

**Use and Misuse of Antibiotics in Private Practice as a Bioethical  
and Public Health Problem**  
*(A Medical Ethnography at a Small Town in District Khairpur, Sindh)*



**Sohail Ahmed**

**Department of Anthropology  
Quaid-i-Azam University  
Islamabad  
2021**

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and Public Health Problem**  
*(A Medical Ethnography at a Small Town in District Khairpur, Sindh)*



**Sohail Ahmed**

Thesis submitted to the Department of Anthropology, Quaid-i-Azam University  
Islamabad, in partial fulfillment of the degree of Master of Science in Anthropology.

**Department of Anthropology  
Quaid-i-Azam University  
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2021**

**Quaid-i-Azam University, Islamabad**

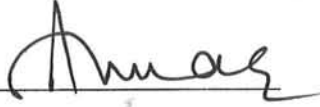
(Department of Anthropology)

**Final Approval of Thesis**

This is to certify that we have read the thesis submitted by Mr. Sohail Ahmed. It is our judgment that this thesis is of sufficient standard to warrant its acceptance by the Quaid-i-Azam University, Islamabad for the award of the Degree of M.Sc in Anthropology.

**Committee:**

1. Dr. Anwaar Mohyuddin  
Supervisor



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2. Dr, Lubaba Sadaf  
External Examiner



---

3. Dr. Aneela Sultana  
In-charge  
Department of Anthropology



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### **Formal declaration**

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**Islamabad, 2021**

**Sohail Ahmed Wassan**

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Thanking you all for the honor, I own on this most beautiful phase of life.

**Sohail Ahmed Wassan**

## **Dedication**

This thesis is dedicated to my parents, for their endless love, support and encouragement, I have to thank my parents for making this dream happen, thank you both for giving me strength to touch the Himalayas.

All I want to dedicate this piece of work to one and only- *Kafî* (Niece) who has been so attached to my heart, I want to dedicate my all the restless hours to her for being a warm welcoming kid,

**Sohail Ahmed Wassan**

## ABSTRACT

This study is conducted on the Antibiotics Use in Private Medical Practice: Bioethical and Sociopolitical Dilemma A medical ethnography at a small town in District Khairpur, Sindh

Identification of Issue: this is (use of antibiotics in medical practice in Pakistan) is an important issue and policy-based research in health sector in Pakistan which needs to be explored and addressed through ethnographic informed medical and applied anthropology approaches to health and medical practice. Medical anthropology's contributions to the health issue, policy and management.

Focus of the research is mainly on the two issues bioethics or medical ethics in the use of antibiotics by local private doctors in their medical/clinical practice and socio-political: sociological, legal and community level implications of the local private health sector.

Research methodology of this study is that through the purposive sample in-depth interviews were conducted by the health practitioners, medical shops and general public. Participant observation, key informant, focus group discussion and case study were part of research methodology. Field note, photography, audio recording, and daily diary were included as research techniques.

Main findings of this research are excessive usage of antibiotic medicine, unavailability of health equipment in hospitals, without proper diagnosing disease of patient doctor prescribe antibiotic medicine. Easy availability of antibiotic is major reason behind over usage of that, other cause is that socio-cultural tendency toward antibiotic and economic cause of antibiotic it is simply accessible for the all walks of life people. Moreover, Local government and drug regulatory authorities not inspect to practitioners and local drug distributors and also they are corrupt. Another hand, according to community, Medicine is not available in government hospitals and private doctors got heavy fesses. Furthermore, Patients have a no idea about doctor's prescription and doctor not examines side effects of antibiotics.

Key words: Overuse, Misuse, Antibiotics, Antibiotic Resistance, Bioethics,

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## Chapter 1

### Introduction

Now popular aspects of anthropology for research are; health, medicine, education, social welfare,, digital library, urban to rural development and collaboration, legal crisis, the environment, and humanitarian assistance(Elisabeth Tauber, 2015). So there for this study draw intentioned, “the overuse and misuse of antibiotics in medical practice is an important issue” which needs to explore and addresses through ethnographic informed medical and applied anthropology approach and medical practice.

The research is concern to identify the process of overuse and misuse of antibiotic in medical practice. Research focus is mainly on two issue (1) bioethics or medical ethics in use of antibiotics in local private doctors in their medical/clinical practice (2) sociological, and community level implication of public health and bioethical practices in Khairpur.

There was an increasingly meaningful discussion in anthropology over the last two decades about the broad range of action being carried out which has been integrated in various ways, such as an activism, advocacy, policy making, partnership, engagement and work for medical transformation in the researched communities and in society holistically. In additionally, Anthropologists engage in a multitude of settings with critical societal dilemmas within their own cultures. This means identifying research topics and how they organize and carry out their experiments with participants in the research (Engaging critical social issues, 2015).

As it is known, in present time, social scientists and particularly anthropologists are trying to address underlying societal issues and they focus to advocate them. Anthropologist see the structural and power context behind the problems and through that it trying to solve those dilemmas, which beliefs and myths were constructed behind the practice of antimicrobials that all are political -economy reasons. It is an international game and core class of world exploits peripheral class through the modern models (science, technology,

and knowledge). In current period, the trade of antibiotics is rapidly spreading globally because now this era is of globalizations, and in many under developing regions of world, core countries made franchises of antibiotic drugs. Similarly, anthropologists want to address causes behind the use of antibiotics like as why one uses antibiotics and what are socio-cultural consequences behind the conception of antibiotics? People have firm belief in science like religion.

Similarly, bioethical consideration to relates usage of antibiotics examined as a fairness and justice in the usage of antibiotics. If any doctor prescribes an unnecessary antibiotic medicine or he prescribed for vested interest, that is against the bioethics/ medical ethics, and doctors have a responsibility to care current and upcoming generations. Government and other health related departments have a duty to evaluate and gave accountability from unskilled and unregistered practitioners and drug suppliers.

Similarly, the research has explored the relationship of pharmaceutical companies, Doctors, Medical stores and the process of antibiotics. The research found the socio-cultural reasons behind these phenomena. The overuse and misuse of antibiotic is a prominent issue of the Khairpur and Pakistan therefore, I as a researcher selected this topic. The focus of this research is to define the rate of antibiotic medicine and social dilemma behind that.

Medical anthropology discipline addressed about the human health culture, as bio-scientific, epidemiology and social construction of knowledge about health and healing. Medical anthropologists focus on ways of healing, infrastructure and policies of government for treatment of community. In modern time, medical anthropology is working with applied perspective to make the policies and set the programs for community's health organization systems. They made projects and policies on the basis of social infrastructure which are behind the diseases.

Critical Medical anthropology adopted a health perspective that emphasizes the importance of access to resources (materials and non-materials) that are essential to maintaining life in

high-level satisfaction. Health is Analysis from a social factor perspective that affects health distribution Resources and risks to health (for example, biotechnology, environmental pollution, sanitation, hygiene, food, water). Health Conditions the power is provided for the care of the political decision-make-up of the resources for the health care, nutrition and access to environmental conditions and social exposure like the dangers of poverty and crime. Identifying the social health effects, Focus on economic and environmental factors to be focused on Biotechnological and social conditions. Multiple environmental interactions, including a limit Economic, social, political and ideological dynamics, due to the influences, lead to interactions The micro-level of the interaction between the community and the family, which consequences in shape the physical condition of the individual person.(Winkelman, Culture and Health; Culture And Health, 2009).

Public health models and the Assessment Protocol for Excellence in Public Health emphasize community involvement as key to a conceptualization of health. Healthy communities have health institutions that are accountable, incorporating community involvement from planning stages through implementation and evaluation activities. Community involvement facilitates incorporation of diverse cultural perspectives on health and the services required. Community health includes services provided (treatment, immunizations) and standard performance measures. Because availability of care is a major aspect of community health, health includes the capacity of the community's health institutions to respond to potential health problems. Responsiveness requires that health institutions understand cultural and social effects on health, incorporate community perspectives on needs and desired services, and assess perceptions of the quality of services.(Winkelman, Culture and Health; Applying Medical Anthropology, 2009).

Culture provides the key theoretical context for examining all human behaviors, including physical health. Economic, political, and other social factors, as well as cultural values, beliefs, knowledge and perceptions, play a major role in disease causation and solution distribution. Treatment expresses cultural values and technological, economic, and political agendas. Concepts of cultural models help to illustrate the many factors that affect health



by describing conditions that impact disease causes and distributions, as well as the behaviors of individuals and health care systems. Economic, political, and other social factors, as well as cultural values, beliefs, and perceptions, play a major role in disease causation and solution distribution. Cultural values and resources, illness and healing practices, and resource distribution impact the perception of a disease that a person has. Treatment expresses cultural values and technological, economic, and political agendas. To approach health effectively requires an understanding of the structural features of cultural structures and their health influences. Health models to cultural structures explore the role between the physical and socio-cultural settings. The "environment" is not just physical, but is also cultural, such as economic, community, culture, social, political, and religious aspects and their effects on the physical setting (Brody, 1986).

The antibiotic is modern form of medicine or drug used to treat bacterial infections (anti-bacterial). Antibiotic penicillin discovered first by Sir Alexander Fleming in 1928. According to WHO, the antimicrobial resistance has the potential to affect people at any stage of life. AMR occurs naturally, but is facilitated by the inappropriate use of medicines, including using antibiotics for viral infections such as flu, cold or sharing antibiotics (WHO, improving the health and wellbeing of transgender per, November 22nd, 2019).

Similarly, the use of Antibiotic medicine is a global public health issue especially in third world countries and like Pakistan is facing prominent problems of overuse and misuse of antibiotics. Antibiotic medicines provide the first-hand or first-aid to the patients in case of distance of hospital services. Antibiotics were introduced to reduce effects of virus and pain while the patients can reach to hospitals. But nowadays it's uses for every disease and doctors prescribe habitually it.

An agent or substance developed or generated from a micro-organism killing or preventing the growth of some other living micro-organism (World Health Organization, 2019).

Whereas, World Health Organization suggests that the use of antibiotic medicines increased a ratio of harmful diseases and antibiotics being not used for the seasonal infection and illnesses (flu, cough fever, cold and also sore throats) and for other viral

disease. The overuse of antibiotic medicine use contributes in increase of new dangerous disease and side-effects (WHO, improving the health and wellbeing of transgender per, 2018).

The overuse and misuse of antibiotic medicine is caused by lack of knowledge and communities have not motivation and awareness about it.

Micro-organisms like a virus, bacteria, fungi and parasites treated by antimicrobial medicines such as an antibiotic, antimalarials, antiviral, antifungal, and in a result antimicrobial drugs ineffective against microorganisms that is an antimicrobial resistance. Another hand in the process of antibacterial resistance; Antibiotics were never effective for the treatment of bacterial-infections (when antibiotics drug not work on the infections). Antibiotic resistance upraises many legal and ethical questions such as a” who is responsible and questionable to developed antibiotic resistance” Behind the developing of antibiotic resistance are many consequences, such as a irresponsible attitude of antibiotic prescription, inappropriate product promotions, injustice and inequality in health equipment allocations, corruption, involvement of political rulers, insincerity with professionalism. Continuously 80% antibacterial components inter in human body from livestock and animal also by the cosmetics.

Hence, it is a most valuable topic for the research. Pharmaceutical companies, private doctors, and medical stakeholders have strong social bond between each other, they depend on one another they work on only vested interest they do not care about community and patients.

## **1.1The problem**

The overuse and misuse of antibiotics is a biggest current issue globally, because it is caused many diseases like antibacterial diseases. Similarly, use of antibiotics is a global public health concern, mainly in underdeveloped countries, like Pakistan and current study's local; there are significant problems with the overuse and abuse of antibiotics. In case of remote hospital facilities, antibiotics offer or first-hand treatment to patients. In

district Khairpur, antibiotic purchased without prescriptions, clinicians and drug regulatory agencies has a no focused upon the evaluation.

The majority of health related academia and clinicians not consider to misuse of antibiotics as a medical ethics issue. This study helped to examined and evaluated weaknesses and gaps with the respect of antibiotics. The research was really anthropological, and would help to find out more about the usage and mistreatment of antibiotics and bioethical problems in the usage of antibiotics. Present research focuses on private hospitals and drug shops with witches misused to antibiotics. Also study draws attention to document relation of pharmaceutical companies with doctor and drugstores. Above mentioned variables are biggest current issue of public health, bioethics and medical anthropology.

## **1.2 Statement of the Problem**

Identification of Issue: this is (use of antibiotics in medical practice in Pakistan) is an important issue and policy-based research in health sector in Pakistan which needs to be explored and addressed through ethnographic informed medical and applied anthropology approaches to health and medical practice. There is much positive contribution of Medical anthropology towards the health issues, policy and management.

The study was very much anthropological that would help to know about the use and misuse of antibiotics and bioethical gaps in the usage of antibiotics. The current research is fundamental focus on the private clinics and drug stores witch misused to antibiotics. Similarly, this study evaluated the bioethical gaps in the usage of antibiotics, and governmental and academic reactions towards overuse and misuse of antibiotics. "Above mentioned indicators are current global debates of public health and social science" in the Kumb town, the principles of clinical ethics are much nonstandard, the clinicians have a no proper medical knowledge and health related equipment, and many are quacks.

## **1.3. Conceptualization and Operationalization**

Conceptual framework provides a fundamental foundation to any research, in the context of particular theory or litterateur review. And it helped to researchers for collection of data. In

current research conceptualization has been developed on the base of literature review. The variables of literature are related with the objects of the study, such as socio-economic consequences behind the usage of antibiotics, political intervention in health and literature are related with the structural violence in the terms of public health and bioethical gaps in usage of antibiotics. Similarly, literature selected related to legislation of antibiotics and bioethics by globally and Pakistan. Furthermore, Literature review read relevant on medical anthropology, Pharmaceuticals business and their role in health sector/medical practice in Pakistan and most importantly on the health issue of the use of antibiotics in Pakistan/South Asia/World/global health. Misuse of antibiotic: unregulated usage of drugs without any prescription people purchase medicine from community pharmacies and use it as a self-medicine. It show lack control of government authority and lack of proper knowledge about misuse of medicines.

Overuse of antibiotics: improper and excessive usage of antibiotic medicine is risk for the human being because that kill bacteria and useful for the infectious diseases. Otherwise antibiotic over usage generate bacterial resistance it is harmful for the clinic practices. Antibiotic was significant invention of 20<sup>th</sup> century it was widely used 1940 but after two decade 1960 antibiotic kicked out antibiotic resistance.

Bioethics: in the plural and secular civilized societies bioethics is fundamental right of human being without exploiting based on caste, creed, nation, disability sexual orientation in the field of medical science. Every individual gain same health facility.

Medical ethics: ethics of medical related with morals of society and wishes of patient, any medical practitioner cannot treat patient against the prescribe medical facility and the will of patient taking inform consent from patient is necessary in medical practices.

Public health ethics: these ethics make up with combination of scientific skills of medical and public value. Earlier bioethics and medical ethics cannot prevent much issues of public health protection. Pure drinking, sanitation and food security major are concerns of public health. Those tasks cannot accomplish with individual efforts, but collective action is necessary for the safety of public health.

Clinical ethics: this type of ethics belongs with medical practitioner and hospital staff. In the United States of America and Europe clinic ethics committees are necessary for the hospital. These

clinic ethics committees solve the rising issues during medical care. New laws and regulation can make effective.

**Antibiotic:** antibiotic made from the micro living organisms, that is effective for determinant microorganisms. Those microbial are bacteria and fungi. **Antimicrobial resistance:** due to maximum and malign use of antibiotic, it has generated resistance because many dangerous bacteria were killed by antibiotic. But current century extra consumption of antibiotic drug has made ineffective. **Pharmaceutical company:** pharmaceutical industry discovers, develops, produces and markets medicine for the diseases protection treatment and vaccination. **Pharmacy:** that is shop where public purchase medicines. It is known as medical store or pharmacy shop.

**Social:** social is referring with human individuals and group. Human interact with one another in society. Cooperation and companionship of individuals is also called social. Friendship, gregarious and sociable is examples of social. **Invalid source specified..** **Economic barriers:** these are such type of barriers in which people cannot purchase essential. Only they earn some money for the survival. **Community perception:** in the perception community describe motivated key guideline which it applies in daily routine. Community members accept and show through actions and having feelings of satisfaction.

