SUMMER INTERNSHIP REPORT

(April 22nd to May 23rd, 2024)

"Knowledge, Attitude, and Practices of Antibiotics and Antibiotic Resistance among employees aged between 22-60 years at IQVIA, Delhi"

A Report Submitted by

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PG/23/127

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New Delhi

ACKNOWLEDGEMENT

A Summer Internship is a an learning opportunity for self-development and progress. I am fortunate to have been given this opportunity to learn and grow in the Public Health Sector.

I want to express my and appreciation to all those who have showed the path of light during my internship journey. Firstly, I am immensely grateful to **Kavya Sharma** (Head Disease Management & Health Systems, IQVIA) and Iti Kaushik (Consultant – DM& HS) for giving me this chance to benefit from their advice, knowledge, and steadfast support during the whole research process. This internship has been greatly influenced by their wise counsel, perceptive criticism, and support. I would like to express my sincere gratitude to Lakshya Sharma for his insightful comments and helpful recommendations that have aided me during my time at IQVIA.

Secondly, I like to express my gratitude to **Dr Pankaj Talreja** (Summer Internship, Mentor) to share their time, knowledge, and experiences has contributed significantly to the quality and depth of the study.

I am thankful for the moral support I have received from my parents, friends, and seniors. It would never have been feasible to put together our summer internship without their presence during both the good and the bad. Being surrounded by all of you in my life is a huge blessing.

ABBREVIATIONS

AMR: Antimicrobial Resistance

IQVIA: IQVIA Inc. (formerly Quintiles and IMS Health)

KAP: Knowledge, Attitude, and Practices

CAPI: Computer-Assisted Personal Interviewing

WHO: World Health Organization

OTC: Over-The-Counter

OBSERVATIONAL LEARNING

IQVIA is a global leader in ensuring the privacy and security of patient information. The company employs a broad range of privacy-focused technologies and protocols to safeguard personal health data while utilizing large-scale analytics to support healthcare stakeholders. This approach allows for the identification of disease trends and the development of targeted treatment plans, driving better health outcomes. Through its insights and operational support, IQVIA assists pharmaceutical, biotechnology, and medical device companies, as well as government bodies, researchers, payers, and other healthcare stakeholders, in developing a deeper understanding of diseases, patient behaviours, and scientific advancements. This collaboration facilitates progress toward innovative treatments and cures.

The company's mission centres on uniting data science with human ingenuity to create advanced healthcare solutions. By viewing every challenge as a chance to make a positive difference, IQVIA seeks to support customers, patients, and healthcare communities worldwide. Their goal is to inspire meaningful change and contribute to a healthier future for all.

IQVIA is driven by three key principles:

- Creativity, encouraging fresh perspectives and problem-solving approaches.
- Teamwork, fostering a spirit of collaboration across its global workforce.
- Innovation, promoting the use of advanced technologies and novel strategies to enhance healthcare solutions.

As the leading provider of healthcare research, consulting, and health intelligence, IQVIA has over six decades of experience. It operates in more than 100 countries, supporting over 5,000 healthcare clients on six continents. The company’s services benefit a diverse range of stakeholders, including policymakers, donor agencies, government organizations, researchers, healthcare providers, and financial entities. IQVIA’s vast network facilitates access to global health insights and supports informed decision-making.

IQVIA’s data analytics infrastructure is one of the largest in the healthcare sector. Drawing data from more than 100,000 suppliers and managing over 55 billion healthcare transactions annually, the company offers critical insights that drive strategic decision-making. By bridging gaps across the healthcare landscape, IQVIA helps clients enhance patient outcomes and optimize operational efficiency.

With a track record of supporting over 200 major global projects, IQVIA’s experienced teams provide specialized expertise for healthcare and pharmaceutical initiatives. The company’s collaborative approach allows clients to tackle complex healthcare challenges and make evidence-based decisions. Through its comprehensive support, IQVIA helps healthcare stakeholders meet regulatory standards, address quality and safety requirements, and achieve impactful outcomes.

