Community members' and Dentists' perceptions for treatment seeking behavior regarding management of oral diseases in an underprivileged area:A Qualitative study

Abstract

Background: Antibiotic resistance affects generations. It is a major health issue. Resistanceto antibiotics is on the rise globally. The absence of proper regulatory mechanism and free access topharmaceutical agents have led to self-medication and inappropriate therapeutic and prophylactic prescription.

Method:A qualitative study using focus group discussions (FGDs) for data collection was conducted in an underprivileged colony in Karachi, Pakistan. Community members and Dentists were considered.

Result: There weretwo major themes that emerged from the analysis. 'Knowledge associated with common oral diseases and their consequences' and 'Home remedies and treatment seeking behavior'. The focus group discussions showed that the perceptions of community members and dentists was based on Bad oral hygiene, lack of awareness of oral disease outcome andbarriers in pursuing treatment by Dentists. There was a lack of Government healthcare facilities and poor professional attitudesand futile law enforcement regarding medicine dispensing and disposal.

Conclusion: The value of this study is to understand the perceptions and determinants of health seeking behavior and recognize the reasons for use and misuse of antibiotics. There is a great need for Government intervention and inexpensive treatment for the masses.

Introduction

Resistance to antibacterial is increasing globally and antibiotics whether rational or irrational contributes to this effect.[1,2]. We are facing not only epidemics but pandemics of antibiotic resistance[3]

The development of resistance to antibiotics is on the increase amongst pathogenic bacteria globally[4].However, to counter the situation, very few new antibiotics have come into use in the last three decades and thus there is a need to conserve the antibiotics we already have.[5] Extensive measures need to be taken worldwide as well as in individual countries to curb this trend.One way is to develop clinical practice guidelines and contextualized educational material.[6]

In Pakistan, the changing focus of health care from traditional to western scientific practices, has resulted in free access topharmaceutical agents for health care providers and communities in the absence of proper regulatory mechanisms[7]. Research has often focused on patients' contribution to inappropriate use of medication while less attention has been paid to the role of professionals, especially Dentists to this growing problem. The increase in antimicrobial resistance has emphasized the need for rationalization of antibiotic use in the treatment of infections[8].

In the UK, prescriptions of General Dental Practitioners are limited by the Dental Practitioners Formulary. According to the data of 1997 General Dental Practitioners issued >3.5 million antibiotic prescriptions, which is about 7% of all antibiotics prescribed in England[9].In Pakistan there is no formulary for Dentists to follow.Dentistsconstitute of a group

of medicine prescribers (including antibiotics) while the information on perceptions, treatment seeking and practice behavior by Dentistsof Pakistan is scarce[10,11].

Dentists rely on antibiotics for the treatment of a wide variety of odontogenic and non-odontogenic conditions where the purpose of these prescriptions can be preventive or therapeutic[2]. About 6-10% of all antibiotic prescriptions made by Dentists[5]. Recent studies have shown that general dental practitioners prescribe inappropriately both therapeutically and prophylactically and that several non-clinical factors can affect prescribing[12].However in general, very little information is available on prescriptions from Pakistan[13].Our recently published paper in Pakistan shows an increase in antibiotic prescription by Dentists of Pakistan over the years and also that antibiotic prescription habits vary in different cities of Pakistan[8].

Very little information is available on the perceptions, knowledge and understanding of general dental practitioners concerning the use of antibiotics in everyday clinical practice. Also, no information is available on community members perceptions and treatment seeking and practice behavior regarding management of oral diseases.

The published research in prescribing antibiotics and regarding knowledge and reported practice of Dentists in Pakistan is quantitative. This fails to explain the thought process of Dentists as well as the community members regarding management of common oral problems. Qualitative research can fill in these gaps as it provides detail insight into individual thoughts.[14,15]. Therefore, a qualitative study was conducted in a poor area in Karachi, Baloch Colony and amongDentists of one of the teaching hospitals, Liaquat College of Dentistry and Medicine, LCMD, in Karachi, Pakistan. Following the information on increase in prescriptions of antibiotics by Dentists in Pakistan[8], this study was conducted to seek community members and Dentists' perceptions for treatment seeking and practice behavior, respectively.