**Practitioner:** that is called those individual whom have skill, job and work in medical. As we can call medical MBBS practitioner. **Other hand social movements:** In this paper author Charles Tilly defines to social movement. He articulates social movement is an informal network of people which is based large numbers of individuals and groups. They engage in any political and cultural struggle based on shared identity. **Infectious diseases:** viral and bacterial diseases which are called communicable diseases such diseases can transform through different sources.

**Operationalization** is the process of measuring concepts by which researchers developed variables. Operationalization is a systematic way to evaluate research and data collection, it helps to researchers to make that specific and limited to research, Operationalization examine the indicators and variables of research topic and their objectives. In current research are many indicators; such as a sociocultural consequence behind the use and misuse of antibiotics, in this Indicator researcher examine the social, economic and cultural barriers towards overuse and misuse of antibiotics. Similarly, political intervention and governmental involvement and their

legislations to relates usage of antibiotics. Moreover, the main veritable of this study is to document local private clinics and bioethical gaps in them. Such an s doctor's patients' behavior. Pattern of prescription in the terms of for which diseases antibiotics prescribed.

1. Misuse of antibiotic: this term researcher has used adverse consumption of antibiotic drug without prescription of doctor.
2. Overuse of antibiotic: extreme utilization of antibiotic medicine researcher noted in field people use antibiotic in the large quantity.
3. Bioethics: bioethics is big problem in this society every human cannot get equal facilities people discourage based on poverty. Moral legal obligation of doctors and medical practitioners cannot materialize in the district Khairpur.
4. Medical ethics: in the field researcher found people do not receive medicine according to their will and knowledge but under the compulsion people achieve medicine.
5. Public health ethics: these ethics are collective responsibility of public. They contribute with government health institution for the improving standard of life.
6. Clinic ethics: these ethics refer with hospital staff. But here lack of clinic ethics. Practitioners do not follow public health ethics.
7. Antibiotic: that is medicine which is manufactured by living microorganisms. Widely people use without proper prescription.
8. Pharmaceutical community: these are drug manufacturing industry produce and market drugs and vaccines.
9. Pharmacy: it is shop of medicine where people purchase medicines.
10. Social: living to gather in society, as a companion and friend.
11. Economic barriers: that is relates with low income groups of population who cannot receive proper medicine.
12. Community perception: people perceive and understanding of antibiotic consumption.
13. Side effects: adverse impacts of antibiotic drugs on the health of people appear after utilizing drugs.
14. Practitioners: they are those people who are working in medical sector.
15. Social movement: it is collective struggle of people against the overuse and misuse of antibiotic medicine. It is based on the mutual goals and share identity.
16. Infectious diseases: these are those communicable diseases which spread through any source.

#### 1.4. Objectives of the Study

Any type of report or research has some aims, objectives and goals which keep the research on the track. This ethnographic study is all about to explore and document the antibiotics use in Private Medical Practice: Bioethical and Sociopolitical Dilemma or public health problems. How they are socially connected and coordinated with one another. It has been

explored the hidden current issues of modern world. Following are the main objectives of this research are:

1. To know the Bioethics or medical ethics in the use of antibiotics by local private doctors in their medical/clinical practice
2. Role of government and legal implications and pharmaceutical companies behind the overuse and misuse of antibiotics
3. To document the Local perception about the bioethics and public health services
4. To find the socio-cultural consequences behind the overuse and misuse of antibiotics.

### 1.5. Research Questions

1. To know the Bioethics or medical ethics in the use of antibiotics by local private doctors in their medical/clinical practice
  - Are you known that overuse and misuse of the antibiotics are the medical ethical dilemma?
  - What is your perception about misuse of the antibiotics?
  - Who is the responsible for the misuse and overuse of antibiotics?
  - For what reasons doctors have been prescribed to antibiotics?
  - How misuse and overuse of antibiotics lead to ethical problems?
2. Role of government and legal implications and pharmaceutical companies behind the overuse and misuse of antibiotics
  - How inappropriate equipment and corruption lead to misuse and overuse of the antibiotics?
  - What are the legislation about the misuse of antibiotics and health ethical standards?
  - How institutional bodies responsible for the misuse of the antibiotics?
  - What is the role of the pharmaceutical agencies towards misuse of antibiotics?
3. To document the Local perception about the bioethics and public health services
  - How clinical practitioners and drug distributors lead to ethical problems?
  - To know doctors and patient's relationships?
  - What are bioethics and their standards?
  - What are the public health services and how it is integrated with misuse of antibiotics?

- How many awareness's and movements conducted for the reduction of the misuse of antibiotics?
4. To find the socio-cultural consequences behind the overuse and misuse of antibiotics.
    - What are economic reasons behind the misuse of antibiotics?
    - Why people preference to quacks instead of the professionals?
    - Why doctors over prescribed antibiotics and without diagnoses?
    - For witch symptoms doctors prescribed antibiotics and why people gave importance to the over the-counter prescriptions?

### 1.6. Hypothesis

Antibiotic use and misuse is a public health and bioethics problem. In this study the researcher has gathered ethnographic data in small town Khairpur Sindh. In which researcher has examined and analyzed over usage of antibiotic drugs by the medical practitioner, medical shops, and local people. Furthermore, research examined the bioethical and legislation towards usage of antibiotics, and their implementations.

### 1.7. Significance of the Study

This anthropological study is help to understand the overuse and misuse of antibiotic medicine, and this study will be fruitful in future because this empirical study would help to reduce quantity of antibiotic usage of medicine. Mostly people have no awareness and knowledge about infectious and diseases, which increase through overuse of antimicrobial drugs, so through this research study community may be decrease the use of antibiotics. As, Above I mentioned Overuse and misuse of antibiotics is a global current issue, many people die caused by the misuse of antibiotics. Same as same if current generation uses it inappropriately, Upcoming generations maybe die caused by the bacterial disease. This study can be fruitful for Medical Academia, policy makers, health management and community. Furthermore, this study can be providing and suggests fundamental reasons to reduce irrational use of antibiotics. This study evaluated institutions, policies, legislation and bioethical gaps with the usage of antibiotics. So therefore, it will be draw attention to



health management and policies for implementation of their legal and ethical laws which are concerns with the misuse of antibiotics. Another important significance of it is a Global to local transmission of issue and through this study we can highlight health issues through anthropological knowledge.

## Chapter 2

### Literature review

This chapter provides an explanation of research topic which already conducted. In this chapter researcher trying to examine previous studies which are reliable with current research. “The major agenda of this chapter find out gaps in previous studies and trying to fill those gaps in present research” Continuously the focus of this chapter is explain and cover global to local (research local) topics related studies, such as a globally reaction for misuse of antibiotic, Pakistan and Sindh interventions towards antibiotics also government and community level implementations of antimicrobial stewardship programs.

#### 2.1. Antimicrobial Resistance is a Global Threat

Antimicrobial resistance (AMR) is a growing global challenge [1]. It is estimated that between 700,000 to several million people die as a consequence of antimicrobial-resistant infections every year (Khezar Hayat M. R., 2019).

According to study, approximately 700,000 people die every year by the consequences of antimicrobial resistance. Now antibiotics do not resist against infectious diseases and, therefore many people die through different infections. Furthermore, antimicrobial stewardship program recognized in Pakistan physicians prescribed antibiotics for every condition.

The mass production of antimicrobials and possibilities they presented rapidly moved them into the fabric of lives and healthcare systems around the world (Podolsky, Anthropology's Contribution to AMR Control, 2015).

According to writer's point of view, antibiotic drug circulated globally and in present time it is a business. There is main cause of diffusion of modernization and globalization in the backdrop of antibiotics. He further said that some decades ago, people did not use the antibiotics and they

only used the folk health care systems, theories or roughly people take medicines, but now through the modernity it is available at every region of world.

WHO has recognized that without harmonized and immediate action at global scale, the world is heading towards a post-antibiotic era in which common infections could once again be deadly (Pablo Herna 'Ndez-Marrero, 2017).

World Health Organization has forcibly warned to the world for overuse and misuse of antibiotics. Moreover, it is suggested that the world has immediately need of decrease the burden of antibiotics otherwise humans will be affected by various infectious diseases.

Similarly, WHO recognized world have to face the post-antibiotic era; that means antibiotics will not effect on diseases. According to a study, before the innovation of antibiotics many people died through the infectious diseases.

Without urgent action, deadly antibiotic resistance is predicted to kill 10 million people a year worldwide by 2050, surpassing cancer, as the world is heading towards a "post-antibiotic era, in which common infections and minor injuries can once again kill".(WorldHealthOrganization, 2016).

The world health organization strictly emphasized to control on overuse and misuse of antibiotics. Furthermore, WHO reported through the overusing of antibiotics any type of medicine is not resist against to harmful germs. In addition, it suggested in current time many antibiotics are not effective against diseases.

Assessment of Knowledge, Attitude, and Practice has toward Antibiotic use among Harar City and Its Surrounding Community, Eastern Ethiopia (Ayele, 2018).

In 'Harar' city of Ethiopia about antibiotics drug is from 384 subjects. In this study, participants were 16 pharmacies and 44 medical stores. The aim of this study was evaluate 'Harar' community and their surroundings. The 83% of Harar population was used to antibiotics for cough and cold and 78.4% people had knowledge about antibiotics resistance; they said, "The unnecessary use of antibiotics is very harmful for our body friendly

microorganisms. The 90% of participants agreed to do not use of antibiotics by the suggestions of friends and family members but they can use by the suggestions of certified physician. Moreover, 65.3% of participants used antibiotics without consulting doctors. The main aim of this study was to reduce the use of antibiotics and educates in 'Harar' community.

During the research, majority of community viewed that "we are using antibiotics because these are easily available in our villages and people are mostly unaware about the side effect and formal way of usage. There is same condition of my research area; majority of people are unaware about misuse and harms of antibiotics, there is a lack of proper understanding about antibiotics, treatment and side effects of antibiotics. In Khairpurmirs majority of population is used to self-medication because people have easily approach of drug. The main factor of self-medication is lack of economic resources also.

Antimicrobial resistance (AMR) is a challenging global and public health issue that gives rise to bioethical challenges, considerations and strategies.(Herna, 2017).

In present time around the world, government and private institutions are busy to fight against use of antibiotics. Furthermore, around the world agencies have focused to arrange new strategies and policies for combat to antimicrobial resistance. Many countries of the world have been trying to reduce the use of antibiotics. However, our Pakistani society is not serious and has no effective implementations about proliferation threat of AMR.

Variations in the prescription style sometimes suggest poor clinical practices and can contribute to the inadequate use of healthcare resources (Pablo Herna S. M., 2017).

Text directly encounter to the local pharmaceutical companies and private clinics, because they practice medicine for the economic interest. After every five mints pharmacy reps visit to the private health settings is a proof of that.

In we look at market, there are various types of drugs are available for one disease, new pharmaceutical companies provide medicine to doctors as a sample and they not pay them. Every doctor has own formula of prescription. Similarly, condition of private settings in 'Kumb' city is very poor and here is big competition between the doctors.

WHO has recognized that without harmonized and immediate action at global scale, the world is heading towards a post-antibiotic era in which common infections could once again be deadly (Pablo Herna 'Ndez-Marrero, 2017).

According to world health organization, if urgently we cannot took step maybe upcoming generation face to infectious diseases. Moreover, before the innovation of antibiotics many people were dying caused by the bacterial diseases. So there for, we must be used to antibiotics properly and appropriately. Otherwise we can face to Post antibiotic era.

There is international concern about the increasing burden of disease caused by antibiotic-resistant microbes (Davies, 2013).

Today, there is dire need to reduce the antimicrobial threat globally. European Union is also conscious about this dilemma. Many movements have been started in various countries of the world against dispreading of antibiotic drug. In starting time, pharmaceutical companies sold medicine to health ministry, clinics and to medical stores' owners, but now they have started distributing medicine in an uncontrolled and unabated way, such as in Kumb city, there are thirty-two medical stores of which twenty-six are unregistered, therefore, medicines are easily available at medical stores in every corner of city. If any patient visits to doctor after that, during illness he purchases same prescription drug himself from any medical store.

According to the national action plan (NAP), there are many weaknesses in health structure in Pakistan. A practitioner does not have any health profession skills and there is shortage of laboratories. In every country, health policies are of paramount importance for progress and social change, and those policies play vital role to reduction and rejection of any social issues. In Pakistan's provincial and federal government are negligent about informal and excessive use of antibiotics.

Government has not introduced any strict policies about antimicrobial resistance. As the researcher is working in district khairpurmirs, there are ninety-eight clinical practitioners here who prescribe antibiotics (fourth and third generation of antibiotics) out of hundreds. Both community and medical officials have no awareness about antibiotics; physicians prescribe only for sake of business and patients do not wait for long time treatment. In district

khairpurmirs, the researcher observed that 90% population have no idea about the antimicrobial resistance. In this region until, civil society members and educated population of the city have not conducted any awareness campaigns or seminars against the over and misuse of antibiotics.

## 2.2. Antimicrobial Resistance as a Bioethical Dilemma

Bioethics can help healthcare professionals and public policy makers to recognize the ethical dilemmas surrounding antibiotic use as well as strategies to reduce the extent of antimicrobial resistance (Kass, 2005).

Leon Richard Kass specially gave definition of bioethics for the reduction of antimicrobial resistance. The core concept of this definition is to reduce the overuse and misuse of antibiotics through the coordination of health officials. Every discipline has its own ethical parameters. Furthermore, concept of Leon refers that, "If manufacturing companies, policy makers and physicians have not prescribed against the overuse and misuse of antibiotics; therefore, we have to save ourselves from antimicrobial resistance". In our society, the majority of population purchase antibiotic without prescription.

Bioethics has defined moral values of health culture. Similarly, if any doctor prescribed antibiotics for the sack of economy or pharmaceutical industries sold inappropriate drug for vested interests that is totally against medical ethics. For example, in khairpurmirs if any pregnant women went to 1 gynecologist, they suggested scissor operation for the economical purpose; here normal delivery is very rare.

This research protocol presents a conceptual model leading to the formulation of an empirically based bioethics framework for antibiotic use, AMR and for designing ethically robust strategies to protect human health in community and hospital settings.(Pablo Herna M. S., 2017).

As a previous study focused to protect and promote reduction of irregular use of antibiotic in the context of medical ethics. Similarly, the present research seeks to address Antimicrobial resistance in the framework of bioethical, public health and implementation of policies. Because this is main path, by which stakeholders can reduce unnecessary distribution of antibiotics. Furthermore, public health plays role as a cultural brokerage between community and agencies and through the public health agents we can decrease loud of antibiotics.

In the same way, the clinical ethics can be employed to change the behavior of both physicians and patients. According to bioethics, the unnecessary use of antibiotics is against to clinical ethics, and government should take strict measures for the implementations of policies, which are against bioethics. Now, it is time to combat against Antimicrobial resistance otherwise in coming time we will face many infectious diseases.

The presence of unlicensed medical practitioners (a person who pretends to be a medical practitioner but lacks formal education, skill, knowledge, and training), scanty dispensing practices, and untrained healthcare professionals are also other triggering factors toward antibiotic resistance(Khezar Hayat M. R., 2019).

Similarly, in Kumb city, majority of private -settings are quacks they have no proper information about health culture. They prescribe high doses to every age of patients, and here canola, drip, injection and cocktail of antibiotics is commonly used for the newborn babies. Furthermore, carelessness of health practitioners also promotes and protects the Antimicrobial threat.

### 2.3. Role of pharmaceutical companies towards promote to AMR:

The pharmaceutical company needs to sell the disease before it can sell the drugs (Klienman, 2006).

These lines clearly encounter to the capitalist's class who spread unnecessary and unequally medical models. The writer's focal point is that, businessperson create diseases through the unhealthy food, industrialization, institutional unequally, and through the societal parameters which made by the elite class of society. In addition to that, he also said that the health equipment's are distributed based on class. If one observes globally, in west I the health system is very strong, their research quality is very advance. On the contrary, in third countries, healthcare system is the worst. Pakistan's health system is worst. There is no any proper arrangement of sanitary system in public as well as government hospitals of Pakistan.

More locally, 'pharmaceuticalisation' can play out in complex ways. Our own research in Uganda suggests that people often turn to 'informal' providers of antibiotics when they cannot get to a health clinic (Chandler, 2011).

The chandler said Uganda's population use antibiotics because they have no appropriate and proper approach to clinics and the financial condition of people is very poor. If in any area, there is no any facility of Health care center, obviously people of that area may use medicine themselves. And, in Uganda antibiotics drugs are easily available everywhere. In the same way, in district khairpurmirs antibiotics are easily available everywhere. There are two main reasons behind this, first is the informal supply of drugs, and second is people cannot afford heavy consultancy charges of doctors, therefore they use antibiotics themselves during any illness.

