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"Quacks Medication and Self-Prescription: Antibiotics Practices in Districts Zhob and Sherani, Baluchistan; Fueling the Antimicrobial Resistance Challenges"

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Abstract:

Introduction: One concerning public health concern in low- and middle-income countries (LMICs) is antimicrobial resistance (AMR). Antimicrobial resistance is developed by inappropriate and over use of Antimicrobials which are made to kill infectious pathogens. Inappropriate use of antibiotics without proper knowledge, prescribed by non-experts, not including proper diagnostic tests create challenges for treating serious infections. The antimicrobial resistance carries latent risks to individual as well as in the community.

Objectives: This cross-sectional study was designed to assess the inappropriate use of antibiotics. This was a Survey-based research conducted in Zhob & Sherani of Baluchistan, Pakistan. This study was also aimed to determine the quantity of private health clinics & clinicians and their qualification, knowledge and treatment of infectious diseases by self-medication without any diagnosis.

Results: This study revealed that the knowledge of antibiotic prescribers about antibiotic resistance was low and self-medication was most common practice. The ratio of self-prescribers in rural area was (96%) as compared to urban area (91%). The educational background of antibiotic prescribers was MBBS (10%), BDS (2%), Medical technician (44.44%), dispenser (21.11%), F. Sc. (10%), matriculation (12.22%). The most commonly prescribed medicine was antibiotics (88%), and painkillers.

Conclusion: Therefore, the improper usage and self-medication of antibiotics in Low & middle income or developing countries requires more surveillance, awareness programs and prevention control strategies. Specific treatment for the specific pathogens through an Antibiotic Sensitivity Testing in highly recommended in order of staying ahead of the evolutionary genetic makeup high resistant pathogens.

Key words: Antimicrobial resistance (AMR), Quacks medication, Self-prescription, Low and middle income countries (LMICs), antibiotics, surveillance, antibiotic sensitivity testing (AST).

Introduction

Getting and using medications for diagnosis or therapy monitoring without a doctor's advice is known as self-medication. Stated differently, the use of any drug not prescribed by a licensed healthcare provider or the use of any other over-the-counter pharmaceutical is considered self-medication. (1). The Centers for Disease Control and Prevention (CDC) has recorded several bacteria for emergent multidrug resistance overtime against antibiotic drugs as a result of which an individual is exposed to a greater risk of infection and a lack of treatment options make the improvement process difficult and risky (2). Drug resistance is moveable from human to animal most common example is *methicillin resistant staphylococcus aureus (MRSA).* Self-medication is the most general reason for the development of human pathogen resistance to antibiotic drugs (3). The frequency of self-medication is influenced by a number of factors, including age, education level, drug manufacturer advertising, laws governing the distribution and trade of pharmaceuticals, and prior encounters with the disease's symptoms. (4).

Unchecked ridiculous antibiotic use and unawareness of people about the complete Knowledge about the course of antibiotics, their side effects, standard acceptable quantity limits, and antibiotic overdose issues are the potential reasons for improper or incorrect treatment or even missed conclusions and in most cases can lead to microbial resistance issues with increased morbidity (5). Very few studies have been conducted in Pakistan regarding misuse or self-prescription of drugs leading the nation toward resistance and showing a high rate of prevalence of 51% (6).

Recently, a vaccine preventable disease Typhoid outbreak reported in Hyderabad and Karachi districts of Sindh Province. This new clone has been shown to be resistant to all three first line antibiotics, namely, ampicillin, chloramphenicol and cotrimoxazole, as well as third generation cephalosporin and fluoroquinolones. According to the World Health Organization Tuberculosis (TB) reports, Pakistan ranks fifth in the world in the prevalence of multidrug resistant TB, with an unusual burden of approximately 1.3 million patients report every year, for countless reasons (7). Previous studies have shown that self-medication is high in females, who visit health care and who are of lower socioeconomic status (8). In Pakistan, almost all pharmacies offer medications without providing instruction; this is a common occurrence in developing nations. Antibiotics and possibly addictive medications are therefore widely accessible to the general public. The general public is ignorant of the potentially fatal consequences of several of these medications due to this and low awareness. Additionally, when it comes to basic healthcare, the public turns elsewhere rather than to doctors for assistance with issues due to a lack of quality primary care and financial concerns. In spite of this, there is a dearth of research on the subject of self-medication in Pakistan, and this issue has not been addressed. This study presents the result of the Pakistani youth's knowledge, attitude, and carry out towards self-prescription mostly when they are infected and start treatment without the diagnosis of the specific pathogen (9). The private sector in Pakistan is at peak and responsible for providing 80% healthcare to the general population (Pakistan Medical Research Council, 1998) through self-prescription and without proper diagnostic tests (10).

