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Original Research Article

Survey on antibiotics prescription and resistance on medical and dental practitioners

Kanchan Shah¹, Asma Mohd Shoeb Fruitwala^{1*}, Jayant Landge¹, Nilesh Ubale¹, Mahesh Pund¹, Shelly Sharma¹

¹Dept. of Oral and Maxillofacial Surgery, Government Dental College and Hospital, Aurangabad, Maharashtra, India



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ABSTRACT

Background: The objective of this research was to find out how much medical and dental professionals and interns in Maharashtra knew about the current situation regarding usages of antibiotics and its over usage which leads to antibiotic resistance over time. A self-administered survey created with Google Forms that asks about the extent of usage of antibiotics.

Materials and Methods: A survey was conducted among the medical and dental professionals practicing in the state of Maharashtra from 01 September 2023 to 15 October 2023 analyse the extent of usage of antibiotics among patients and to draw their attention towards the excessive usage of antibiotics and problems related to it with proper evidence. A total of 570 responses were obtained during the survey among which there were 17.2% medical practitioner, 28% Dental practitioner, 14.4% Medical interns and 40.4% Dental interns. During the survey it was found that 61.5% of respondents prescribe antibiotics on a regular basis. Our study offers regional data to guide future initiatives in a nation with high antibiotic consumption rates. Through Google forms, the Modified Questionnaire was disseminated among the Maharashtra participants. Participants were made aware that the replies were kept confidential. The sole data programme choice available was MS EXCEL, which was used to code, enter, and analyze the data. For qualitative and quantitative variables as well as percentages, statistical analysis in the form of frequencies and percentages was utilized in their study.

Results: Over 60% of survey respondents prescribed antibiotics. It was discovered that over 70% of participants get patients who purchase antibiotics without a prescription. Over 70% of patients do not take their antibiotics as prescribed. It was found that about half of these individuals had at some point complained about antibiotics not working.

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1. Introduction

Recently, it is observed that due to inappropriate use of antibiotics there has been an increase of infection with resistant bacteria.¹ Therefore, Educating people, including both the patients and healthcare professionals, about the judicious use of antibiotics should be an important aspect of preventing the emergence as well as spread of resistant

bacteria.¹⁻³ To Educate the before mentioned group or community, we first require both of their understanding and attitude towards antibiotic use and resistance. Antibiotic use recently and inappropriately are known risk factors for contracting a resistant bacterial infection. Therefore, encouraging wise antibiotic usage should be the main component of plans to stop the emergence and spread of resistant micro-organisms.¹⁻⁴

A global issue is antimicrobial resistance (AMR). It is among the significant effects of the unwise

* Corresponding author.

E-mail address: asmafruitwala98@gmail.com (A. M. S. Fruitwala).

use of antibiotics by the general public and medical professionals.⁵⁻⁷ Inappropriate teaching and training of medical professionals, advertising of pharmaceutical corporations, and interactions between patients and doctors are some examples of the illogical use of antibiotics. Other examples include using antibiotics without a prescription and exchanging leftover antibiotics. However, a lack of information and awareness of antibiotic usage and AMR among the general people and healthcare professionals is the frequent factor causing illogical antibiotic use.^{1,8-12}

The study mentioned and conducted during this survey puts forward the degree of understanding, knowledge and real life observations by the health care professionals on antibiotic misuse, overuse or under use among the general public in the state of Maharashtra contributing to bacterial resistance. This study further aims on sustainable and right use of antibiotics among the community members. Therefore, decreasing the cases of antibiotic resistance built in infectious bacteria.

2. Materials and Methods

The study was performed from 01 September 2023 until 15 October 2023. The researchers designed a self-contained, organised questionnaire based on the study objectives, similar surveys, and a review of recent literature. The questionnaire was constructed using Google Forms for data collection. Questions about antibiotic usage modes, patients taking over-the-counter medications, sensitivity testing, patient compliance with antibiotic use, and antibiotic resistance are all included.

The participants were asked to respond to the questionnaire using their own expertise on the topic. Ten volunteers, who were not part of the main participant group, were enrolled in the pilot study. The statistician, researcher, and institute ethics committee registration number, ECR/684/INST/MH/2014/RR-17, all validated the questionnaire.

Several modifications were made to make it more understandable in response to the findings. This questionnaire was created without reviewer approval.

Through electronic means, the Modified Questionnaire was disseminated among the Maharashtra participants. They received assurances regarding their privacy. A sample of 484 was created by checking the completed questionnaires and excluding the ones that were not complete. The only option for data software is MS EXCEL for data coding, entry, and analysis.

For qualitative and quantitative variables, several techniques used descriptive statistics in the form of frequencies and percentages.

3. Results

More than 60% of participants of survey prescribed antibiotics .it was found that more than 70% of participants get patient who take antibiotic over the counter. More than 70% of the patient do not follow proper antibiotics dosages.it was observed that around 50% of such patients had complained of ineffective antibiotics at some point of time.