#### 2.4. Contribution of Drug Stores and Clinical Practice to Increase AMR

Bacterial and viral diseases symptoms are same. Without proper testing or diagnosis, it's very difficult for doctors to give any statement about the disease. However, unfortunately in overall Pakistan especially in Sindh, testing system is not up to the mark. In Kumb city, it was observed that doctors gave medicines without laboratory test, and in this city there is no any certified laboratory according to local private practitioner.

Similarly the use of antibiotics as prophylactic surgical treatment and for chemotherapy patients allowed for dramatic scale-up of surgery (Nygaard, 2019).

Writer said antibiotics drug is used only during the critical condition of patients. Otherwise, there is no need to use. The critical condition is a surgery, during the operation, patient becomes out of control without any use of antibiotics drugs, during that condition doctors have to use antibiotics. Now days, doctors have started using the antibiotics during every condition. In Pakistani society, countless practitioners have no knowledge about health discipline because of that reason antibiotics have been used in high quantity in our society.



The presence of antibiotic resistance is closely connected to the consumption of antibiotics, both at a societal and an individual level, and most antibiotics consumed by humans are prescribed in primary care (Marthe S, 2019).

Another writer said antibiotic has used for primary health care system. Like that, in Sindh doctors are prescribing antibiotics for every disease usually for seasonal illness. Furthermore, he said antibiotic is a choice of both patients and physicians. Because patients want to smooth and quick recovery of health, they do not hold their nerves patiently for a longer period. Many people are habitual to take medicine from medical stores, because they have remembered names of antibiotics. In addition, almost here, people purchase antibiotic medicine by recognizing their colors like red, yellow, green etc. Sometime, they use covers of antibiotic drugs symbolically for purchase.

Self-medication in more than 50% of the population bought. (Plan P. A., 2013).

According to report of national action plan, '50% of Pakistanis population is used to self-medication'. In khairpurmirs mass population, purchase medicine by self-risk, district government does not take any legal action against this burning issue. Yet more issues besides drug resistance and overgrowth of pathogenic organisms rise from antibiotic abuse (Malik D. , 2020). The overuse and misuse of antibiotics create many diseases, like weakness of immune system Rheumatoid, arthritis, diabetes, asthma, anxiety disorder. Antibiotics affected to many body friend's bacteria.

The highest numbers of drugs are prescribed with more than three drugs per patient, and 70% of patients are prescribed antibiotics (Pakistan N. A., 2013).

This report of Pakistan national Action plan indicates that, in Pakistan majority of private clinical practitioners prescribed medicine irrational, and they gave 3 to 4 antibiotics to per patient. Same in this research area, the researcher observed that the doctors prescribed antibiotics for every conditions although this practice is illegal and against the health policies. Doctors prescribe unnecessary antibiotics because antibiotics give quick relief to patients and after that OPD of clinic increases day by day.

“There is a lack of appropriate diagnostic facilities, especially in basic health units and district hospitals. This further promotes the use of antibiotics without culture sensitivity tests.”(Khezar Hayat M. R., 2019).

That research challenges to the unlicensed practitioners and health management. Furthermore, it suggested antimicrobial resistance highly spread because physicians have lack of knowledge and health equipment's. In many areas, health clinical practitioners have no proper diagnosis instruments. Similarly doctors not seem culture and history of disease they prescribed antibiotics without diagnosis. That is same situation in Kumb city; here is majority of doctors prescribed drug without laboratory test. And amazingly here majority of doctors are quacks and no any laboratory certified.

## 2.5. Global Action Plan and Antimicrobial Stewardship Program

Antibiotics run the risk of side-effects, such as stomach upset and diarrhea or even an allergic reaction. The global action plan documented that the overprescribing and misuse of antibiotics formulate the antimicrobial resistance. Furthermore, it reported antibiotics drug kill many body supported bacteria's, and that helps to digestion system. In human body, there are different types of bacteria, some of them are s dangerous and some are good for health. When we use antibiotic excessively, our bodies' many beneficial bacteria get affected. And, continuously taking antibiotics or any drug may not affect diseases (Plan G. A., 2017).

In May 2017, Pakistan's Ministry of National Health Services, Regulations and Coordination submitted the newly drafted National Action Plan for Containment of Antimicrobial Resistance (NAP) to the World health organization. On that occasion, several bodies contributed like an agriculture sector, veterinary officials and representatives of health.

Some major strategic vision of National Action Plan for the prevention of overuse and misuse of antibiotics:

- Conduct seminars and arrange other awareness programs for the unnecessary use of antibiotics.
- Improve surveillance mechanisms of diseases and establish new policies for antimicrobial resistance prevention.
- Improve health settings, Agriculture, Food, Animal health, Environment and community.
- Update and implementation of control for human and veterinary antimicrobial use
- Antimicrobial use for growth promotion and supply of proper alternatives (such as pre-biotic) in food animals.
- Integration of AMR into all public health research agendas, including research on vaccines
- Estimation of the health and economic burden of AMR, for use in decision-making.
- Moreover, National Action Plan (NAP) examined and highlighted three points for the prevention of misuse and overuse of antibiotics.
- To recognize that Pakistan has an urgent need to foreclose over-the-counter (without doctor's prescription) and over prescription.
- To promote and enforce initiatives to improve infection control in health settings.
- To arranged trainings and studied in medical curriculum about rational and formal use of antibiotics.(Pakistan A. R., May 2017).

Most published efforts to reduce unnecessary antibiotic use have focused on office-level educational interventions, with the most successful strategies using combinations of patient and clinician education.(Ralph Gonzales, 2008).

From some years, many publications documented globally for the reduction of overuse and misuse of antibiotics. They made policies and strategies internationally, nationally and domestically. In these legislations, numerous institutions such as a government, public health, and health administrations contributed at various levels such as academics. Furthermore, many awareness campaigns were conducted around the world for the irregular use and distributions of antibiotics. For instance, from 1997 to 2007, with the coordination of twenty-one European countries which emphasized on overuse and misuse of antibiotics? The motives of that collective struggle were changing the policies and reduce consumptions of antibiotics. Any doctor who prescribed unnecessary antibiotics and any pharmaceutical company that distributed irrational medicines faced heavy resistance from those organizations. Moreover, European countries through the social marketing aware communities and they brought changes in the medical curriculum. The communal campaigns were main target to educate physicians and patients. Furthermore, the mass media is the central source to prevention and formal

practice of antibiotics, because every person has easily access to media. Through the print media and social media, we can forbid spreading of unnecessary antibiotics. But unfortunately in our society media is totally commercialized. Here is no concept of social marketing near the media.

In 1978 the WHO set up a global Action Program on Essential Drugs (APED)(Andrew L & Adriana Petryna, 2006).

The purpose of this program is a make medicine to favorable for under developing countries. WHO is want to develop health system; it made a list of 200 vaccines and drugs on the basis of fewer prices? But policymakers, political authorities and government officials rejected that. Both doctors and pharmaceutical companies said this list is no good and then they use starting out of list medicine. Furthermore, author said, the overuse of the spreading the unnecessary drugs (antibiotics) is a developed countries' agenda. Who made the much medicines for the sack of money? As in market have different types of medicine but all have a same work.

Antibiotics stewardship programs (ASPs) around the world did work to combat overuse and misuse of antibiotics. His major focus was to educate to community, general practitioners, policymakers and also emphasized to administration. The (ASPs) worked globally. After then in March 2014, the medical microbiology and infectious diseases society of Pakistan (MMIDSP) introduced the Antibiotic Stewardship Initiative in Pakistan (ASIP).This institution around the Pakistan worked. It conducted workshops and awareness talks throughout the Pakistan. they made was survey in September 2015 to May 2016 from 392 GPs (general practitioners) I and pediatricians (child specialist) (51.8%) answered on the usefulness of this activity and 495 (65. 4%).the result of that survey was very alarming. The result of survey show antibiotics 62% use for children and general practitioners prescribe two or three antibiotics to everyone. Same cases are in Kumb city here new birth baby doctors prescribe antibiotics and also general practitioners are habitual to prescribe 3<sup>rd</sup> and 4<sup>th</sup> generation of antibiotic (Programs, 2016).

## 2.6. Socio-economical Barriers towards Reduction of AMR

Social conditions produce disease through work exposures (pesticides and industrial pollutants), the location of factories (near poorer neighborhoods), exploitation of the underprivileged (low salaries, no health benefits), and political decisions about funding public health and medical care services (Singer M. , 2016).

According to author's piece diseases are not natural, they developed by bourgeois class of society, like that Pakistan is an industrial country there are many types of different industries witch spread pollution and that pollution creates diseases, On the other hand, working class has no facilities; they work for little prices. Furthermore, he said political leaders, governments and capitalists exploit proletariat class. Capitalist's class make industries for their vested interests and they do not think for country. And industries' owners gave them inappropriate reliefs. Government allocates unequally heath related equipment's.

Variations in the prescription style sometimes suggest poor clinical practices and can contribute to the inadequate use of healthcare resources(Pablo Herna S. M., 2017).

This text is directly related to the local pharmaceutical companies and private clinics, because they do practice medicine for the economic interests. After every five minutes, pharmacy representative's visit the private health settings is a proof of that. For the one disease are various types of drugs available in market. And almost new pharmaceutical companies provide medicine to doctors as a sample and they not paid them. Every doctor has a own formula of prescription. Similarly condition of private settings in Kumb city is very poor and here is competition between the doctors.

Singer noted that traditional medical-ecological views have often emphasized an environmental determinism,(Singer M. , 2016).

According to author's point of view, the development of mega projects is a main reason for diseases. Because they affect ecology and disrupt ecosystem and that projects gives birth to the new viruses.

The assessment of these projects is biased, the biggest example of that is Thar coal project in Sindh. Through the industrial projects, it became dangerous to affect ecology like a water, agriculture, oxygen, plants, birds, animals, they all things are parts of our lives and we use that on daily basis. Now, if any element of our environment is affected by modern projects that means they directly affect humans' lives. And, as we know for that we have to face many diseases and then we went to medical centers and got medicine of different types and also obviously antibiotics.

Antibiotics are also freely available to laypeople over the counter in developing countries, and people often use these drugs to self-medicate (Nichter, *From Resilience to Resistance: Political Ecological Lessons from Antibiotic and Pesticide Resistance*, 1996).

Both authors suggested in lower-middle-income countries usage of antibiotics are usual. Furthermore, they said that main reason of ordinary consumptions of antibiotic is a shortage of economic resources and poor community health systems. People practice self-medication because they not afford heavy fee of physicians. Same in district khairpure's people purchase medicine from medical stores they do not go to the doctors. Because, they have economic problems or most of people are unaware about health priorities. Because here people believed that diseases are a natural not a constructed by certain class. But, on the other hand, in western countries, people are serious and conscious about health cultures. And west is focused to health policies and in developed regions of world is no concept of self-medication.

Antibiotic resistance is difficult to control because of the involvement of many different stakeholders (Nichter, *From Resilience to Resistance: Political Ecological Lessons from Antibiotic and Pesticide Resistance*, 2008).

These lines challenge to power bodies of societies, which are caused, and which do not want prevent to overuse and misuse of antibiotics. Behind the consumptions of antibiotics in Pakistan are main hands of political economy. In this county, politicians construct policies for

vested interest. Here, medical officials are appointed for economical purposes. In Kumb city, there is a common irrational health culture. Here, government hospitals there are available only Panadol tablets.

And private practitioners are a totally commercialize. On the doctors' certificates other relatives run the hospitals. Furthermore, the mass population of Kumb is used to go the private clinics because in government hospitals there is no any proper equipment of health.

This is the duty of government to stop illegal and unnecessary antibiotics. Sindh government should have to start community health programs for educating to population. Government must implement the policies for reduction of over prescribing of antibiotics and witch companies made antibiotics them forced for significant distribute antibiotics.

People and their physical environment are interdependent. People depend upon the resources of their natural and constructed environments for life itself. A damaged or unbalanced natural environment, and a constructed environment of poor design or in poor condition, will have an adverse effect on the health of people.(Chandler C. I., 2011).

These lines directly challenge to the structure of community. The unequally distribution of needy items and institutionally dominancy is promoting to diseases. If we see in district khairpure's drainage system is very poor, therefore here in summer session many people became affected by malaria, and in this region government hospitals are useless, here people use lowest quality of water. In our society many diseases are deliberately created by the sake of economy. Every state has a responsibility to facilitate to people and they must provide health apparatus. When one talks about structure of society that means they are talking about every institutions of society.

The reasons for being unable to access a health care unit are varied, including day wage labor work, parenting responsibilities, lack of transportation to out of reach clinics, and severe understaffing in available clinics.(Chall).

Behind the overuse and misuse have the central issue is health care. And behind health care is fundamental reasons are socio-economical and bioethical aspects. In today's time, peoples are engaged in many life problems. They have not focused to family and also physicians nor

properly gave time to patients. Moreover, if one sees in our surroundings many people keep many types of medicines and also antibiotics in first aid box for self-mediations. In many areas of district Khairpur, there are not hospitals if are avail in this are not health staff and health equipment.

Pointing out the ways in which science and technologies are culturally made and shaped (Fullwiley, 2011).

Author said science and technologies made based on cultures. If we see in the colonial time administrations, applied medicines on West Africa. And in currant time, condition of sickness is change culture to culture. In Pakistan is totally change treatment system then west. For example, in Pakistan health policies are made by religious way

## 2.7. Literature by Pakistan Sindh

Treatment pattern for upper respiratory tract infections showed antibiotics being prescribed in an alarming 89% (Naseem, 2020).

In Pakistan antibiotics 89% prescribed for upper respiratory infections (nose, sinuses, pharynx, or larynx= voice box) in these situation we cannot use any antibiotics. However, the researcher observed in Kumb city doctors prescribed for those threats antibiotics.

Dr. Mohammad Jabran Nawaz said, in Pakistan, there is a culture of overuse and misuse of antibiotics. Furthermore, he pointed out that here over-prescription, quackery and self-medication is common and in Pakistan majority of population use antibiotics for flu. Moreover, he suggested that Pakistan's federal and provincial government needs to stop urgently diffusion of antibiotic items. The ignorance of this threat and increasing numbers of antibiotic resistance it is a responsibility of government, private policy maker agencies and health care practitioners to take decisions and steps towards inappropriate use of antibiotic drug (Nawaz, April 05, 2018).

The ignorance of this threat and increasing the numbers of antibiotic resistance it is a responsibility of government, private policy maker agencies and also health care



practitioners to take decisions and steps towards inappropriate use of antibiotic drug (Jabran, 2 Feb 2020). To prevent the misuse of antibiotics, Medical Microbiology and Infectious Disease Society of Pakistan (MMIDSP) initiated an awareness campaign in March 2018 to inform both the public and health care community about the about overuse and adverse effects of antibiotics. (Malik U. T., 2 feb 2020).

In March 2018 Medical Microbiology and Infectious Diseases Society of Pakistan (MMIDSP) was started social movements for reduction of irrational use of antibiotics. The central theme was these campaigns educate to both community and health care centers. Furthermore, through this campaigns provided information about the side effects of antibiotics. Similarly, in khairpurmirs immediately needs to decrease inappropriate burden of antibiotics.