This study was much needed as very little data is available about the Quacks Medication and Self-Prescription in Pakistan and more specifically from under developed areas of Baluchistan. This study was designed to identify the disparities in antibiotic practices including overuse, underuse and inappropriate use and to learn about rhubarb. This study was aimed to conduct a survey among college students, common people and nomads to measure availability of antibiotics at home against most common infections such as cough & cold etc. and to explore the problems of poor infection control in healthcare, particularly symptom based treatment and overuse of antibiotics.

Methodology

A cross-sectional study research was conducted in two districts of Baluchistan province (Zhob & Sherani) through questionnaires total number of it were 450. 350 questionnaires are distributed throughout the Zhob district's medical facilities, and the remaining 50 are split equally between the district's Zhob Girls and Boys Collage. This survey investigated the stock of antibiotics in markets & homes, their uses, and prescriptions. The questionnaire consisted of multiple-choice questions. Ask about its gender, age, qualification, experiences, knowledge about antibiotics, and its action. The research aimed to identify the potential gap in antibiotic prescription practices such as over-prescription, under-prescription, or inappropriate prescription, and explore the reasons behind these discrepancies. The questions were also filed by both genders girls and boys in government colleges about the stock of antibiotics in their homes and the use of antibiotics for common diseases etc. cough, Flu, diarrhea. Typhoid, malaria, and other group of common local diseases, and its Investigation about the mistreatment of disease in medical health care without the knowledge and diagnosis of diseases, symptoms-based treatment, or asymptomatically. The villagers or nomads have free access to antibiotics. And how the people of these communities are taking overs-dose of antibiotics and misusing without having knowledge about resistance.

The fifty (50) questionnaires were distributed in district Sherani or Sherani an entirely rural sub district in the Zhob division. The questionnaire was also distributed in a rural area of district Sherani and its private health care center & Government boys collage manikhwa Sherani. The questionnaire was based on three parts, nonacademic-based clinics, educational-based, and among college students (11). The Physicians who have strong enough knowledge background in medication are supposed to be responsible for both private as well as Government sector health care (12).

The district had 310,354 residents at the time of the 2017 census, with 168,239 men and 142,114 women. According to the 2017 census, Zhob's population increased to 255,692 in the new census of 2023. There were 264,190 people living in rural areas (85.12%), 46,164 people living in urban areas (14.87%), and the people living in the Sherani district There are 153116 people living in District Sherani as per the 2017 census. There are 68115 females and 84994 males in the total population. The Sherani district's population, according to the 2023 census, is (191,687).

Results

In all, 450 questionnaires in all, 450 questionnaires from various districts and colleges were sent out in the survey that was done for this study. With 77.78% of the 350 questionnaires given being answered, District Zhob had the highest response rate. In contrast, just 11.11% of the 50 sent questionnaires in District Sherani received a response. Additionally, out of the 25 surveys distributed, District Zhob Girls College and District Zhob Boys College both had a same response rate of 5.56%. These results show that response rates varied among the studied region's educational institutions and geographical areas.