The aim of our qualitative study was to explorecommunity members and Dentist's perceptions and treatment seeking and practice behavior, respectively, regarding management of common oral problems in an underprivileged Pakistan.

Methods

We used qualitative research being most appropriate for identifying and exploring the perspectives of the respondents themselves, rather than quantifying the researcher's preconceptions. Qualitative methods do not seek to generate statistically representative data; rather the goal is to generate important themes from a range of relevant respondents.

Study Settings

A qualitative study using Focus group discussions (FGDs) for data collection was conducted in Baloch colony in Karachi, Pakistan.

Baloch Colony is one of the neighborhoods of Jamshed Town in Karachi, Sindh, Pakistan. There are several ethnic groupsin the area including Muhajirs, Punjabis, Sindhis, Kashmiris, Seraikis, Pakhtuns, Balochis, Memons, Bohras Ismailis and Christians. Mostly population is Muslims. Estimated population of the area is around 1 million.The socio- economic status is mediocre; males are employed in different jobs, like company clerks and office jobs etc and females are mostly housewives. Males are the sustainer of their families and their monthly income ranges from 12000 to 25000 rupees. Education level is mostly average, men are more

educated than women. Education level for females is mostly primary and secondary, and for males is mostly secondary and bachelors.Our assumption is that Baloch colony is representative of most low- income areas in the city of Karachi, and for Pakistan in general.Besides the community members, we also had two FGD groups ofDentistsfrom Liaquat College of Medicine and Dentistry (LCMD), Karachi, Pakistan.LCMD is a private hospital affiliated with DarulSehat Hospital Karachi.

Participants/ Subjects

We selected "purposive sample" of community members from Baloch colony and Dentists from LCMD, Karachi, Pakistan for data collection. We conducted four FGDs among community members and two FGDs among Dentists. Participants were selected from Baloch colony, with a young (30-44 years) and older group (45-60 years) of five participants each of female and male group.Two FGD groupsconstituted of Junior Dentists (20-40 years) and Senior Dentists (41-50 years) with five to seven participants The inclusion criteria were Dentists employed full time working in their respective outpatient departments.Male Dentists also worked in private clinics in the evening. Participation was voluntarily and confidentiality was assured, no payment was offered nor given to any of the participants.
Detailed information about the focus group members is presented in Table 1.

Data collection procedures

A general FGD guide with slight modifications for community members and Dentists was prepared with Introductory and probing questions regarding: (i)common oral health problems, (ii) symptoms and management of oral problems, (iii) antibiotic usage and resistance.
The data collection team consisted of two facilitators (HI and WN) an observer and a note taker. Six FGDs involving 33 participants were conducted between August 2020 to August 2021 (Table 1). Participants were selected to ensure variation in age, work experience and gender. Twogroups consisted of young male and female participants aged between 30-40years from the communityandtwo groupsconstituted older males and female participantsaged 45-60years.Discussions were conducted in Urdu language. Focus group 5and 6 constituted of Junior Dentists aged 20 to 30yearsand Senior Dentists aged 40to50years.Discussions with Dentists were conducted in Urdu and English. FGDs were carried out in locations chosen by the participants, lasted 40-60 minutes.

Data management and analysis

All FGDs were audio tapedafter taking consent from all participants. The audio files were transcribed verbatim and Urdu transcriptions were translated into English. The transcripts were analyzed using latent content analysis [16]. Latent content deals with the identification of the underlying meaning of the text.The transcripts were organized into "meaning Units". A meaning unit is a term that is commonly used in qualitative content analysis. It refers to part of the original transcript that carries a specific meaning and related to the aim of the study, and generally consists of several words taken directly from the transcript.
Each unit was processed into a condensing meaning unit and codes are derived. Similar codes were coalesced into subcategories, which were sorted and further conflated into categories, leading to the emergence of themes.A category is a group of related codes. The theme illustrates the underlying meaning of the text. During the conduct of the procedure, the tape-

recorded versions and the Urdu and English were consulted repeatedly during the coding procedure to understand the full meaning of the text. The analyses were discussed repeatedly amongthe authors, who have various backgrounds (pharmacy, microbiology and dentistry and public heath), are of both genders, and come from Pakistan and Sweden.