From January to May 2015, a survey was conducted by Muhammad Bilal and his team about the self-medication of antibiotics in civil hospital of Karachi Sindh but respondent was selected from rural inhabitants of Sindh province. There were total four hundred participants' habitations in rural sphere of Sindh were inspected in this cross-sectional survey. The mean age of study participants was 48.6 ( $\pm 4.4$ ). The study comprised of 263 (65.7) males and 137 (34.3) females. Out of the 400 participants, 161 (40.2%) were uneducated, 222 (55.5%) were married and 180 (45.0%) participants had earnings of less than 7000 PKR. The aim of this documentation was addressing to reduction of inadequate to antibiotics usage, and evaluates knowledge about community. According to researcher's point of view many people had no knowledge about antibiotics and their doses and side effects, and here is a common reason shortage of time. Furthermore, they said 81.25% of people use self-medication antibiotics. And behind the self-medication of antibiotics were 88.0% economic reasons. Similarly, research reported 74.7% of participants had no knowledge about the phenomena of antibiotics and their resistance. This research express the burden of antibiotics are high in rural Sindh. Furthermore, researcher examine the types of antibiotics witch commonly used among the respondents (rural dwellers) Moreover 52% was practice as a self-prescribed Amoxicillin 3<sup>rd</sup> generation of antibiotics (Amoxicillin use for the middle ear infection, strep throat, pneumonia, skin infections, and urinary tract infections among others) The most commonly was purchase the Tetracycline 2<sup>nd</sup> generation of antibiotics 16.9%. This used for the acne, cholera, brucellosis, plague, malaria, and syphilis. Ciprofloxacin 14.8% used and also it is use for the bone and joint infections, intra-abdominal infections) Co-trimoxazole 11.4% consumption is within the population and Ampicillin sold 8%. But there Cefadroxil and Cefixime were not purchased for

self-medication. Peoples use those antibiotics for the cold/flu, pain, fever, stomachache and for allergic diseases. Almost documented reasons of over-prescription of antibiotics are lack of time and lower economic recourses. Furthermore, Bilal said 60% of people use antibiotics for flu. Similarly, the common side effects of overuse and misuse of antibiotics reported on research is Diarrhea/abdominal pain 21.5, Nausea/Vomiting 6. %, Allergic Reactions 7.8%, Yellow eyes/skin 10.8%, Tiredness/Dizziness 55.4%, Headache 9.5%, Fever 7.1percent, Kidney problems 4.6%, Liver problems 5.8%, Teeth discoloration 3.7%, Muscle/joint pain 6.5% Numbness/tingling 4.6% and Sleep problems 9.2%. This research shows the in rural areas of Sindh people have no knowledge about antibiotics. Sindh government should be take stapes for prevention of self-medication of antibiotics and arrange awareness programs in rural areas of Sindh.(Muhammad Bilal, 2015).

## 2.8. Animals and Agriculture

Each year more than 8 million kilograms (kg) of antibiotics are given to animals and 22,000 kg are applied to fruit trees, representing more than 40%—and perhaps as much as 70%—of the antibiotics manufactured in the United States ,(Horrigan, 2002).

Author said antibiotics are not being used only for human being but also animals and plants. In addition, antibiotics are dangerous for human. Similarly, he said overuse of antibiotics at animals and trees are also dangerous. He further said, eight million kilograms of antibiotics are being used for both animals and plants. Furthermore, he said seventy% of antibiotics made by the United States of America. As we know US is a powerful country and that through their power they diffuse harmful cultural items. For the core counties are periphery countries are source of income. Like we are using antibiotics for humans, animals and tress, in future we can face to many immune diseases. Then we took funds on heavy interests from core countries,

Antibiotic resistance is also promoted through modern animal and plant husbandry. Animals are often raised in very close quarters, and farmers use low levels of antibiotics in animal feed to keep the group of animals healthy (EMS, 2002).

Writer said animals and vegetables are promoted to the antibiotic resistance. According to American and Chinese health institutions, 80% of antibiotics transferred in human body from animals and vegetables. When people did business of animal husbandry they used various types of antibiotics for increasing of them. And the same way the mass population of Khairpur and almost Pakistan depend upon the agriculture and domestic animals and they often use antibiotic in field and for animals. As human quacks physicians are, same to same are veterinary quacks for treatments to animals. And that quacks misuse to medicine for animal treatments.

Antibiotic use in livestock has led to indiscriminate use of antibiotics in farm animals and poultry for therapeutic, prophylactic and growth promotion purposes (Akram, 2020).

According to global action plan, the much quantity of antibiotics is used for economical purposes. If one sees in Pakistan people use antibiotic for livestock and in poultry forms. In Pakistan or in Sindh people's breeding animals and those animals they sold in Eid-ul-adha. Antibiotics medicine raises up the growth of livestock and poultry a head of time. In decades ago, people did less use of poultries but from some years its part of our life. And those animals and poultry products are caused of many diseases. Ago poultries were avail in particular settings but now it's available everywhere.

## 2.9. Public Health Concern to AMR

Public health should address principally the fundamental causes of disease and requirements for health, aiming to prevent adverse health outcomes.(Asadullah K, 2019).

The public health worked as a mediating among the agencies and communities, and even it is responsibility to advocate individually express to populations. Moreover, public health seems to social and cultural structure of population. Like a living setting, food pattern, political and religious barriers and also they were express to the ecological and environmental factors of whole population. Furthermore, public health officials make the policies and arrange the communal gatherings for preventions of diseases. In same way Public health practitioners is duty to them playing active role for reduction of misuse of antibiotics. I think in district

Khairpur or overall Sindh public health officials are not focusing this globally burning issue of overuse and misuse of antibiotics, therefore in our region there is high statistics of overuse and misuse of antibiotics. Similarly, public health is responsibility to inform society from diseases and they must approach to institutions about communities' dilemma.

For example, suggests that the way informal providers fill the gaps where legitimate public health institutions have been too weakened to operate means they are informally sanctioned by the state (Pinto, 2004).

The writer further said that there are hidden hands of governments' behind the informal and irrational distribution of medicines. In Pakistan, many pharmaceutical companies sold inappropriate drugs. Moreover, government officials gave permissions them for the sack of vested interest. Even in private clinics many drug representatives came, and with the drugs pharmaceutical agents gave them many things. The national or local administrations are major contribution in informally distributions of drugs. Pharmaceutical industries worked in they were affiliated with governments they have fixed parameters for distributions of drugs. But in our society governments agents not take serious those dilemmas.

Physicians need to counsel their patients and junior doctors that not every cough or cold deserves an antibiotic (Organization, 2016).

The world health organization emphasized to Pakistan health institutions to prevent overprescribes antibiotics. Furthermore, WHO officials said should be arrange seminars and other awareness programs forbidden to misuse of antibiotics. The same situations in Kumb city, here community and general practitioners have no knowledge about drug pattern. In Kumb city majority of community people said, they have no idea what doctors prescribed. It is the responsibility of doctors and medical administrations that, they have to motivate and aware to community and general practitioners about misuse and overuse of antibiotics.

## 2.10 Anthropology and AMR

Concerns of over-use of antibiotics appear in some historic and anthropological analyses to be tolerated because of the apparent lack of

choice for physicians.(Podolsky, Anthropology's Contribution to AMR Control , 2015).

Writer said in his statement that, people use antibiotics they have no proper and basic facilities of health, in rural areas of people haven't approach to better physicians, they don't have access to cities because in many rural areas have no proper transport system. Similarly, in Pakistan, there are many areas, which are in very bad condition, there is a lack of proper and basic health facilities, in small towns, doctors have no proper information about health profession, they not do test and gave cocktail of medicine to patients (many medicines at a time) and they were think ones them effect on diseases.

Now Anthropologists are to focus our attention on pharmaceuticals in their social and cultural context.(Kleinman, 2006).

Writer examined that in modern times, anthropologists worked in various contexts. They want to understand social and cultural aspects behind the drug producer companies. Like an economic, political, governmental, marketing and also they interested to studying power behind the distribution of drug. As it seems in Pakistan has a many pharmaceuticals companies and that made by the powerful bodies of country.

Anthropologists concerned with antimicrobial resistance (AMR), then, are interested in how antimicrobial use makes sense in different contexts, as well as the science and practices around AMR emergence and transmission..(Chandler C. A., 2016)

As it is known, in present time, social scientists and particularly anthropologists are trying to address underlying societal issues and they focus to advocate them. Anthropologist see the structural and power context behind the problems and through that it trying to solve those dilemmas, which beliefs and myths were constructed behind the practice of antimicrobials that all are political -economy reasons. It is an international game and core class of world exploits peripheral class through the modern models (science, technology, and knowledge). In current period, the trade of antibiotics is rapidly spreading globally because now this era is of globalizations, and in many under developing regions of world, core countries made franchises of antibiotic drugs. Similarly, anthropologists want to address causes behind the use of

antibiotics like as why one uses antibiotics and what are socio-cultural consequences behind the conception of antibiotics. People have firm belief in science like religion and near their perception that is not questionable.

## Chapter 3

### Research Methodology

Research methodology is guide to research from very first step to final ending. Methodology is tool and techniques used during research. It gives research a framework to fit the research process. Methodology is the systematic knowledge and logic in use of the ways, each scientific study has their techniques of gathering fact data. In Anthropology we also use certain has a unique approach of data collection. The Anthropological field work, therefore must have a number of different research tools in his or her tool kit, unlike the situation in laboratory sciences, research tools in anthropology involve relatively little in the way of hardware and gadgetry but require great sensitivity and self-awareness on the part of investigator (Pelto, 1970). In this research, mixed data has been used collected by certain methods, through this technique data has been collected, with the use of this methodology could be sought out very huge knowledge and most authentic material concern to problem, qualitative methodology tools and technique has been used for collect in-depth information about this topic.

Methodology: mixed method research, case study of two/three private clinics, interviews with doctors, staff of medical stores, empirical evidence by collecting the medical prescriptions. Interviews with the patients/general community members to explore their views about the awareness on the issue of the use of antibiotics (what do they know and understand about the medical ethical and legal issue of the use of antibiotics they get by the doctors).Interviews with medical reps of pharmaceuticals visiting to and supply medicines to these local medical practitioners, interviews with officials of government Drug Department, interviews with professors of medical colleges in the district.

To collect data, researcher use different methodological tools, which are following.

### 3.1. Key Informants

It is non-observational technique, which was another source of getting information. Key informant was a person who belongs to that local community or their very close to respondents, where the researcher works remaining in the domains of his studies. It was a main source of collecting data about a particular Socio economic, culture. I selected a key informant as source of access, because community's people did not participate and avoid to talking about this topic, it was very difficult for me to meet direct with my respondents, therefore key informants very must for me to access them. For the data collection and easily access to respondents, I selected two key informants one of them was a owner of drugstore and his father is a Bachelor of Medicine, Bachelor of Surgery (MBBS), and other was clinician.

Due to fact, good informant was cultural broker between respondents and me. Because It is impossible to direct interact with medical officials, because, they are avoiding to give interviews, because they neither know me nor aware about my research work. Therefore, key informant is necessary for any researcher. Who, he can talk easily; to create relationship with the responds through this person?

### 3.2. Participant Observation

Participant observation is a method, which provides the researcher a good opportunity of collecting qualitative data in the community, by using this technique researcher immerse himself daily life of the people

It involves getting close to people and making them feel comfortable enough with your presence so that you can observe and record information about their live.

Rapport building is compulsory and initial technique to use in field research be for the participant observation, to establish good relations with key informants and responds as like friendly, they are feel comfortable to discuss, they also free their activity such kind are creating environment. Because you are going to new community for getting information about their native point of view, it is major part of the research, it is way to engage in the social activity when I went first time for interview



... I did not feel uncomfortable, after living together with them, I felt they did not hide anything from me. Because I was around eight to ten hours in selected clinics and four to five hours I was spent on drugstores. So therefore I was part of their everyday life. This is very best way to understand the things, such a way I conducted research data through this technique.

### 3.3. Sampling

Sampling is also important method for anthropological research because researcher cannot study whole community, unless he takes a sample of community. The basic idea behind the sampling to select and choice a certain number of responds and key informants, those, who provide proper information about their topic or relevant that.

I also used this technique during my fieldwork because community was vast in my selected location. They live different places in the city. The sampling technique, which I have used, was the purposive and snowball sampling as the respondents were not available at one place, they live in different areas of city, therefore I used snowball sampling as I could find them.

### 3.4. Purposive Sampling

A purposive sampling is a non-probability sample that is chosen in view of qualities of a populace and the target of the investigation. Purposive sampling is otherwise called judgmental, particular, selective or subjective sampling (Russel, 2006). Having strategically selected individuals who can relate to the objectives of the study and fulfill the requirements of this study, the systematic sampling also attempts to address the limits of data collection. As a current research topic is use and misuse of antibiotics as bioethical and public health dilemma. So I selected samples by whole size, which is related to the topics. Like a clinician,

drugstores, officials of drug regulatory authorities, folk medicines, general community members and medical teachers.

### 3.5. In-Depth Interviews

This is also very important and basic technique of data gathering. In this method, people are interviewed face to face. This method is used to get deep and reliable information and local perception of the people. Moreover, I selected semi-structured interviews for data collections. The study has been also conducted in-depth informal interviews from the active member of community like doctors, drug distributors, patients and health managements, questions asked by the respondents related to research topic and their objects.

### 3.6. Focus Group Discussion

Focus group discussion is very easy to conducting a lot of data at same time all responds share own view in different context, researcher gathering data whole side of this group discussion, they talking various point of view, but researcher target concerns their topic, this method is very helpful for researcher to checking cross answer operationalize their objectives. He should be capable to note interviews at time more peoples dialogue. Because, so many people different minds sharing views in the same issues. Moreover, during field conducted two FGDs, one by teaching faculty of Khairpur medical college and other is from community members.

### 3.7. Field Notes

The field notes method is very important in qualitative research study. By this technique researcher should have to note and write down on his daily field notes diary. Through this technique, researcher would note down valuable information during research work. The writing of field notes gives an opportunity to the researcher to brush up the events and mode of discussion made with the respondents and with the common people that are informative

during thesis write-up. All the data gathered in field, by using different methods, was written in a systematic way in order to analyses them.

### 3.8. Audio Recording

The researcher used this technique when, he conducted important conversation with any key informants and other community member. During interviews researcher mostly recorded the data by using voice recorder, with the use of this technique. As a researcher, I collected sufficient and required data without any difficulty. For the audio recording, I used two tools of recording tape recorder and mobile phone.

### 3.9. Photography

Camera is one of the major items of Anthropology's luggage. Direct preservation of the event is possible only through photography; I was also going to take some photographs of relevant things, event, and persons and for capturing the clinic culture activities and during interviews I take photos. The researchers used photography throughout the entire period the field research. As a non-verbal mechanical and in order to pick up and capture informal facts about the lives of people and the locality. Photography is the main parts to get the pictorial evidence. With the help of photography, I was able to draw an attention to the different scenes and references and to offer it as a part of my field research and it was easy to perceive the condition described. Mostly I had taken the photograph, with the agreements of the respondent's as well while they were using and updating activities on social media.

### 3.10. Daily Diary

Daily diary is mostly use to record daily activities in the fieldwork. It helps researcher to remember that what is done on the day and planning of fieldwork.

It is another important method to keep the record straight and without errors that was being followed by the anthropologists while in an un-known community gathering data for the research purposes. It has been just like a science of a practical notebook in which a researcher during

research, note down his or her daily activities and experience. I noted several problems and my experience in my daily diary.

### 3.11. Secondary Sources

It is very difficult for researcher to collect all the data from primary sources. In Anthropology most of the information is collected through participant-observation, interviewing; but information is also collected through secondary sources that includes locale NGOs, Internet, Newspaper, Magazines, journals, books, articles and various related organizations which already is work on topic. Study conducted by researchers. For this study data collected almost from the Pakistan national action plan, world health organization's reports and Pakistan medical dental council and another hand medical anthropologies books like a culture and health by Michael Wineman.

This research start collecting research data from secondary sources and takes the data from related books, articles and from online websites. I was connected with my supervisor and that specialist Anthropologist who has researched on this topic.

### 3.12. Case Study

Case study refer a detail knowledge about a individual or fixed territorial place, case study method is a very reliable approach to understand complex issues through analysis of a single person or case, through this method researcher would have broad information about community. Therefore, I was used this technique for collecting and presenting some individuals events and cases.

### 3.13. Ethical Foundation of Field Research

The ethical concept of research carried out multiple dimensions; research ethics also depend on study's topic. The aim of ethical foundation of research is clearly identify study and researcher himself in the field. If you are working for donor projects, you must be show that never hidden it. Both interviews and discussions were conducted with the will of the respondents. Photographs have been taken with the permission of respondents not forcedly trying to convenience. Similarly, Interviews have also been conducted according to the will of the respondents. In some situations, (in critical research) respondents want hidden and as a good researcher our responsibility to hidden

### 3.18. Climate

The atmosphere of Khairpur is normally that of the upper Sindh environment. There are two types of seasons around the year hot and cold. May, June and July are the hottest months, the minimum and maximum temperatures during this period are about 42°C and 27°C, correspondingly. And other hand February, January and December are the coldest months of year, and in this period temperatures are maximum and minimum 25°C and 7°C, separately. The probable yearly rain in the district is 5.47 inches (139 mm) 2. Furthermore, the climate of Khairpur district is almost same around the northern Sindh. The summers are very hot and dry, the winters are short and cool, and it's dry and mostly clear year round. Over the course of the year, the temperature typically varies from 46°F to 112°F and is never below 40°F or above 117°F. From 21 April to 28 July is hottest weather and December to February is coolest season of region. And close to July to August are here rainy season.