A core element of IQVIA’s commitment is its ongoing evaluation of healthcare services and products. The company focuses on safety, benefit-risk analysis, treatment efficacy, quality of care, and healthcare value. By providing timely, data-driven insights, IQVIA empowers

healthcare organizations to maintain regulatory compliance, improve patient safety, and enhance the quality of care.

IQVIA's collaborations extend beyond traditional healthcare providers. The company partners with donor organizations, policymakers, financial institutions, and research entities to address global healthcare challenges. Through these partnerships, IQVIA helps develop effective, evidence-based healthcare strategies that are sustainable and impactful. The company's comprehensive support covers areas like regulatory compliance, clinical development, and post-market safety monitoring.

Innovation remains a central tenet of IQVIA's strategy. The company invests in next-generation technologies, including artificial intelligence (AI), machine learning (ML), and predictive analytics. These technologies enable IQVIA to offer faster, more precise insights to healthcare stakeholders. Looking to the future, IQVIA aims to strengthen its privacy technologies, broaden its analytics capabilities, and support the development of next-generation therapies. By remaining at the forefront of technological advancement, IQVIA ensures its clients are prepared to meet emerging healthcare challenges.

IQVIA's commitment to advancing healthcare is reflected in its mission to blend creativity, teamwork, and innovation. The company's unique data-driven approach has transformed healthcare processes, leading to improved patient care, regulatory compliance, and better operational efficiency. As a global leader, IQVIA plays a vital role in supporting healthcare stakeholders, driving change, and unlocking new opportunities for health advancements around the world.

DATA COLLECTION

Within the disease management team, both primary and secondary research methods are employed to gather data for projects. The data collection process encompasses qualitative and quantitative approaches. Quantitative data is acquired using computer-assisted personal interviewing (CAPI) tools like Kobo, and subsequent analysis is conducted utilizing software such as Microsoft Excel, STATA, and SPSS. On the other hand, qualitative data is obtained through focused group discussions and in-depth interviews, with analysis being performed using Microsoft Excel.

OUR LEARNING

During my internship at IQVIA Consulting, I had the opportunity to work in the disease management team on multiple projects-

- **Research & Data Analysis:** Conducted in-depth secondary research and analyzed datasets using Excel to support project needs.
- **Project Support & Reporting:** Assisted in creating reports and presentations using online platforms for clear communication.
- **Survey Development & Implementation:** Contributed to developing surveys using Kobo Toolbox to gather valuable data.

CONCLUSIVE LEARNINGS

- Kobo tool – development of tools for data collection
- Data Analysis using Microsoft Excel
- Secondary Research
- Qualitative Data Analysis
- Professional Presentation
- Report Writing
- Coordination among team members for the timely achievement of goals and discussions
- Communication skills
- Exposure to the corporate world
- Time management
- Handling work pressure
- Attending given deadlines
- Making new connections with our colleagues
- Engaging with people from varied areas of experience and expertise

PROJECT REPORT

"Knowledge, Attitude, and Practices of Antibiotics and Antibiotic Resistance among employees aged between 22-60 years at IQVIA, Delhi"

INTRODUCTION

Background

Antibiotics and Antimicrobial Resistance (AMR): Antibiotics revolutionized medicine by significantly reducing mortality and morbidity from bacterial infections. The poor consumption of antibiotics have accelerated the issue of antimicrobial resistance (AMR), posing a grave threat to public health worldwide. AMR occurs when bacteria, viruses, parasites, and fungi drive mechanisms to withstand the drugs engineered to eliminate them, rendering infections difficult to treat and ascending the risk of higher level illness, prolonged hospital stays, and fatality.

Worldwide Scenario of AMR: AMR is a global crisis affecting countries across continents. According to the WHO, AMR poses a danger to shift us to a pre-antibiotic era where simple infections could become life-threatening once again. Drug-resistant diseases cause at least 700,000 fatalities worldwide each year; if nothing is done, this figure might increase to 10 million deaths per year by 2050. AMR has a significant economic impact; estimations indicate that by 2050, global economic output might have declined by a total of USD 100 trillion.