With a response rate of 80 %, This clinical-based survey was completed by the clinician, who were 30 ± 2 years old on average. About 10% had specialization from registered medical colleges and were medical specialists in private clinics while leftover nonmedical students and had technician level knowledge or got medical practices from a private hospital. It was discovered that the frequency of self-medication was 91% in an urban area and 8.8% were through the specialized medical diagnostic center while in the rural area self-medication district Sherani was found (95%) and (5%) antibiotics prescribed by kit diagnosed test (Widal test) and (RDTs), (Fig. 1) showing prescription, knowledge, and qualification**.**

The most common factors that led to it were "preceding experience with similar symptoms" and self-perception of the "trivial nature of the problem. The most common symptoms that ahead in self-medication were (GI, Respiratory, UTI, skin) by antibiotics (85%) and antiprotozoal (3%) and antiviral (2%), and fever (3%) and painkiller (4%), and ant allergies (3%) were among the most commonly used drugs.

In such a manner the prescription of antibiotics is at its peak in that prescriber who has declined knowledge about the multiple drug resistance. (Fig. No. 2) declares antibiotics, antiviral presence in medical centers and uses of antibiotics, and prescription of antibiotics without the diagnosis. The frequency of use of these medicines is given (Fig. No. 1) antibiotics, anti-allergic, and anti-pyretic were prescribed randomly based on symptoms without a proper way of diagnosis. Mostly 80 % of students mentioned that fever, anti-allergic, and antibiotics are available at home and 20 % mentioned at a time of need we prescribed from medical

worker uses medicinal names. The whole society is plunged into self-medication treatment in rural as well as urban areas of these two mentioned districts.

In the questionnaire, the medical worker mentioned that the bacterial diseases were treated with random self-prescribed antibiotics for the symptoms. If Medicine were not working, then it would be changed toward a broad spectrum. The medical worker mentioned that we have received negative feedback that the action of the drug is not enough for to treat disease.

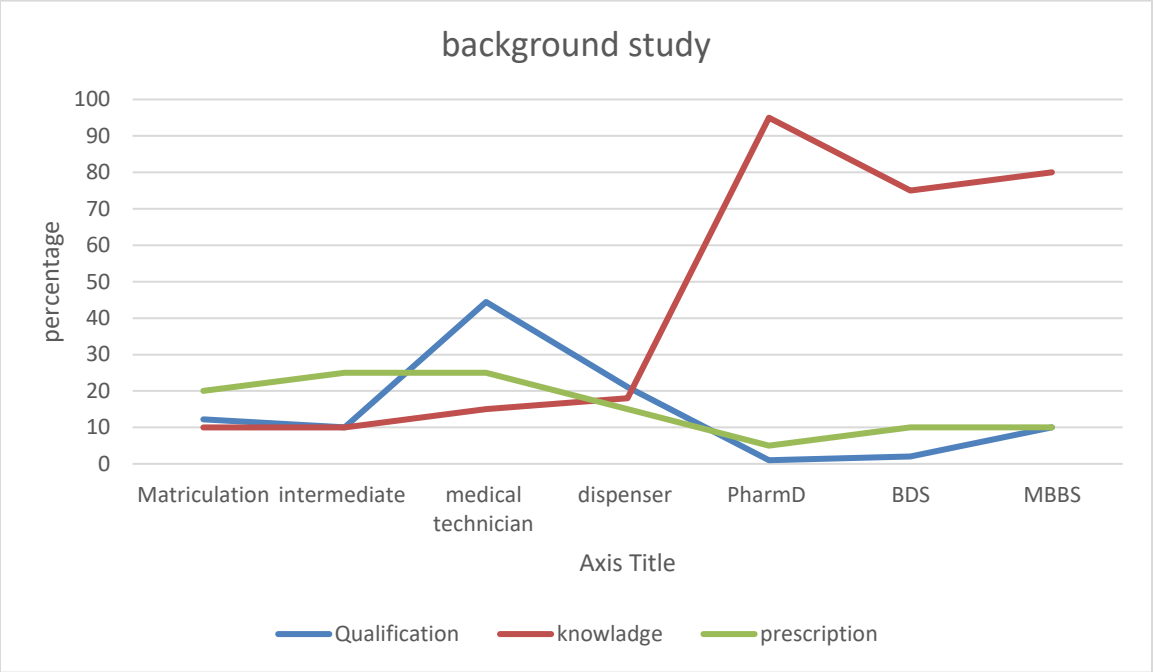

Figure No. 1. Shows clinical data in two districts' background knowledge, prescription, and qualification