### 3.19. Irrigation

Khairpur region has a well settled water system structure, having Sukkur barrage as the primary source. The names of the major channels and branches are as per the following; Khairpur East Waterway, Khairpur Feeder West, Dadu Trench, Rice Waterway, Eastern Nara Trench, Northwestern Channel, Nara Channel, Rohri Canal, Mir Wah , Palh Wah<sup>7</sup>. Agriculture of Khairpur mostly depends upon the canal irrigation. Similarly, here also has used river water and tube wells.

### 3.20. Livelihood:

In region are various types of surviving, most inhabitants of urban settings are businessman, daily wages, jobs in government and private sectors. And other hand rural population depends upon the agriculture, livestock and some has a jobs. Almost in the villages both worked male and female for survival. The major areas of district are under the village settings so therefore here economies depend upon the domestic animals.

### 3.21. Agriculture

Khairpur has rich lands and is enhanced in agricultural productivity. The clay of this area is very suitable for some crops including cotton, dates, wheat, vegetables, banana, and sugarcane. The dry hot environment, perfect for the natural products developed here, makes the organic product sweet, graceful, and delicious. The primary crops of Rabi season are wheat and gram, and during the Kharif season, cotton, oilseeds, and sugarcane are cultivated. The major fruits crop delivered are dates, banana, mangoes, guavas, orange, and lemon. The plantations are basically situated in Khairpur, Garmbat, and Kot-Diji Taluka. The area is well known for the date palms. Furthermore, dates also exported to the USA, UK, India, Canada, and Germany, etc. similarly in district produced various types of grasses.

### 3.22. Industry

The Khairpur district is agricultural region therefore here approximately industrialization lies on the agricultural products. District exports cotton, wheat and dates revenue within country and out of country. Trades in country linked to rail and road. Here are no large scale industries but small scale industries are here common. Like an in Khairpur city are many dates industries and labor worked there. Even in seasons of cotton and wheat cultivation many outsiders came here. Other hand in district is many crush plants, flour mills, cotton factories, ice factories and also seed plants.

### 3.23. Education

The education condition of district is a normal and it has eight positions about education rate between the districts of Sindh province. For the comparison of urban and rural settings the urban is a higher ratio of literacy than rural. In urban are approximately 64%; for the male is 79% and for female it is 48% and in rural area are 48%; for the female is 27% and for the male is 68%. Furthermore, in district are 3,149 primary level schools, 184 middle schools, 60 secondary schools and 17 higher secondary schools. In district are many other private education sectors. Similarly, in Khairpur are various types of universities and colleges such as a Ghulam Muhammad medical

college, Khairpur medical college, Gambit medical college, Shah Abdul Latif Bhitai University and also Khairpur technical college and Mehran University Khairpur (Education Department, 2019).

### 3.24. Communication

The Khairpur district has an area of 15,910 square kilometers and further it is divided into eight talukas; Khairpur, Gambat, Kingri, Sobodero, Kot-Diji, Nara, Thari Mirwah and Faiz Gang. And they all connected with each other through the roads. Furthermore, it shares boundaries to regions of Larkana, Shaheed Benzeerabad and Sukkur. National superhighway (N-5) meets the city of Khairpur with an all-out length of 60km in the region. The current street arrangement in Khairpur region is really suitable. The district headquarter of Khairpur is associated with its Taluka central command of Gambat, Kingri, Sobodero, Kot-Diji, Nara, Thari Mirwah through mtalled streets.

### 3.25. Languages

The majority of population spoken here Sindhi language because here masses affiliation with the Sindhi ethnic group. The rate of languages is the regular communicated in language is Sindhi (95.15%). Different dialects spoken in the locale are Balochi 2.70%, Punjabi 1.16% and Urdu 1.7%. Few individuals speak Siraiki

### 3.26. Major Casts

In Khairpur district are various casts and almost they are a local inhabitants of region, in village settings population are settled in the form of tribes and in cities area many casts lived to gather. The prominent casts of district are Talpur, Wassan, Syed, Mirjat, Chandio, Phulpoto, Rind, Kaladi, Memon, Sheikh, Gopang, Mahesar, Sahito and many Hindu are settled here. Similarly from some decades many tribes migrated here like a Baloch, Pashtun and Urdu speaker Syed (Muḥajar).

### 3.27. District Khairpur Mirs Health

The health structure of district Khairpur has the most prominent number of basic health Units and a second-most important number of rural health spaces in the Sindh province. The high number of Provincial Health Communities is because of the way that Khairpur has the second highest number of talukas next Thatta. And in district normally a rural health is set up in each Taluka. Anyway, larger parts of the area here are referring to the private settings. The PSLM 2006-07 notes that in urban zones 82% and in rural regions 70% patients consult to private healthcare centers.

Similarly, in rural areas are not health facilities for women and new born children. Here is no concept of community health, public health and not focused on medical ethics. In district is more private hospital than government. Furthermore In rural settings female is not access to get prenatal and post-natal care by health facilitators. . 58% urban and 36% rural ladies get pre-birth care from a usual health administration. 59% urban and 24% village ladies get Tetanus Toxoid injection. However, eighty-three percent deliveries in rural and sixty-seven in urban territories happen in homes usually within the sight of some family member/neighbor ladies or midwife. 27% urban and 23% ladies get a post-natal consideration from a formal health office. Moreover, in district are eight Hospitals, Dispensaries seventy-five, nine Rural Health Centers, eleven T.B Clinics, seventy-seven Basic Health Units and also five Maternal and Child Health Centers (USAID, 2014).

### 3.28. Kumb Health Profile

Health system of Kumb is totally commercialized proof of those private clinics and numerous medical stores. In Kumb is one government hospital, sixteen private clinics, twenty tow medical stores and three laboratories. In the private settings are health care providers both quacks and MBBS. Furthermore, here majority of MBBS practitioners has government jobs or otherwise that are retired. The most of population take medicine without prescription. Furthermore, in Kumb town publics are no information about health related issues and here rate of community health and public health are very less. Similarly, both government private health sector of this region is very poor and in critical condition almost people came to the Khairpur city or Larkana.



### 3.29. Religion

In region are mass of the inhabitants belong to the Muslim religion i.e. 96.86% and next Hindus are 2.93%. But here are many sects in Islam from which are some prominent such as a Shia – Islam, Sunni- Islam and also Sufi orders. In district are famous shrine of *Peer SainPagara* and it has *Dargah* (school of Islam). Furthermore, many people here are affiliated with Sufi- Islam and here are many shrines of saints. Furthermore, in Kumb town are majority of Shia sect.

### 3.30. Population:

According to the census of 2017-03-15 overall population of district are 2,405,523. The rural settings population is higher than urban; in the urban are 777,039 and in the rural are 1,628,484. Furthermore, in region is ratio of sex males 1,240,424, females 1,163,806 and for transgender is 104. the rate of females in Khairpur is higher than males

### 3.31. Cultural Heritage Spaces

In circumstances of district are many archaic and modern points for tourism because Khairpur is historically very rich. The most prominent visiting points here are Faiz Mahal, Kot-Diji fort, Sheesh Mahal, Kot-Diji archeological site, Rohri hills, Bilawal Park, Heritage Park, and Mehrano wild and so on. Basically without the, Rohri hills, Bilawal Park and archeological site other all build under the governance of Talpur. Furthermore, visitors came here from various regions of country and many people came from different countries for visit to specially Faiz Mahal and Kot-Diji fort. And other hands in region are many shrines and tombs of well- known saints like a *Sacha ISarmast* and *Pir Pagara Dargah*.

### 3.32. Settlement Pattern

In region has almost permanent settlement and modern structure. Here for the most part houses made with the bricks, mud bricks, wood, mud, iron, bamboo and blocks. But in region cities housing is different from village settings. Moreover, the places of a wealthy individual in towns are

building with blocks and bricks with limestone plaster. Populace individuals with a normal lower efficient class constructed their homes with *katchi* mud blocks and mud. Here are sufficient planning arrangements for drainage, airing and lighting.

The houses for the most part comprise of four to six rooms, one corridor (*Verandah*), toilet and kitchen. In village settings one room is additionally given for the most part to each house as a visitor room (*Oataq*) and in town visitor houses are separate and away from homes. As well the houses in towns are organized of *katchi* bricks and protected with timber, wood reeds, and grass. The yards are surrounded by fence of thorny brambles. These are built in a haphazard way and not in reduced squares. The poor workers and peasants lives in huts prepared of reeds and protected with sur grass. There are little settlement of hygiene and drainage in village territories.

### 3.33. Income Resources

The primary resource of earning of the people in city is commerce of different natures and small scale industry, while in rural territories agriculture is the core of economy. In rural regions individuals keep domesticated animals in their homes for to fulfill basic needs like a butter, milk, and yogurt, and in emergency situation they sold animals. Furthermore, in district many people worked at crash plants and daily wages. In urban settings almost people has a small scale business and many of both urban and rural have a jobs.

### 3.34. Food Pattern

Generally, the food pattern of this region distributed based on socio-economical class. But almost here individuals use wheat and rice and some people moreover take *juwar*. Similarly, Fish, beats, pickles, chicken, meat, yogurt, and vegetables are utilized by individuals as food substances. In urban areas, water is acquired from hand pumps and wells, while in the district zone it is gotten from kutchu wells and waterway water courses and lakes.

## Chapter 4

### Bioethics and Usage of Antibiotics

This chapter provides knowledge which was conducted through the anthropological understandings or lenses (applications); observation, visions, interviews and discussions. In this chapter I tried to examine ground realities which are connected with the overuse and misuse of antibiotics, such as a socio-economic, political, governmental and how antibacterial agents' knowledge produced and transferred from global to regional. Similarly, in this chapter the study documented doctors-patient's relationships and who is questionable for antibacterial resistance? Moreover, this section provides fundamental dimensions which arise as reasons behind the overuse and misuse of antibiotics. Like a drug distributor's and doctor's irrational distributions of antibiotics and people's perception about consumption of over-the-counter use of antibiotics. In addition, in this chapter I discussed ethical standards of health and ethical dilemmas which are behind overuse and misuse of antibiotics.

#### 4.1. Reasons of Antibiotic Prescriptions

In Kumb research observed; unjustified usage of antibiotics is common both in community and hospital settings. Usually, the overuse and misuse of antibiotics in Kumb has several reasons, including: Growing numbers of unqualified medical practitioners. Nonstandard diagnostic laboratories, patients' self-medication, easy availability of over-the-counter antibiotics, lack of public awareness about rational use of antibiotics.

Behind the prescription of antibiotics are various reasons; such as a social, economic, implementation of laws, lack of clinical skills and also medical professionals are not sincere towards patients. Occasionally they prescribe antibiotics when they are not sure if an illness is caused by bacteria or a virus and sometimes patients are not waiting for test results. So, some patients might expect a prescription for antibiotics. One doctor told strep throat is a bacterial infection, but most sore throats are due to viruses, allergies, or other things that antibiotics cannot treat. But many people with a sore throat will go to a health care provider expecting and getting a prescription for antibiotics that are not necessary for them.

#### 4.2. Doctor's Opinion about Antibiotics

Doctors have different narratives about prescription of antibiotics; most of doctors said that they have prescribed antibiotics because of it gives suddenly relief to patient; also they are themselves responsible, because they did not wait. Similarly, he said for the flu, cough, fever, sore throat and other viral infections almost prescribed 3<sup>rd</sup> and 4<sup>th</sup> generation of antibiotics. Continuously he stated that he usually prescribed *Amoxicillin*, *Tetracycline*, *Trimethoprim-sulfamethoxazole* (*cotrimoxazole*), *Erythromycin*, *Ciprofloxacin*, *Cefadroxil* and *Cefixime* antibiotics. The respondent is a retired MBBS doctor; currently he practices in private settings.

Around thirty plus is OPD, here majority of patient's ailment due to cough, Cold/flu, Pain, Fever, Stomach ache Diarrhea, allergy, kidney threat and other seasonal diseases, the Dr told me. When I asked him questions about my topic related then he answered antibiotic is being prescribed for every condition. Moreover, he said that he prescribes almost 3<sup>rd</sup> generation of antibiotics. If should be, otherwise does not prescribe antibiotics, patients do not visit, they practice over prescription of antibiotics, and this is common culture as well as practice of there. Furthermore, he said that according to his empirical evidence; in private health settings antibiotics more used then government health clinics.

Moreover, he told that he known unnecessary usage of antibiotics is wrong also having many side effects. Similarly, he informed that even patients get prescriptions from doctors, but do not follow properly including do not complete the course, because of the bacteria remains inside the body including having chance to raise up next time, it becomes difficult to kill it with the same medicine and amazingly here prescriptions are not required for purchase antibiotics.

Professor DrFarukh is teaching subject community medicine in Khairpur medical college. He said behind the overuse and misuse of antibiotics is main reason capitalism. Doctors prescribed antibiotics for the sake of money. Continuously he said laboratories and unqualified and irresponsible practitioners promote to overuse and misuse of antibiotics. Drug regulatory authority is not checked to clinics, medical stores and pharmaceutical companies. Moreover, he said in

district level are no any awareness seminar conducted. Similarly, he said tuberculosis and kidney throat is a major side effect of irrational use of antibiotics.

In Kumb I have observed almost doctors prescribing antibiotics for simple diarrhea, although this treatment of is highly useful for temporary but for future generations it is very harmful. I have also met specialist doctors who prescribe antibiotics and various types of nonsteroidal anti-inflammatory drugs (NSAIDs) for a viral respiratory infection instead of an acetaminophen and a combination of decongestants and dextromethorphans. Doctors are absolutely disgusting, more irresponsible than patients.

The child specialist and academic professor Dr Javeed kerio said doctors have no proper knowledge about diagnosis. Patients have no faith upon young doctors and they gave first priority to old and aged doctors, quacks and over prescription we are last option for them. Old doctors have no knowledge about new medical researchers then they always applied old techniques for treatment. In addition, he said antibiotics could be prescribed for the chronic viral diseases like flu, cough and sore throat but after the proper diagnosis. Similarly, he said as being a child consultant I seen majority of doctors prescribed antibiotics to newborn baby.” Liver of newborns not functioning for 24 hours” Do not use Ceftriaxone in a child without a doctor's advice. And Ceftriaxone should never be used in a premature baby, or in any newborn baby who has jaundice (yellowing of the skin or eyes) and thalassemia.

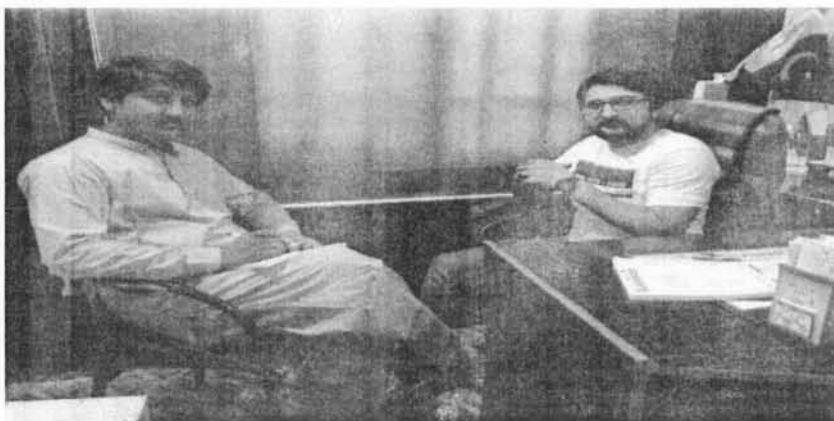


Figure 1: Discussion to doctor about usage of antibiotic and their socio-cultural reasons

#### 4.3. Medical Store's view about Overuse and Misuse of Antibiotics

In Kumb are two types of medical stores; first clinical practitioner's drug stores and second are separate by clinics. The total stores are 32, which those 17 are connected with clinics and 15 are separate. The respondent told: In every prescription at least two to three antibiotic drug prescribed by the doctors. Additionally, other respondent said; purchasing drug through the old prescriptions, drug' name, colors and also majority of community use packet of medicine. The 80% people practice self-medication. I was surprise when drug distributor said an antibiotic is use for every illness. Once, with the friend I went to doctors, who prescribe Ceftriaxone to six-year-old baby for diarrhea. Although it is use for lower respiratory tract infections, skin, skin structure infections, bone and joint infections. I conducted 13 drug distributor's interviews; finding reported in Kumb overuse and misuse of antibiotics observed very common. Survey reported in city major antibiotics use through the prescription, over -the- counter, self-medication and wise suggestions. Thus medical store keepers have not enough knowledge about antibacterial resistances and their projects like an antibacterial stewardship programs.