Ethical Approval

The study was approved by the Ethical Review Board Committee of IshratulIbad Khan Institute of Dow University of Health Sciences, Karachi, Pakistan.
Participants were given oral information about the study before the FGDs,and written consent was obtained; participation was voluntary. Names of the participants were kept confidential.

Results:

Table 1: Characteristics of participants in focus group discussions on common oral health problems and antibiotic resistance in Baloch Colony, Karachi, Pakistan.

		Total (N)	Male (N)	Female (N)	Age	
FGD-1	Group 1-Females (young group)	5	0	5	31-38	Housewives; Primary (3), Secondary (2)
FGD-2	Group 2- Females (old group)	5	0	5	42-55	Housewives; Primary (3), Secondary (2)
FGD-3	Group 3- Males (young group)	5	5	0	30-41	Office jobs, clerks; Secondary (3), Bachelors (2)
FGD- 4	Group 4- Males (old group)	6	6	0	48-55	Office jobs, clerks; Secondary (1), Bachelors (5)
FGD-5	Group 5- Juniors Dentists	7	2	5	22-39	Dentists; experience (1-13 years); PH (5), PH&C(2)
FGD- 6	Group 6- Seniors Dentists	6	3	3	41-44	Dentists; experience (10-20 years); PH(3), PH&C (3)
Total		34	16	18		

Schooling; primary (5 years), secondary (12 years), bachelors (14 years). Experience in dental practice (years). Private hospital (PH), Clinic (C), Private hospital and Clinic (PH&C).

Two mainthemes that emerged from the analysis(Table 1)
Theme I: ‘Knowledge associated with common oral diseases and their consequences’
Theme II:‘Symptoms, home remedies and health seeking behavior’

The findings are presented undereach major theme/category/subcategory with quotesfrom the respondents at the end of each paragraph.

Theme I: 'Knowledge associated with common oral diseases and their consequences'
This theme evolved from two categories

i) *Bad oral hygiene*
ii) *Lack of awareness of oral diseaseoutcome.*

i)Bad oral hygiene:
The people belonging to low socioeconomic status have poor oral hygiene They experience bad breadth, bleeding gums, cavity, puswith unpleasing dirty teeth.They have limited knowledge about the initiating factors and preventive measures.But they were aware of the symptoms leading to Oral disease. They understand that their teeth got extracted because of severe infection. Allparticipants generally felt pain while eating food. They would experience pain when they had hot or cold food. Some participants were tobacco and betel nut consumers.According to young dentists most common oral diseases they come across is Dental caries and calculus accompanied with sensitivity and bleeding gums. Senior Dentists said they commonly saw patients mostly come with gingivitis and generalized pain in mouth. gingivitis and generalized pain in mouth.

A group with young males from educated working class said,'I have pus and my teeth are loose……, Most of my teeth are extracted due to infection.'(Focus group 3)
One other subject said 'Common oral health problems include holes in teeth with pain and loose teeth. I have blisters and ulcers in my mouth and sometimes pus is also present.'(Focus group 4)

*ii) Lack of awareness of oral disease outcome.*The persons interviewed present with very less knowledge or misinformation about the oral disease. According to some subjects, poor oral hygiene can lead to cancer. Some think proper scaling can lead to loosening and loss of teeth. All dentists observed that patients coming with gingivitis and sensitivity is based on bad oral hygiene and eating habits.

A patient *from young female group said 'Well, I have heard that mouth infection if not treated or wrong treatment is given then cancer can happen.'' (focus group1) 'No treatment can lead to spread of infection and wrong treatment such as using unsterilized instruments can lead to hepatitis C.''(focus group 4)*

Theme II: 'Home remedies and treatment seeking behavior'.
This theme evolved from two categories

i) *Self-medicationtreatment with kitchen spices and painkillers*
ii) *Barriers in pursuing treatment by a Dentist*

i)Self-medication treatment with kitchen spices and painkillers

The participants preferred self -medication. Theychose short term and economical remedies for relievingpain. They even visited alternative religious doctors or Charlatans as an inexpensive means to eradicate oral disease.

