics mentioned by friends or family members based on their own experiences without consulting physician. This was in line with the results of a similar studies where around friends & family members were source of self-medication^{13,20}. This practice is quite common in various households in Pakistan as people get inspired from the experience of other although their symptoms can vary from other along with different nature of infection. Similarly, 53% respondents of this study didn't complete full course of treatment of antibiotics and they stop taking them as soon as symptoms are relieved or the moment, they feel better so this is another cause of developing resistance as both over and under dose are major contributing factor and they also keep them at home to be used later if any of the family members might develop similar symptoms in future.

A study reported the left-over use of antibiotics and incorrect dosage as related to antibiotic compliance

and misuse²³. In the rural population of Pakistan, the concept of a pill for every ill not only prevails but it makes them force the physicians for prescribing drug of their choice. In this specific area, it was observed that patient agree (83%) that they force for unnecessary prescription. The major contributing factor to this mind set is lack of any awareness regarding the proper need and usage of such drugs and also the ease of getting over the counter medication even when physician refuse to unnecessary prescription.

This also leads to the practice of self-medication and it was also observed in this study. This self-medication practice can be attributed to the fact that in many adjoining rural areas people tend to avoid travelling to nearby medical facility and prefer to use the ones available at home or in neighborhood. They also tend to avoid long waiting hours in jam-packed outpatient department in health facility.

As discussed, the misuse of antibiotics in terms of self-medication do exist in rural population and over the counter sales of antibiotics without prescription and lack of awareness tend to make it more prevalent.

CONCLUSION

People in rural settings lack proper knowledge regarding use of antibiotics which is reflected by the practices they exhibit. It is highly important not only to give awareness in this regard but also to take strict measure regarding over the counter sale of antibiotics in these areas.

Ethical permission: Medical Superintendent Rural Health Centre SANN permission letter No. MS-RHC/Sann/-160, dated 25-10-2018.

Conflict of interest: There is no conflict of interest in authors.

Funding: There was no funding from any agency or institution.

AUTHOR CONTRIBUTIONS

Aleem S: Principle author, Data collection

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Bahadur S: Data analysis

Mushtaq M: Proof reading

Hassan W: Tool validation

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