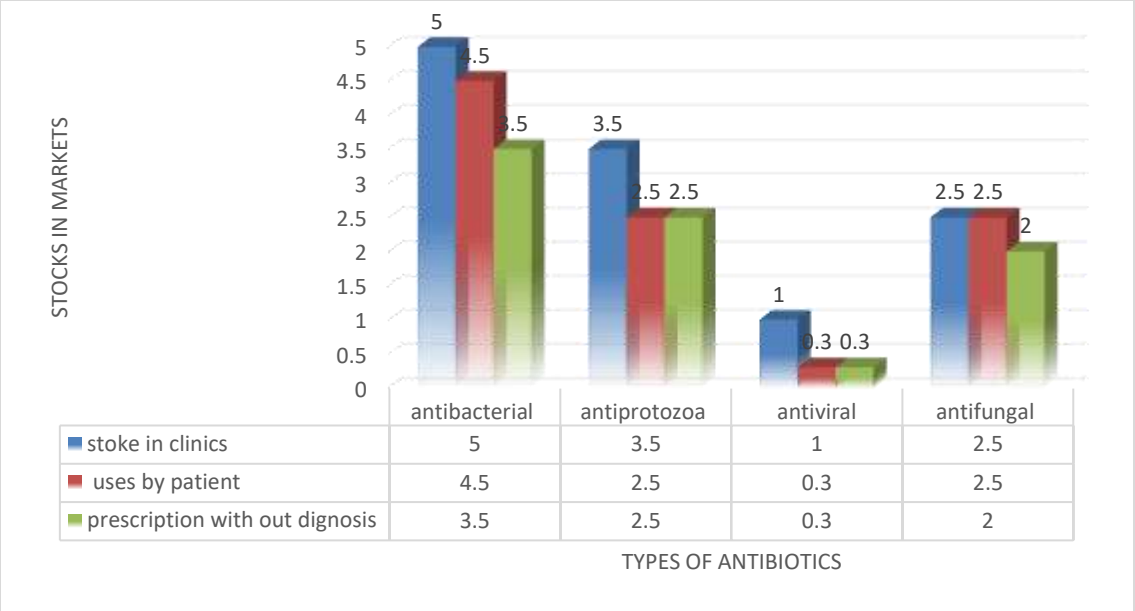

Figure No. 2. Shows the results of types of medicine in clinical markets and their implementation