Mostly female participants used Salt and cloves, Vinegar, mouthwash, Panadol,Vibramycin, Augmentin,Amoxil. One of the male participants even mentioned that he used petrol rinse for relieving pain.

One of the female said''I use salt mixed with hot oil but if this dose not work then I just rinse my mouth with vinegar or go to the doctor.''Another said '' I use clove oil and salt."(Focus grp1 and 2)

Junior Dentists said , ''They prefer alternative doctors or go for household treatment and when the disease is of high level only then they go to the Dentists'' Another said ,''Patients use clove due to high cost of treatment''(focus group 5)

ii)Barriers in pursuing treatment by a Dentist

Dental treatment is expensive. They are unable to spend on dental treatment. They prefer going to Charlatan/Charlatans if treatment is inevitable and it is also economical. The Government hospitals don't have the facilities. Most participants think treatment is not necessary and home remedies are cheap way to cure. They prefer doing self- medication and get temporary relief from pain instead of going to a dentist and getting a complete treatment done. Some talked about a Dental anxiety and fear of dental treatment.

One of the participants from female group said,'I use antibiotic and I don't consult anyone'.
Another female said, 'I use vinegar and I avoid going to the dentist.'' (Focus grp2)
Junior Dentists said,'Patients avoid high cost of treatment.'
Senior Dentists said,'They go to the Charlatans for low-cost treatment.''
Another said, 'they avoid the dentist due to fear' (Focus grp5&6)

Discussion

This is a qualitative analysis based on understanding the insight of
Community members and Dentists for treatment of Oral diseases in an underprivileged area of Karachi Pakistan. There is anincrease in prescriptions of antibiotics by Dentists and a trend of self-medication amongst underprivilegedcommunity. People of that community use homeremedies, painkillers, and inexpensive antibiotics without following any dosage.
The purpose of this paper is to identify the inappropriate use of medication by community and professionals and to highlight the increasing cause of antibiotic resistance.The development of resistance to antibiotics is on the increase amongst pathogenic bacteria globally.[7,16]Extensive measures need to be taken worldwide as well as in individual countries to curb this trend[1,2,4]. One way is to develop clinical practice guidelines and contextualized educational material throughout the country.
All participants in the focus group were quite aware of Oral diseases commonly encountered.But there was lack of awareness of the consequences of the disease They all suffered with conditions likebad breadth, bleeding gums, cavity, pus and unpleasing dirty teeth.
The participants of FG1and 2 were females who were not very educated. They were conscious of the pain caused by cavity, food impaction, swelling and bleeding gums. But they all

preferred self-medication with clove oil, vinegar and salt and pain killers like Brufen and Panadol.They will go to a dentist only if they can't bear the pain after self-medication. They also had a misconception about getting Hep C if wrong treatment is done by a dentist. The older women in FG2 preferred taking inexpensive antibiotics like Vibramycin without consultation and avoid visiting a dentist because of money factor.
The Focus group with young and older males. They are mostly graduate and working in companies. They all suffer from bleeding gums, ulcers and pus Mostly are tobacco users. Some of them have got their teeth extracted to get rid of the tooth pain. Mostly said they try to self-medicate with clover powder or salt water,tobacco, or snuff and one of the participants said he rinses his mouth with petrol for pain relief. Mostly participants used Amoxil or Augmentin with no proper dosage.Some of them even go to some religious doctor to get holy powder or go to Charlatans/Charlatans for treatment because they are inexpensive. They find Dentists very expensive even though they understand that going to a dentist will cure their problem.They want Government should intervene and provide high quality free dental treatment. Dentists should provide free dental checkup and advise and cheap treatments.