#### 4.4. Community's Perceptions about Antibiotics

Like most of developing countries, same to in Kumb antibiotics can be purchased without prescription, even this practice is so unethical as well as illegal. Continuously, antibiotics are readily available on demand from hospitals, pharmacies, drugstores and roadside stalls. For example, in Kumb maximum people visit to local pharmacies and minimum were prescribed by physicians. People are encouraged to buy from unofficial distributors because drugs often are not available in government hospitals. In additionally, Drug vendors' usually have little or no knowledge of the required dosage regimen, indications, side effects, or contraindications.

Pharmacy raps and drug distributors almost medically untrained and they try to convince potential buyers to purchase the drug, even if they are no need. Particularly, for most customers buy antibiotics without prescriptions. These sub inhibitory antibiotic regimens affect for selection of resistant bacterial strains. Antibiotic use in Kumb is underestimated. The motives for self-

medication and antibiotic overuse by laypersons are similar to those for clinical exploitation by health professionals.

Usually, In Kumb if patients infected with seasonal illness admitted they had taken at least one to antibiotics before a hospital visit. The quantity of patients' who self-medicate is probably higher, because patients are often reluctant to admit having taken antibiotics before visiting a hospital. Here are Common cultural beliefs about antibiotics. Similarly, here are the common notions that antibiotics medicine treatable for every symptom, antibiotics can heal many illnesses including acid stomach and headaches.

The misuse of antibiotics frequently becomes integrated into the local culture; antibiotics are used to prevent diarrhea after eating suspected contaminated foods or (in prostitutes) to prevent sexually transmitted infections. Another cause of antibiotic overuse or misuse and selection for resistant bacteria in Kumb is a poor patient and doctor's communications. "Physician-patient interactions are often inadequate". The gap of interaction is a symbol of irresponsible attitude of doctors for patients, in Kumb study observed patients feared by the doctors. Like another rural area, same in Kumb patient may be unable to read medicine labels, people said we cannot aware by the medical language. Finally, because many drugs are expensive, indigent patients purchase incomplete regimens whenever possible and discontinue treatment when symptoms disappear but before the pathogen is eliminated

People have different opinions about overuse and misuse of antibiotics; the relation between doctors and patients has a seller and customer, have a big ethical gap between doctors and patients. Doctors are duty to care patient's values. Humans life and death is integrated their responsibility and seriousness. Patients have believed on doctors. Majority of patients have no knowledge about misuse of antibiotics and patients said we not understand medical language. Moreover, patients said we not asked to doctors about drug and they not tell us about side effects of antibiotics. Moreover, one patient said I never asked to questions about drug which they gave us and doctor said if any patient asked me then I tell them about side effects of drug. One respondent stated: lack of guidelines and control is a significant issue in the Kumb. Medicine distributor will sell you any medicine for cash. There is no regard for symptoms or safety. Indeed, even in Kumb, a drug

distributor offered me antibiotics for my sore throat without a preparation! It is now commonly accepted that most cough and colds are brought about by virus and antibiotics agents have no impact on them. A drug pharmacist said that various people come and request antibiotics from him. "I can't demand them for prescription explanation because as well they will purchase the medication from some other medical store.

#### 4.5. Patients Demand to Antibiotics

One respondent said for the misuse of antibiotic is not only practitioners responsible also patient's irresponsible behavior is major factor of it. Without antibiotics they do not want leave physician's office. Moreover, he said in Pakistan linezolid drug is easily available over the counter but this is legally not approving without prescription. Similarly, he said we have a lot of needed to awareness concerning to patients. In Kumb patients are mindset if doctor prescribe excessive medicine that means who is a very knowledgeable and well trained. "Behind the patient's demand" is two main reasons one financial and other awareness; Patients want to immediately healthy because they belong to the daily wages class and they want to return to next time. Additionally, patients avoid testing because tests are very expensive and in government settings are nonfunctioning. Once doctor suggest to patient test who replied I have no extra money for it. Other hand patients have very little knowledge about proper treatment. Before visit to clinics they practice home treatment and get indirect drug. Government practitioner said I was practice in private settings; I avoided prescribing unnecessary antibiotic medicine to patients. But unfortunately patients not came and finally I close it, because patients not satisfied as they wanted suddenly relief. In addition, he said pharmaceutical companies offered me many time richest gifts, tickets also money for marketing to uncertified and unqualified drug.





Figure 2: With the compounder of private clinic, in the case of doctor's absence he practice in clinic instead of doctor

#### 4.6. Overuse and Misuse of Antibiotics by the General Public

Rural areas antimicrobial drugs can be purchased without a doctor's prescription, although this practice is illegal. In Kumb for instance maximum people visit the near local drugstores and minimum were prescribed by certified physicians. Similarly, relatives, friends, wise persons, drug sellers, and quacks encourage buying antibiotics for seasonal infections. And they have not themselves authentic medical knowledge. Before the approach to doctor's patients visit local medical stores and they took one to two antibiotics. Moreover, antibiotic is rapidly acquirable on demand by medical stores, clinics, and pharmacies. Other side people have no access to near well-trained doctors and they have no approach to government health departments.

One respondent said antibiotic is a culture of our society. Further, he said antibiotic heal here for every disease. Surprisingly antibiotic is used to prevent sexually transmitted illness and abortion also in high rate use in prostitution. One drug distributor said I suggest twenty *Chloroquine* tablet at a time for abortion but medically it used for malaria treatment. The other major cause is behind the irrational use of antibiotics is doctors-patient's miscommunication.

## Chapter 5

### Social and Public Health Perspective in the Usage of Antibiotics

This chapter provides a primary and secondary knowledge to related use and misuse of antibiotics. As a researcher, I tried to document socio-economic, cultural and political intervention in the usage of antibiotics and in this section had been well-defined consideration of public health and their applications towards overuse and misuse of antibiotics.

Public health is a discipline about the bio-health. Public health is an art and science of preventing disease prolonging life and promoting health the organized efforts of society (Winslow, 1960).

Public health play is very important role to reduce diseases and improving human health and also it is a bridge between community and government. Public health's officials advocate to community to government, and find the social and cultural consequences behind the diseases. Like as an economical condition, hygiene system and government policies which made for the community health maintenance. Public health developed strategies to address public health issues. Public health as a collection of practices that placing a priority on improving health and achieving equity in health for all (Coll Hutchison, 2010).

Similarly, Doctors, government and pharmaceutical companies exploit to ordinary peoples through medical discourse and hegemony. They usually do not provide good medical treatment to community. Also, demolish our cultural values and social values such as a decade ago, peoples had no concept of antibiotic and other modern medicines they used to traditional and folk theories for seasonal illness but nowadays people use many different types of antibiotic. Community do not use folk theories or ethno medicines as a Fennel (*saunf*) Black peppercorns (*kali mirch*), Cloves (*lavang*) Cinnamon or cassia bark (*dalchini*), cardamom pods (*elaichi*).

The large amount of population did not visit to the doctors due to lack of awareness of proper physical checkup. In result, people generally rely on the use of antibiotics because of the easy access and availability at nearby medical stores and shops. The use of antibiotics is related to socio-economical class stratification of the society.

Moreover, the lack of socio-economic and transport people usually avoids to visit doctors and medical health care facilities. In result, people rely on antibiotics. These antibiotics have serious side-effects on community. Hence, this tried to explore the role of local private health service provider in the community.

Researcher selected this topic because it is biggest issue of contemporary period and this dilemma behind social and cultural consequences. Behind this phenomenon, there is major role of pharmaceutical industries, which sell harmful unnecessary drugs but government has no policies and check and balance about that. The overuse and misuse of this vulnerable innovation is a major cause of increasing ratio of mortality and morbidity. Doctors are habitually prescribed unnecessary antibiotics, that is against the bioethics (medical ethics) Recently in Pakistan was organized social public walk for reduction to antibiotic resistance by the Social Welfare Society of Khyber Medical College and health wing of KTH with collaboration of World Health Organization. The walk was demand to reduce unnecessary product of antibiotic and to encourage best practices among general public, health workers and policy makers to avoid further development of antibiotic resistance.

According to Pakistan medical association (PMA), in Pakistan there are approximately 600000 unregistered hospitals; it means government of Pakistan has not any policy and law about health system.

Overuse and misuse of antibiotic medicine is not only effects on human health and cultural values but also effects on ecosystem. The practice and usage of antibiotic is not practice only for human health but also in the field of agriculture, food producing animals and birds like livestock, poultry forms, Hubbard seeds, and pesticides.

### 5.1. Socio-Economic Reasons behind Overuse and Misuse of Antibiotics

Economy is the backbone of any society and institution. Especially in Pakistan Health institution is totally a corporate. The thick availability of uncertified medical stores, unregistered liberties, unlimited quacks, growing number of private clinics, globally transaction of medicine and now drug avail at general shops, those all dimensions are valid evidence of socio-economic reasons (privatization) in health sector. Moreover, study finding; behind overuse and misuse of antibiotics main causes is private clinics because they prescribe antibiotic for the sack of money.

One respondent (doctor) said: pharmaceutical companies and doctors' relation are like an industrial and client. Pharmacy agents offer mega schemes to doctors for antibiotic consumptions; they gave them cars, abroad tickets and also expensive gifts. One private clinician said came to me 77% peoples which belongs to the lower income class and they not afford proper treatment that's reason they incomplete dosages or prefer to self-medication. And most of people not wait for test result and that I prescribe antibiotics.

### 5.2. Testing Culture:

Other major cause is behind the overuse and misuse of antibiotics is very less quantity and quality of laboratories and unqualified Lab practitioners. Before prescribing antibiotics, it is really important to diagnose the history of disease, but in this research it's also observed that excessive rate of antibiotics were recommended without lab (Sadaf, 2016).

In Kumb are total numbers of laboratories four and from them two are unregistered. Now days in every corner of Kumb are medical clinics and near them are not laboratories. One respondent said I take medicine without testing because doctors not suggest me test furthermore he said near the clinics are not laboratories. But doctors' opinion is different by patients, doctors said we suggested test to patients but patients not interested and patients said I have no money for test. Another patient said laboratories pay heavy prices for that reason we did not prefer test.

### 5.3. Covid19 and Antibiotics

The covid19 is a global threat and globally people deal it with different ways. The self-medication, herbals and traditional treatment is common in Pakistan. But massive use of antibiotics for covid19 is very frequent. A study showed that 72% of corona virus patients received antibiotic that just 8% have needed, indicating that, the possibility for a rise in antimicrobial resistance after this epidemic is possible (Giroir, 2020). The symptoms of covid19 pandemic, viral disease and typhoid are very similar like a cough, sore throat, runny nose and fever is common in all them. For example, large population of Pakistan took aroma for covid19 by the choice of doctors and own. But properly it used for typhoid fever and other bacterial diseases and also Dexamethasone medicine used for

covid19. Similarly, hydroxychloroquine (antimalarials) drug treat to covid19, but it is scientifically treat and prevent to malaria. Another class of antibiotics have been prescribed and suggested by practitioners or drug distributors to treat pandemic corona virus that name is azithromycin. The properly azithromycin used to treat ear infections, infections of the skin, eye infections, respiratory infections also for the prevention of genetically transmitted diseases.

#### 5.4. Antibiotics a Public Health Dilemma

Public health play very important role to reduce diseases and inappropriate use of drug. Public health practitioner Dr Sadiqe Said, any type of discrimination or prejudice is a public health issue similarly he expresses any social construct that creates inequalities for one group and privileges for another group in any aspect of daily lives health, education, access to resources etc. all are public health issues because their impact is on whole community or society. Public health advocate to community; Public health is about population/community not an individual. Unequal distribution of sources such as a food, drug and hostile environment for some groups that could lead to negative impact on people's health and wellbeing. But people perceive them as natural or biological realities rather socially constructed inter subjective entities. And other respondent Zafar Debra said all issue but every social issue has direct or indirect related to health and well-being. Furthermore, study reported here are no public agents active.

#### 5.5. Side Effects of Irrational Use of Antibiotics

The lifesaving drug is very dangerous when people inappropriate use it. In the same condition overuse and misuse of antibiotic is caused many non-communicable diseases. Of them diabetes 1 and diabetes 2 are major. The kidney failure and tetracycline antibiotic develop teeth and bone stains. Moreover, repeated use of antibiotic is affected to digestive system. And other is numerous side effects of overuse and misuse of antibiotic like a stomach pain, ulcer, breathing problem and lungs disease.

## 5.6. Economic Factors behind Overuse and Misuse of Antibiotics

Antibiotic utilizations in industrial and non-industrial countries are closely correlated with the capitalism growth of the population. The poor health care system is address to overuse and misuse of antibiotics; lower and middle income countries especially in Pakistan. In same condition, lake of economical recourses, inadequate distribution of health equipment, unequal distribution of societal mechanisms like a derange system, food, drinking water, transport also healthy environment. These all things are underling in the context of economy. The growing number of medical stores, private clinics and laboratories are symbol of capitalism. I was surprised in Kumb at least two children of doctors studying in Pakistan's richest private medical institutions. The common narrative in Kumb is medical is an occupational field.

These all economical standards closely integrated with commerce. The upraise number of pharmaceutical industries and approach to medicine every corner of world that is evidence of economical dimension of health. Why communicable and non-communicable diseases are more in developing countries than developed regions? In developed counties access to first copy of drug, food used purely, environment is very hostile and main is health is communal in them. In developing counties, the cost of treatment is very expensive of well-trained practitioners and witch laboratories are good result also that are very costly (Agha khan and DOW lab).

## 5.7. Inappropriate Allocation of Health Equipment

Irrational and inadequate allocation of health equipment and poor surveillance and sanitation and worst condition of clinical settings are more questionable for Misuse of antibiotics also antimicrobial resistance threat. In clinics are many ethical issues like a cleaning, uncertified drug, Absence of testing equipment, untrained practitioners and they use same thermometer. The study reported poor clinical infrastructure is caused by many communicable diseases. For example, doctor not hand wash after checking to patients and ultimately germs transferred to other patients or people drunk water in same class. And almost we seen every type of effected people set in one waiting room.

### 5.8. Knowledge to Practitioners about Usage of Antibiotics

The over prescription and irrational use of antibiotics suggested doctors have a very little knowledge about strategies and clinical ethics and legislation of health. If they were better informed about drug and clinical standards they never prescribed high rate of antibiotics. "doctors have need much guidelines". And other hand, if doctors have knowledge that means they not sincere to professionalism and they prescribed antibiotics for personal interest. For example, one quack practitioner prescribed Cefixime antibiotic to around two year baby for diarrhea. I observed doctors have no proper knowledge about antibiotics stewardship programs. In the absence of doctors practiced their close relatives. Almost Doctors shocked, when I asked them overuse and misuse of antibiotic is against clinical ethics; Doctors consciously or unconsciously prescribe unnecessary antibiotics for every viral disease. Near the doctor's prescription of antibiotic is not wrong. Clinical practitioners have no moral and ethical values to profession, as a responsible doctor has a duty to tell to patients about side effects of misuse of antibiotics. Here majority of people have no knowledge about side effects of antibiotics. Here Public health officials are not active and government has no intervention.

### 5.9. Social Movements Concerning to Antibiotics

Fought for rights and livelihood is our duty as some sincere and responsible citizens. Social movements are a collective sound and this is a strong model to reduce any societal issue. But unfortunately here people not rise up vice for collective public interest. As well as social movements are a symbol of progressive and developed Nations, these communities are very active against communal interest. For example, they a raise sound against environmental issues, misuse of media, racism and they arraigned antibiotics awareness week every year in November 18 to 24. Study reported in Kumb or on overall district level still any movement not performed against overuse and misuse of antibiotics and amazingly local social organizations worked for the personal interest.

#### 5.10. Development and History of Antibiotics

Antibiotics drug are developed in different times but unfortunately bacteria resist and combat it in very little time. A First antibiotic was penciling and it functioned against bacterial infections only two years 1943 to 1945. After then scientist made veccomine it also worked only sixteen years 1985 to 1998. Then in 2005 scientist developed four types of antibiotics but bacterial defense system became very strong and after teen years Bacteria resist against it. Why Antibiotic manufacturer companies or agencies who invest heavy cost on antibiotics drug although it not long lasting beneficial for companies.