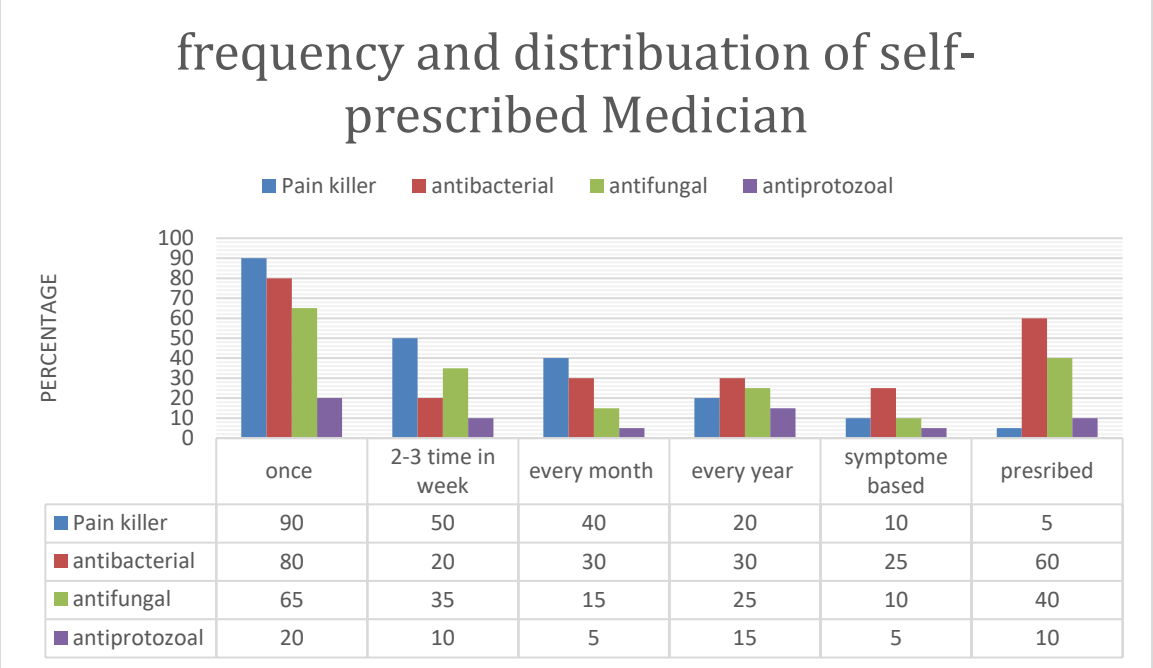

Figure No. 3. This show the frequency and distribution of self-prescribed Medicine

Discussion

Our study declares that 70% of district zhob-Sherani people self-prescribed or from empirical prescription by private clinicians without the diagnosis. As such data were never reported on district bases in Baluchistan Pakistan there is no data for the association on a national level. However, one study did report that 51% of mothers give medicines without recommendation to their Children in the district of Karachi (14). Self-prescription in the general population of India, our neighboring country, has been reported to be around 31% (15). It is also believed that our society self-mediators have to low level of education and are unaware of the action of drugs and their resistance so the whole society is in danger then the prevalence in the rest of the people may be an even more serious cause for concern.

It is acknowledged that self-medication treats minor ailments that do not require any consultant or specialists (16) Thus, it lessens the burden on healthcare systems, especially in developing nations with inadequate funding for medical care. The use of more complex drugs such as Antibiotics for a variety of pathogens can lead toward multiple-drug resistance pathogens like *Methicillin-Resistant Staphylococcus aureus* (MRSA), *Vancomycin Intermediate Staphylococcus aureus* (VISA) without consultant prescription. Self-medication of antibiotics affects both developed and developing countries. Worldwide, such human misconduct has resulted from poor dosing (17). Emerging pathogens are resistant to antimicrobial fueled by self-medication is a real global crisis. Our study shows that the rate of self-medication is at its peak in males of low-level education. Similar results were also achieved in studies carried out in Islamabad (18). In evaluation, earlier studies conducted in two different cities of Pakistan (Karachi, 80%; Peshawar, 69%) showed a greater prevalence of self-medication antibiotics (19). Antimicrobial resistant infections are indirectly caused by unhygienic food, water, Livestock, agriculture directly effecting human heath to transferring AMR (20).

Conclusion

By all counts, with proven results, it is declared that the people of district zhob & Sherani are frequently using antibiotics without a prescription by health care experts. Antibiotics are free and

available in private care centers where no experts are prescribing antibiotics to a patient without the diagnosis. The presence of antibiotics at home due to lack of proper diagnosis shows a threat of Antimicrobial resistance. Therefore, the improper usage and self-medication of antibiotics in Low & middle income or developing countries requires more surveillance. Specific treatment for the specific pathogens through an Antibiotic Sensitivity Test in high recommended in order staying ahead of the evolutionary genetic makeup high resistant pathogens. Pakistan national action plane mentioned various strategies to control the AMR in various sectors of life.

The self-medication is more than 50%, presence of more than six hundred thousand quacks in the country and highest number of drug and on an average 2-3 antibiotic prescribed per patients. Both district (Zhob, Sherani) have no any diagnostic laboratory for antibiotics sensitivity test (AST) in district health hospital (DHH), through proper testing of patients can prevent the over use or misuse prescription across the community which can direct impact in decreasing of antimicrobial resistance.

In conclusion, improving educational awareness through effective communication, AMR surveillance (human, animal usage and resistance monitoring), improving the strategies related to prevention & control of infections in health care systems & community, enforcement of regulations on utilization of antibiotics for human and animals, and sticking to the Global & National Action Plan for AMR will significantly reduce the burden of antimicrobial resistance.

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