Focus group 5and 6 constituted of younger and senior Dentists. Both groups agreed that the most common Oral diseases they came across were Gingivitis caries and calculus. The progression of the disease was due to bad oral hygiene and no treatment.According to them the patients prefer alternative measure like home remedies or going to Charlatans. They visit a dentist when situation gets out of control. This leads to loss of teeth.
Mostly Dentists prescribe antibiotics like Amoxil and Augmentin after proper dental treatment because it is broad spectrum and low-cost.But the patients do not follow the dosage properly and that leads to antibiotic resistance.
All the Dentists agreed that there must be Government involvement for promoting health programs free dental programs for awareness and free samples

In conclusion, it has been seen that the main purpose of patient is pain relief and not a permanent treatment. They are quite unaware of the consequences of short-term treatment due to lack of knowledge. They are not consistent with preventive measures neither do they follow any dosage for antibiotics[12]. This may lead to antibiotic resistance. There is a great need for Government intervention and inexpensive treatment for the masses.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

References:

1. Farzeen Tanwir, Getano Maroon, Amna Tariq, Cecilia Stalsby, Lundborg. Diagnosis andprescribing patterns of antibiotics and painkillers amongst dentists. Oral Health prev Dent 2015,13:73-83.

2. English, B. K., & Gaur, A. H. (2010). The use and abuse of antibiotics and the development of antibiotic resistance.In Hot Topics in Infection and Immunity in ChildrenVI (pp. 73-82). Springer New York

3. CarsO, Hogberg LD, Nordberg O, Sivaraman S, Lundbord CS et al. Meeting the challenge of antibiotic resistance. BMJ 2008;337: a 1438

4. Krushna Chandra Sahoo, A J Tamhankar, Eva Johansson, Cecilia StålsbyLundborg antibiotic use, resistance development and environmental factors: a qualitative study among healthcare professionals in Orissa, India BMC Public Health 2010, 10:629.

5. Tanwir F, Khiyani F. Antibiotic resistance: a global concern.J Coll Physicians Surg Pak 2011;21:127–129.

6. Mevius DJ, Sprenger MJ, Wegener HC. EU conference 'The Microbial Threat'. Int J Antimicrob Agents 1999; 11:101–105.

7. Siddiqi S, Hamid S, Rafique G, Chaudhry SA, Ali N, Shahab S et al. Prescription practices of public and private health care providers in Attock District of Pakistan. Int J Health Plann Manage 2002; 17:23–40

8. Tanwir F, Khan S. Antibiotic prescribing habits of dentists of major cities of Pakistan. J Pak Dent Assoc 2011; 20:160-3.

9. Palmer NA, Pealing R, Ireland RS, Martin MV. A study of prophylactic antibiotic prescribing in National Health Service general dental practice in England. Br Dent J 2000; 189:43-6.

10. Palmer NO, Martin MV, Pealing R, Ireland RS. An analysis of antibiotic prescriptions from general dental practitioners in England. J Antimicrob Chemother 2000; 46:1033–1035.

11. Dar-Odeh NS, Abu-Hammad OA, Al-Omiri MK, KhraisatAS, Shehabi AA. Antibiotic prescribing practices by dentists: a review. Ther Clin Risk Manag 2010; 6:301-6.

12. Poveda Roda R, Bagan JV, Sanchis Bielsa JM, Carbonell Pastor E. Antibiotic use in dental practice: a review. Med Oral Patol Oral Cir Bucal 2007; 12:186-92.

13. Syed Nabeel Zafar, Reema Syed, Sana Waqar, Faria A Irani and Sarah Saleem. Prescription of medicines by medical students of Karachi, Pakistan: A cross-sectional study.BMC Public Health 2008, 8:162

14. Forman JJ, Legesse-Miller A, Coller HA. A search for conserved sequences in coding regions reveals that the let-7 microRNA targets Dicer within its coding sequence. Proceedings of the National Academy of Sciences. 2008 Sep 30;105(39):14879-84.

15. SC Joshi,VDiwan,AJTamhankar,R.Joshi, H Shah, M.Sharma, A.Pathak, R.MacadenStalsbyLundborg. Qualitative study on perceptions of hand hygiene among hospital staff in rural teaching hospital in India. Journal of hospital Infection 2012,1-5.

16. U.H. Graneheim, B. Lundman. Qualitative content analysis in nursing research: concepts, procedures, and measures to achieve trustworthiness. Nurse Education Today (2004) 24, 105–112