#### 5.11. Role of Pharmaceutical Companies towards Antibiotics

Today is an industrial era; medical sector is totally corporate, pharmaceutical stockholders produce medicine more than consumption (surplus). Pharmaceutical consumers are trying to explore antibacterial production for mostly economic reasons (Mossialos, 2013). Producers had competition with each other and they distribute drug for the vested interest. During the field study observed, doctors are paid by companies and they offered them foreign trips, I was surprised when doctor said pharmaceutical company gave me Vigo car for promote to their antibiotics and other drug. Likewise, companies distribute medical equipment to unregistered clinicians and drug stores witch that are extremely against pharmacy ethics. When I went to doctors for interviews I seen there in every ten to fifteen mints pharmaceutical reps visit there, and they also forced them for purchasing and they gave them samples in free for marketing.

#### 5.12. Gifts to Practitioners and Drug Stores by Pharmaceutical Companies

Rough and unethical drug promotion is an economical phenomenon; pharmaceutical industries gave monetary rewards to doctors on the basis of perception quantity. Pharmaceutical agents paid to medical practitioners' monthly and quarterly payment. Private clinicians and drug store workers said industries paid rewards in many forms such as a home decoration, health equipment and clinical furniture, within and out of country visits, for personal use items, continuously they examined multinational companies offer very less gifts to practitioners then local and national



industries. In additionally study reported for the personal usage they gave to clinicians' laptops, mobile phones, ear conditioners, clothes and car.

Same as same for clinical decorations they gave those bad sheets, glasses for drinking, furniture dustbins, air conditioners, fans, wall clocks and computers. Similarly, in medical equipment companies gave to doctors and medical stores, surgical kits, torches, thermometers, diaries, pads for prescriptions, stethoscope, insulin pump, breast pumps and other types of machines. On the same way also for the home decorations thy gave them diner sets, bad sheets, washing machine, fridge even homes

### 5.13. Control on Infectious Diseases

The numbers of antibiotics used for the infectious diseases, infectious diseases due to the disorder of the microbial organisms such as a fungus, bacteria, viruses and parasites. Diffusion of infectious diseases is very culture to culture like a handshaking, food pattern, societal infrastructure and gatherings. Micro – Organisms' infectious diseases are transmitted in different ways, frequently by transmission and absorption of physical or breathing agents. Pathogens will only be transmitted through touch dirty surface. Some pathogens became airborne; airborne dispersal promotes the rapid increase of microbial, particularly in crowded spaces.

Arise here ethical question toward individuals, as a responsible citizen individual's duty to isolate him in condition of infectious affected and spare harmful pathogens. In the point of sale, raw meat, vegetables, and other foods can become contaminated with pathogens (Fox, 2017). The big example of unhygienic meat is covid19; poor agricultural water increases many unhealthy products. In Kumb market is full with polluted food, food installs are inside the roads all dust of market put on the food installs. Ethical obligation is for the control of food product manufacturers and distributors to clean food settings and use hygienic material. The very same refers to polluted water, while quality of water generally did on existing structures for public hygiene and sanitation.

More transmission of pathogens became in poor clinical settings and it is biggest ethical question, such as hand washing, testing of patients, insulation, techniques of limitations and ventilation and

this poor clinical environment address many ethical issues. The analysts of the Global Hygiene Council (GHC) on 3 September 2020 expressed; The unhygienic activities in daily life and home to make sure they are successful and relevant to the urgent public health problems we are facing today, including such an antibacterial resistance and COVID-19. Similarly, Good hygiene draws attention in two ways to the fight against resistant bacteria, by avoiding disease and decreasing such a need prescribe antibiotics. Similarly, It has been shown to prevent the spread of infections from person - to - person by avoiding infectious disease-spreading germs from high-risk surfaces and hands at crucial times, including when cooking food or using the washroom (Hart, September 13, 2020).

## Chapter 6

### Bioethical and Legal Consideration towards Antibiotics

This chapter provided the primary and secondary data related to the bioethical/ medical ethical and legislation to associate with the use and misuse of antibiotics. As a researcher, I tried to examine ground realities and medical ethical responsibilities, which are connected with the usage of antibiotics, also evaluated doctors and patients' relationship.

#### 6.1. Bioethics

Bioethics is foundation of the philosophical application of ethical theory to health related issues is medical ethics; an examination of the rules which define proper and good conduct between a physician and patients (Steward, 2017)

If any doctor prescribes an unnecessary medicine that is against the medical ethics but in our society, doctors usually prescribe antibiotic for the viral and seasonal illness although which are not for these diseases.

The Pakistan medical and dental council [PMDC] suggested in 2002 code of ethics [bioethics], which taught should be compulsory to all medical private and government colleges and universities, and also, should be conduct trainings to medical practitioners about medical ethics, and it must include in medical curriculum. This code of ethics is a main purpose to educate and aware to both community and physicians and physicians must should be caring the decision and dialogues of patients (Council, 2002).

But unfortunately, in Pakistan's federal and provinces health ministry cannot implement this code in real sense. Anthropological inquiry into bioethics has spanned a wide array of issues. However, many studies focus on the moral issues raised by the use of technological innovations in biomedicine because these technologies push social and cultural boundaries to new limits (Brodwin, 2000).

The bioethics is an interdisciplinary subject; the primary focus is on the health related problems. Witches arise through the biotechnological innovations in everyday life such as a drug, genetics,

reproduction, environment, transplantation and in vitro fertilization. It is examining ethical principles which address good and proper conduct within doctors and patients. Bioethics is the study of the principles of right and wrong behaviors that guide medical research and practice with both humans and animals. Bioethical principles applied in the context of academia, hospitals, health institutions, pharmaceutical companies also in private health sectors. Furthermore, it is divided in the three sub-disciplines clinical ethics, public health ethics and research ethics.

### 6.2. Public Health Ethics

Public health subject is primarily emphasis to improving human health and reducing health issues at the community level. Public health interacts with the government and organizational agencies and their responsibility to solve medical issues through the strategies and policies. Public health determinants of disease address disease are not only technical and clinical concern but it is integrated with the politics, governments, and policymakers' also ethical issue. Furthermore, public health ethics examine the ethical principles, morals, values and rules that guide to research, policy and action to promote individual health and avoid health dilemmas (prevent disease).

### 6.3. Clinical Ethics

Clinical ethics refers as good conduct behavior between patients and clinicians. Practitioner is questionable and responsible for every movement of clinics. Doctors' are duty to care and save present and future generations. He must be avoiding racism, nepotism and never discriminate on the basis of religion or sect. If any doctor prescribed unnecessary drug for economical or personal interest and without proper diagnosis treatment is an injustice with patients, and treat to patients as client that is also against clinical ethics. Similarly doctors duty to facilitate to patients, if practitioners have no proper health equipment that is no ethically eligible for clinical practice. Clinical ethics is concerned with the challenges of patient care.

Tom Beauchamp and James Childress created the four principles of health-care ethics in 1985. Which provide guidelines for medical professionals to take action as they eventually face difficult

clinician-involving conditions? The four principles of ethics in health care include justice, beneficence and non-maleficence and autonomy. The correlation between the medicinal value and the adverse effects of prescription medications could be an example of beneficence. It is more relevant for the prescription of antimicrobials. The word non-maleficence, meaning 'doing no harm' or even doing the least harm possible in order to achieve a beneficial outcome, describes the choice between the immediate advantage of anti-infective treatment and the likely lack of future therapy for that patient. This word could also be used in principle for current practice of providing antibiotics with clinical prophylactic treatment, perhaps a right in the future. Autonomy itself indicates an ethical concept that intimates independence from outside reasonable control. Doctors may recommend what we think is best for a patient in this regard, explaining scientific judgments through clinical observation, expertise and often psycho-social factors. Attempts to influence clinical autonomy mean which doctors do not endorse restrictive legislation. Especially they feel that these quick-changes a specific patient or illness or if cost factors decide the choice of therapy. The theory of justice provides that in all medical decisions there is a dimension of fairness: fairness in decisions that burden and benefit, and also appropriate allocation of limited resources and new therapies, and following the relevant laws and regulations before taking decisions. This ethical element, suggested as a doctor's justice, fair dealing and honesty in prescriptions could be forbid to upcoming generation from infectious diseases.

#### 6.4. Overuse and Misuse of Antibiotics by Unskilled Practitioners

According to Pakistan Medical and Dental Council, more than 600,000 quacks are working across Pakistan and one-third of them are practicing in Sindh, according to statistics. Most of them are practicing in the province of Sindh, reported to be about 200,000, and around 40% of them are employed in the metropolitan and the country's largest city Karachi. Furthermore, in urban and rural are raising numbers of quacks in Sindh. Therefore, the health of the province's population, especially in low quintile of wealth identified as weak, including; poor, critically ill, women, elder and children are at very serious risk. Kumb is full of the quacks and other type of uncertified health practitioners also MBBS doctors are very rare well-being. Here health workers, dispensers, nurses, drug distributors and veterinary doctors practice in private health settings and they have no proper awareness about Side effects of antibiotics. They are not trained and educated medically also they

have very less knowledge dosage of drug. For example, here high rate of clinicians prescribed elflocks antibiotic for cold.

No	Commonly doctors prescribed antibiotics for these diseases
1	Toothache
2	Vaginal infection
3	Respiratory tract infection(RTI) including common cold, laryngitis
4	Urinary tract infection(UTI) including kidneys, bladder
5	Typhoid
6	Throat pain
7	Pneumonia ( infection caused by virus, fungi and bacteria) it is affected to lungs
8	Cough
9	Bronchitis
10	Fever
11	Flu
12	Diarrhea

**Table 1: In these symptoms' doctors commonly prescribed antibiotics**

### 6.5. Legal Context of Irrational Use of Antibiotic and Other Types of Drug

Medical practitioners are responsible for administering antibiotics with extreme caution and due diligence. A critical analysis of the overall legal framework shows that there is no concrete law on the use of antibiotics in the world, especially in developing countries. "Giving antibiotic advice to patients and animals, applying antibiotic susceptibility tests without serious harm to the health of animals, especially humans, is a violation of human rights in a civil society and the responsibility of the state. Strict and concrete steps need to be taken in this regard. "In Pakistan, most general practitioners prescribe antibiotics without microbial diagnostic tests (minimal prevention in antibiotics and antibiotic sensitivity tests)

#### 6.6. Punjab Health Care Commission Act, 2010

Any practitioner who prescribes excessive antibiotics is guilty of medical negligence which is involved by Section 19 of the 2010 Punjab Health Care Commission Act. A health care professional may be found guilty of medical negligence for the following findings. The healthcare system does not have the appropriate human resources and equipment it claims to have acquired or in the case at problem, it or any of its employees can't exercise the skills it or its employee acquired with appropriate competence. Similarly, medical or surgical treatment is not really accepted and describes risks as medical negligence.

#### 6.7. Drug Regulatory Authority of Pakistan (DRAP)

The Drug Regulatory Authority works through DRAP Act 2012 (as amended in 2017). this also functions under the National Health services, Regulation, and Coordination Ministry. It aims to regulate drug development and distribution at national level and functions there. This body operates at the national level and efforts to improve health facilities in Pakistan, although it is less of a practical check on antibiotic prescription.

Drug regulatory authority Khairpur officials had put blame on government and political bodies, official said in district Khairpurmir are eight talukas and drug inspector is one also government not pay other expenditures like a car and fuel. Continuously he said political rulers defend to drug stores and sport them in cheapest and expired medicine consumption. Himself he stated corruption here is on high peak, we took five to ten hundreds per month by medical stores. Moreover, he told in Kumb town and their surroundings have a many unregistered medical stores. But he had no knowledge about ethical consideration of drug distribution and their professional responsibilities. Drug inspector shaft Ali said political influence in drug regulatory authority is fundamental reason to promote antimicrobial resistance and misuse of antibiotics. Expired drug, without prescription selling, untrained drug practitioners' unlicensed medical stores and laboratories are common here. These unethical activities are against medical ethics and humanity. Continuously he stated I had seven years in this field before today I never listen that antibiotics is a threat and did not seen official awareness talks about it.

Pakistani courts have also taken a strong stance on the issue of unnecessary prescribing antibiotics. In a case cited as 2016 CLC 95 the honorable Lahore High Court ruled considering the various side effects of antibiotics, it was not child's play to dispense and prescribe antibiotics and other allopathic medicines. Anyone who would dispense allopathic medicines, particularly antibiotics, without knowledge of their side effects, would be at risk of implementable wrong or negligence (Provincial Assembly of Sindh Notification Karachi, 20TH MARCH, 2014).

Drug inspector Shaft Ali said political influence in drug regulatory authority is fundamental reason to promote antimicrobial resistance and misuse of antibiotics.

Expired drug, without prescription selling, untrained drug practitioners' unlicensed medical stores and laboratories are common here. These unethical activities are against medical ethics and humanity. Continuously he stated I had seven years in this field before today I never listen that antibiotics is a threat and did not seen official awareness talks about it.

#### 6.8. Allopathic System (Prevention of Misuse) (West Pakistan) Rules, 1968

The Rules of the Allopathic System (Misuse Prevention) (West Pakistan) rules, in 1968 sets out strict requirements for licensing all practitioners who want to prescribe antibiotics. It clearly shows that antibiotic prescribing is a serious matter and should only be provided by the practitioners properly prescribed under the law.

#### 6.9. Pakistan Medical and Dental Council - Code of Ethics for Practice Medical and Dental Practitioners

The Code of Ethics of Practice for Medical and Dental Practitioners lays out the code of ethics which medical practitioners must follow during their practice. Section 9 of the same Code demands the reasonable use of medicines and encourages medical practitioners never to forget that patients' lives and safety depend on their attention and proficiency, which they should practice actively and fairly. Section 9 below identifies the following.



Every medical or dental practitioner shall practice the prescribing of drugs with fair and honest practices. Moreover, physician or dental surgeon must be free to choose who to serve, to work with, and to set timetables and place of professional service for patients. Never forget, in his treatment, that the health and lives of those committed to his care depend on his abilities and care. If not accessible for any reason and the patient required constant treatment or diagnosis, the medical or dental practitioner shall arrange appropriate replacement expertise for another medical or dental practitioner and advise the patient. A doctor or dental practitioner encouraging a patient to seek medical care from another physician or dental practitioner is proper, but in the case of an emergency the doctor or dental practitioner must first treat the patient. not be required to treat each and every person requesting his or her services, but not only be prepared to respond to the calls of the sick and the injured if, in his or her view, the circumstance warrants it as such, but be careful of the high morals of his or her role and of the duty which he or she carries out in the course of his or her professional duties.

any medical or dental practitioner shall not normally reject treatment to a patient, unless for good reason if the medical or dental practitioner thinks it inappropriate to provide his or her professional services to a specific patient or if a patient has a condition that is not within the area of expertise of the medical or dental practitioner, to reject care, and refer them other a medical or dental practitioners.

#### 6.10. Sindh Health-Care Commission (SHCC) Act 2013

Sindh Health-Care Commission (SHCC) Act 2013 was passed by the Sindh assembly for to register and regulate private hospitals, maternity homes, dental clinics, laboratories and homoeopathic clinics, the main agenda of this act is a reduce quacks (medical practice without certificate of nursing council, Pakistan Medical Dental Council and Council for *Tibbs* and Homeopathy) and promote to health care surveillance. Similarly, it shall be applying on health-care establishment means that, private or public clinicians, non-profit agencies, charity clinics, trusts hospitals, semi-government and voluntary health-care organizations. Moreover, act emphasized to health establishment have been must license for practice. And other side, act are focus to ethical consideration towards health care systems, like a medical negligence (if any patient were dies or

injury by the lack of surveillance or irrational prescription for vested interest) (Provincial Assembly of Sindh).

#### 6.11. Misuse of Antibiotics is Injustice towards Future Generation

Safety and care to future generations is a fundamental bioethical instrument. Our present decisions policies and actions are questionable for coming generation. The antimicrobial resistance is not only associated with current but it should be hug risk for future generation. Doctor from Khairpur civil hospital said in pre antibiotic era many people died by the reason of infectious diseases and I think post antibiotic era is very near us. Moreover, he said any drug not developed in short time it developed at least around twenty years. The big example of it is treatment of covid19 pandemic. Similarly, he said present population must be control to misuse of antibiotics and antibacterial food productions.