A total of 570 respondents completed the survey among which 40.4% were dental students, 28% were dental practitioners, 14.4% were medical students and 17.2% were medical practitioners. The surveys were completed online using Google forms.

It was found that the majority of the Medical and dental professionals often prescribe antibiotics regularly to their patients. The number were as high as 61.5% as compared to those 38.5% doctors who do not prescribe antibiotics regularly.

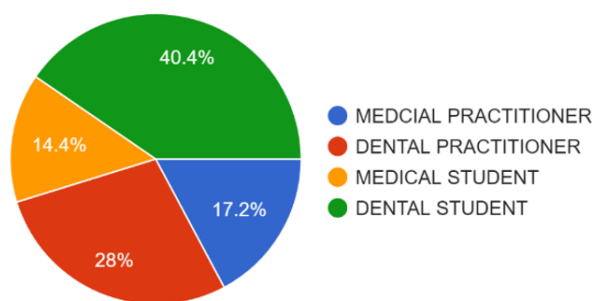


Figure 1: Question 1- Population in the survey group

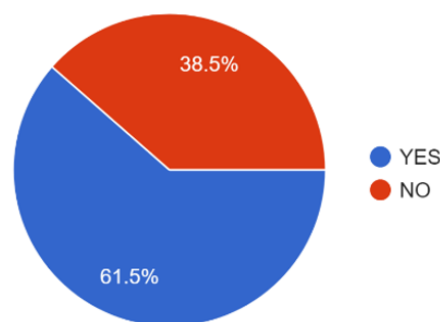


Figure 2: Question 2- Antibiotics prescription

4. Discussion

To our knowledge, this is the first poll that directly evaluates the general public's knowledge, comprehension, and attitudes about antibiotic use and antimicrobial resistance in Maharashtra. Despite a high level of understanding, it was found that there is still room for development. These include

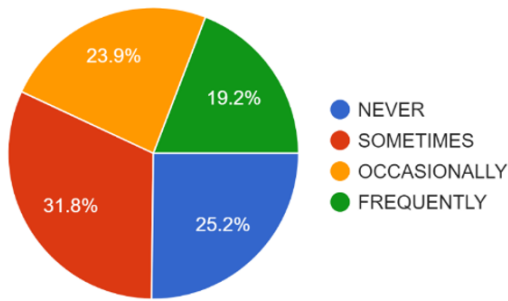


Figure 3: Question 3- Over the counter antibiotics

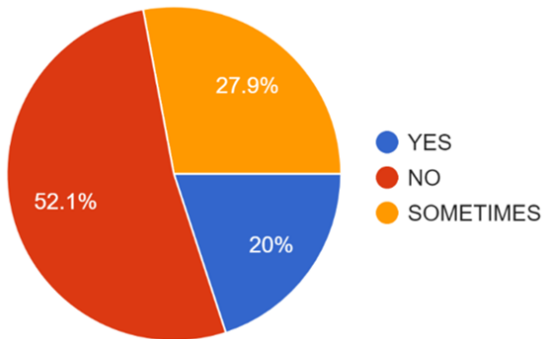


Figure 4: Question 4- Culture and sensitivity test

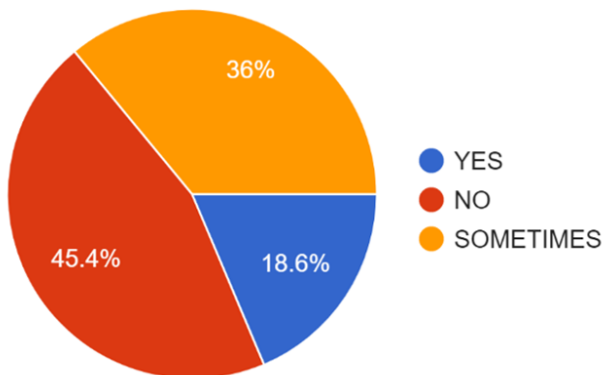


Figure 5: Question 5- Incomplete dosages of antibiotics

knowledge of the reasons why antibiotics are used, the processes that lead to antibiotic resistance, and the necessity of a diversified strategy to battle resistance.

5. Conclusion

This study helps to correlate the lack of knowledge and the increase in the antibiotics resistance. This so called Antimicrobial resistance can be brought under control by proper education and awareness about it. These findings will guide future engagement initiatives to ensure data-driven campaigns and community stewardship initiatives with the goal of enhancing healthcare quality in a nation with a high

prevalence of antibiotic consumption.

6. Source of Funding

None.

7. Conflict of Interest

None.

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Author biography

Kanchan Shah, Professor and HOD

Asma Mohd Shoeb Fruitwala, PG Student

Shelly Sharma, Assistant Professor

Jayant Landge, Associate Professor

Nilesh Ubale, Assistant Professor

Mahesh Pund, Assistant Professor

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