#### 6.12. Misuse of Antibiotics in Veterinary and Agriculture

Third of the world's antibiotic use has been for farmed animal's poultry and agricultural production. To be used for animal production, medication or prophylactic and antibiotic prescribing to livestock helps promote antimicrobial resistance globally said veterinary Dr Assad Ail. The use of antimicrobials for something other than direct infection control must now be considered wrong (unethical), if the preferred agents are absent from the human body. When bacteria establish resistance inside a food animal, resistance genes may spread throughout most of the farm, colonize certain animals and survive in the environment. Other private veterinary practitioner expressed the majority antibiotic used for livestock sector and agriculture becomes expected towards raising productivity or preventing infection, rather than direct infection treatment and this is clearly generating ethical issues. There are poor countries so as to livestock workers should be using antimicrobials, because behind the misuse of antibiotics in farming have economic reasons.

In Pakistan or Kumb consumption of antibiotic have a big intervention government, in many countries government are ban on antibiotics consumptions in food product animals like a Denmark

and the Netherlands (Chandler L. D., 2001). Another major concern is the beneficial usage antibacterial drugs across veterinary medicine. Like humans, animal care raises similar ethical obligations, but also with the further burden of managing animal health against the lasting effects of antimicrobial resistance towards human beings. He is veterinary doctor and he practice in both human and animal hospital and also he done his DVM degree by Sindh Agriculture University. That in Kumb antibiotic use is alarmingly high both in humans and animals. Approximately 90pc of upper respiratory infections (URTIs) are viral and self-resolving. Approximately 70pc to 90pc of patients for viral URTIs are prescribed antibiotics unnecessarily that are mostly self-limiting. Resistant infections due to these 'super bugs' are causing thousands of deaths and hospitalizations each year. Furthermore, he expresses Almost 70pc of antibiotics are sold without prescription. On the other hand, choices of medicine are decreasing. Here people advise each other on the kind of medicines they should use. Antibiotics are also used in the agriculture sector, animal and poultry sector which are ultimately consumed by humans.

Another respondent Dr. Nasir Ahmed said the major key ethical issue arises with the usage of Celestin antibiotic for livestock. Celestin has been used to treat for different animals for gram-negative bacilli due to disorder of digestive system. Due to its side effects, the use of colitis in human was limited to current usage and preoperative bowel sterilization. But colitis has recently become a last-line antibacterial agent in human medicine for treating to bacterial infections that produce carbapenemase. Many heavy antibiotics used for the animals and agriculture growth productions like an Erythromycin and Enrofloxacin treat for infection prevention in poultry.

Antibiotics	Class	For purpose
Virginiamycin	Streptogramins	Growth promoter for poultry (broiler)
Tetracycline	Tetracycline	For Growth and prevention of multiple diseases in livestock and poultry
Enrofloxacin	Droquinolone	Prevention and treatment of respiratory infections in poultry and bovine animals
Neomycin	Aminoglycoside	Poultry Growth Promoter
Lincomycin	Lincosamide	Poultry growth promoters
Bambermycin	Phosphoglycolipids	Promoter of poultry and cattle development
Zincbacitracin	Polypeptides	Production promoters for meat as well as poultry, preventing infection in livestock
Colistin	Cyclopolypeptide	using primarily for poultry and occasionally for cattle as growth promoter

Table 2: Table of antibiotics which are commonly used for a livestock and agriculture

### 6.13. Government Responsible Towards Overuse and Misuse of Antibiotics

The government is responsible for every societal dilemma and it is duty to facilitate to community. Pakistan is capitalist country here communal institution are not functioning. In Pakistan's health institution these things are common, Illegal appointment, corruption, lack of clinical equipment, less medical skills, irresponsible doctors, uncertified medical stores and laboratories, government checking and inappropriate distribution of drug nonstandard pharmaceutical companies are a part of government. Dr Majid is MBBS doctor in Taluka hospital Kot-Diji he said in government hospital are only Panadol and positioncollop syrup. And 99% government practitioners practice in private clinics and government laboratories are not open for common citizen that is only for source able and special. Other Dr.Javeed said politician's bureaucrats and business class gave lichen and also promote to unqualified drug companies furthermore he said in Kumb government must be arrange community based awareness programs.

#### 6.14. Over-the-counter Use of Antibiotics

This is another important ethical and legal dilemma, over-the-counter sell of antibiotics in Kumb are very common. People purchased antibiotics here very minor infections such as viral infections and antibiotics are not effective against it said community member. Easy access to drug stores and lack of time also financial problems promote to the over-the-counter consumptions of antibiotics. Other hand governmental and health administrative bodies are responsibility to take steps and emphasize to drug distributors to not sell antibiotics without well-trained doctor's prescriptions. Shaft Ail is working in drug regulatory authority, (DRA) he said over-the-counter sell of drug is illegal and against medical ethics and it is our duty as a drug regulatory authority official we legally force to drug distributors and put on fines.

<b>Antibiotics use for over-the-counter</b>	<b>Reasons behind the use of antibiotics over-the-counter</b>
Tetracycline & Clarithromycin	Lack of time and to save time
Ceftriaxone & Levofloxacin	Easily access to medical stores
Metronidazole & Albendazol	lack of financial resources
Secnidazol&Cloxacillin	High costs of visits to doctor
Azithromycin & Cefadroxil	Low cost of purchasing drugs
Ciprofloxacin & Erithromycin	Lack of awareness
Amoxicillin & (cotrimoxazole	Suggestions by friends, family and wise person

Table 3: Over-the-counter consumption of antibiotics and their socio-cultural reasons

<b>No</b>	<b>For these symptoms people over-the-counter purchased antibiotics</b>
1	Cold
2	Flu
3	Pain
4	Fever
5	Stomach ache
6	Sore throat
7	Cough
8	Diarrhea

Table-4: Symptoms for people purchased over-the-counter antibiotics

### 6.15. Antimicrobial Stewardship Programs

Antibiotic stewardship programs (ASPs) are at the foundation of initiatives aimed at fighting overuse and misuse of antibiotic and trying to promote proper control of antimicrobial resistance and infectious diseases at health institutions across the globe. This project is working around the world with the coordination of World Health Organizations. “But unfortunately it is started in Pakistan very

late” In Pakistan, the Medical Microbiology and Infectious Diseases Society began steps to build regional hospital-based Antimicrobial stewardship programs in 2014(Khezar Hayat M. R., 2014). Antimicrobial Stewardship Programs are main agenda on rationalizing antibiotic use, improving the quality of care, reducing the rate of Antimicrobial resistance, as well as reducing the medical costs concerned with the implementation of antimicrobial resistance. But unfortunately in Pakistan (Kumb) is implementation on challenging risks. Similarly, medical practitioners have an inappropriate knowledge and understanding about antimicrobial stewardship programs, rational use and antimicrobial resistance. In field, study reported knowledge about the antimicrobial stewardship programs on the community based is zero. Quacks said I listened first time this project, edged MBBS doctors have very little knowledge academic professors have an almost knowledge and somehow new MBBS practitioners have information about Antimicrobial Stewardship programs. When The Pakistan Medical Microbiology and Infectious Diseases Society (MMIDSP) introduced first time Antibiotic Stewardship Program Initiative in Pakistan, in March 2014 and initiated several Antimicrobial stewardship programs activities such as a talks, workshops, weekly seminars ASP Rounds' policies and strategies launch and awareness campaigns. Similarly aim of the ASPs to change behavior of perceptions.

- ❖ Agenda of antimicrobial stewardship programs (ASPs)
- The assessment of antibiotic use;
- Encouraging behavioral improvements in the prescribing and distributing of antibiotics;
- To improve patient outcomes and quality of care;
- To save on the excessive costs of health care;
- prolonging the service life of existing antibiotics;
- To reduce the adverse economic effects of AMR;

- To develop the capacity of health care practitioners to use antibiotics rationally in guiding principles.
- Make strategies and policies for rational use of antibiotics;
- Aware and educate to population by antimicrobial resistance;
- Arrange programs at community, hospitals and academic based;
- Reducing the further growth, selection and spread of AMR;

## 7. Chapter

### Summary, Conclusion and Suggestion

#### 7.1. Summary

The main focus of this research is to evaluate the overuse and misuse of antibiotics. Similarly, to identify issues of bioethics or medical ethics in the use of antibiotics by local private doctors in their medical/clinical practice and socioeconomic, legal and community level implications of the local private health sector in small town district Khairpur Mir's.

The study has been divided into several chapters and every chapter has its own importance. Additionally, the researcher used the mixed paradigm of research methodology like a qualitative and quantitative for analysis and conducting field work and the researcher lived for six months in the field. Moreover, the study was conducted by the doctors of the clinics, staff of medical stores, patients/general community members, and medical reps of the pharmaceutical companies supplying medicines to these clinics, government officials of the drug department and medical college professors.

Study analyzed, the misuse and overuse of antibiotics became excessive and the mass population used it for seasonal diseases. No awareness and seminars were conducted at the community level against the misuse of antibiotics. The majority of the community has no idea of the side effects of the misuse of antibiotics and people do not develop resentment against it. The majority of people visit quacks instead of professionals and here in the very rare case people go to government hospitals. Moreover, the doctor and patients' relationship are not friendly and the majority of doctors prescribe medicine before a test.

Furthermore, not only doctors are accountable for the misuse of antibiotics but also pharmaceutical companies, health management, civil society and policy makers are questionable, because they do not evaluate local drugstores and clinicians. Such as many clinics are uncertified and they have no proper medical equipment. People take antibiotics over-the-counter although for this practice drug distributors are also accountable.



Moreover, many ethical flaws are in medical practice, people have no trust upon doctors and they also have fear from them. Doctor's and patient relationship is like a client and customer. Practitioners prescribed antibiotics for the vested interest. Their irresponsible behavior and injustice maybe kill too many future generations, because medical scientists gave an interpretation and warning that post-antibiotic era is a very close. Furthermore, third of the world's antibiotic use has been for poultry and livestock production of farmed animals. The large number of antibiotics used in livestock and agriculture are meant to improve production or avoid infection. The use of antibiotics for anything other than direct infection prevention must now be assumed completely wrong (unethical). Similarly, Pakistani courts have taken a strong stance on the issue of unnecessary prescribing antibiotics. In a case cited as 2016 CLC 95 the honorable Lahore High Court ruled considering the various side effects of antibiotics, but it is not implemented in anywhere.

Similarly, The Code of Practice Ethics for Medical and Dental Doctors points out the code of ethics that medical practitioners must obey in their training. Section 9 of the same Code calls for the proper use of pharmaceutical drugs and urges physicians to never forget that the lives and safety of patients depends on their treatment and professionalism. But this cod of ethic not implemented in health institutions of Khairpur.

Very importantly, study observed that here clinical ethics and medical ethics challenged by the practitioners and drugstores, doctors did not care and sincere with patients they also worked only for vested interest, with the respect of medical ethics doctors are a responsible for every moment of patients. The big example of that is an unnecessary prescription, high rate of private clinics, biggest investment on medical private academics and at everywhere drugstores. The Sindh Health-Care Commission (SHCC) Act 2013 was passed with the coordination of Sindh assembly, aim was this act to reduce and close unregistered clinics, laboratories and drugstores, but it is not implemented in really until. The study observed, here not conducted any public awareness and seminars related to the usage of antibiotics.

## 7.2. Conclusion:

This study examined and stated important issue related to the social determinant of health, as a use of antibiotics as bioethical and public health problem. Focus of this study is bioethics and

medical ethic on the usage of antibiotic. Antibiotic over usage and misuse is major problem in our society. Doctor. Without diagnosing prescribe antibiotic medicine. That is harmful for the current and upcoming generations and that put various side effects on the health. Bioethics and medical ethic principles do not apply during giving treatment to the patient, even much legislation developed for that. Such as a code of ethics passed by Pakistan medical dental council, strategies of Pakistan action Plan about inappropriate usage of antibiotics but they not applied anywhere. Similarly, Pakistani courts took a firm stand on the question of antibiotics being prescribed excessively. The honorable Lahore High Court found that the various side effects of antibiotics are taken into account in a case cited as 2016 CLC 95, but it is not applied anywhere, and it is also not implemented in real sense. Many people go to quacks and unskilled practitioners for the lack of economic resources and medical knowledge. Quacks do have not certified from any medical education. Medicine store shops provide medicine without any prescription of medical practitioner. In this research mix methodology of research is used. Researcher has conducted interviews from the professors of medical college, medical practitioner, medicine shop keepers, quacks and general community. The massive usage of antibiotic has been for poultry and livestock production of farmed animals, for improve production and to prevent infectious diseases. And antibiotic resistance almost transformed from them in human body. Majority of practitioners have a no idea that misuse of antibiotics is a unethical and harmful for human organism, MBBS doctors put blame on quacks and quacks gave blame on MBBS doctors. For the economic reasons people opened clinics in village setting and there practiced also veterinary doctors, dispensers, unskilled and uncertified practitioners, and there have a no laboratory.

### 7.3. Suggestion

Suggestion's first of all awareness of antibiotic should spread for the public. As every people know about antibiotic usage and misuse. Doctor must obligate implementation of bioethics and medical ethics. Government must impose law according to usage and misuse of antibiotic. Doctor and patient relation should be friendly as patient can take suggestion clearly. Diagnosing facility is short in the hospitals there is scarcity of necessary equipment's as they can properly examine patient. Medical stores run illegal. Government must scrutinize that issue. These

medical stores have to become obligatory. They do not give any medicine to the common people without prescriptions of any certified medical practitioners.

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## Interview Guide

The following questions about “overuse and misuse of antibiotics as a bioethical and public health dilemma” was also posed in order to evaluate inputs in the form of results from a sample set that is representative and indicative of the overall population, in order to obtain cogent findings from the field, including from interviews and focus group discussions.

This research is designed to extrapolate and evaluate the answer to the following queries

- **General Questions**

What is your name?

What is your socio-economic status?

What is your education status?

What is an antibiotic?

What is usage of antibiotics?

For which diseases people took antibiotics?

What is proper usage of antibiotics?

What is overuse and misuse of antibiotics?

What is medical ethics or clinical ethics?

Do you know overuse or misuse of antibiotics is a medical ethical issue?

What is ethical consideration towards misuse of antibiotics?

Which diseases are caused by the overuse or misuse of antibiotics?

- **Questions by Clinicians**

In witch condition you prescribed the antibiotics?

Do you prescribed antibiotics for seasonal diseases?

Are people insisting you to prescribed antibiotics?

Why patients forced you for prescription of antibiotics?

Do you know overuse and misuse of antibiotics is a clinical ethics issue?

Do you diagnosed to disease before treatment?

Do you know overuse and misuse of antibiotics lead to many health issue like a antibiotic resistance?

During the medical degree, any subject offered you related to medical ethics?

What is your opinion about overuse and misuse of antibiotics?

- **Questions by Drug Distributors (Medical Stores)**

Are you selling antibiotics without prescription?

For witch symptoms you suggest antibiotics to people?

Do you know that without prescription sell of drugs is against medical ethics and it is an illegal?

Do you have a degree of D pharmacy or any other relevant?

Your drug store is a certified by the drug regularity authorities?

How many people purchased antibiotics from you on daily basis and for witch diseases?

Drug regularity authorities give accountability, when you without prescription sell antibiotics?

Do you know that misuse of any type of drug lead to health issues?

- **Questions by Patients and Community**

For which symptoms you took antibiotics?

Do you know antibiotics is a cause of antibiotic resistance?

Doctor's attitude is positive with you?

Doctors told you about side effects of the prescription/antibiotics?

Any doctor told you, I prescribed you antibiotics?

You resist against doctors that do not prescribe antibiotics?

Why you purchased antibiotics without prescription?

Why you came to quacks instead of professionals?

Why you do not visit a governmental hospital?

Who suggests you to take antibiotics?

- **Questions by Health Managements**

Do you know overuse and misuse of antibiotics is a current medical issue globally?

What are your policies about reduction of irregular use of antibiotics?

How many awareness programs have you arranged for misuse of antibiotics?

Do you evaluate to drug distributors?

Who is responsible for the increasing rate of antibacterial resistance?

Do you arrange community level seminars against overuse and misuse of antibiotics?

Do you have any projects or strategies to decrease the use of antibiotics?

How many awareness programs have been arranged by the civil society and health officials for reduction of irregular use of antibiotics?



How much quacks and uncertified drug distributors are in Khairpur Mir's?