Impact on India: India faces significant challenges regarding AMR due to factors such as high population density, inadequate sanitation and healthcare infrastructure, rampant self-medication practices, and widespread use of antibiotics in agriculture. Antibiotic-resistant infections contribute to increased healthcare costs, prolonged hospitalizations, and higher mortality rates. In India, AMR is a growing concern, exacerbated by limited availability of antibiotics over-the-counter without a prescription, access to clean water and sanitation, and zero infection prevention and control measures.

AMR in Delhi: Delhi, as India's capital and one of its most densely populated cities, faces specific challenges related to AMR. The city's healthcare facilities are burdened with cases of drug-resistant infections, complicating treatment and management. Surveillance data indicate rising trends in AMR among various pathogens, including those responsible for common illnesses such bloodstream, lung, and urinary tract infections. The high population density and mobility within the city contribute to the rapid spread of resistant bacteria.

Morbidity Rate: The morbidity rate associated with AMR in Delhi reflects the severity of the problem. Increasing rates of treatment failure and prolonged illnesses due to antibiotic-resistant illnesses raise death rates, lengthen hospital stays, and increase healthcare utilization. The financial strain on people and healthcare systems is significant, impacting both quality of life and productivity.

RATIONALE OF THE STUDY

RESEARCH QUESTIONS

Knowledge About Antibiotics and Resistance

1. What are antibiotics primarily used for?
2. Can antibiotics kill viruses?
3. Where should antibiotics be stored?
4. How should antibiotics be taken?
5. Are you aware of the potential side effects of antibiotics?
6. What happens if entire antibiotics course is not finished prescribed to you?
7. Do you believe misuse of antibiotics contributes to antibiotic resistance?
8. Do you believe antibiotic resistance is a serious problem?
9. Should antibiotics be used only when prescribed by a healthcare professional?
10. How important is it to complete the full course of antibiotics?

Behaviour and Practices Related to Antibiotics

1. Would you be willing to use alternative treatments instead of antibiotics if recommended by a healthcare professional?
2. Do you think it's okay to ask your doctor for antibiotics if you have a cold?
3. Have you ever taken antibiotics without a prescription?
4. Have you ever pressured a healthcare professional to prescribe antibiotics when they were not deemed necessary?
5. Do you usually finish the entire course of antibiotics prescribed to you?

Hygiene Practices and Preventative Measures

1. When you feel unwell, what is your first instinct?
2. How often do you wash your hands to prevent infections?
3. Do you always cover your mouth and nose when coughing or sneezing?

Education and Seeking Medical Advice

1. Have you ever received education about antibiotics and antibiotic resistance?
2. How often do you seek medical advice before taking antibiotics?

Behaviour and Practices Related to Antibiotics

1. 21.Would you be willing to use alternative treatments instead of antibiotics if recommended by a healthcare professional?
2. 22.Do you think it's okay to ask your doctor for antibiotics if you have a cold?
3. Have you ever taken antibiotics without a prescription?
4. Have you ever pressured a healthcare professional to prescribe antibiotics when they were not deemed necessary?
5. Do you usually finish the entire course of antibiotics prescribed to you?

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Education and Seeking Medical Advice

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Objectives

- **Primary objective:** To study the knowledge, attitude, and practices of corporate employees regarding antibiotics and antibiotic resistance.
- To investigate how employees' understanding of antibiotics relates to their consciousness of possible adverse effects, abuse, and the dangers of antibiotic resistance.
- To assess the impact of personal behaviour (such as completing the full course of antibiotics, self-medication, and pressure on healthcare professionals) on the effectiveness of antibiotic usage and the spread of resistance.
- To draw inferences on the level of education and awareness required to mitigate the antibiotics misuse in order to eliminate the rise of AMR among employees.

METHODOLOGY

Design and Environment of the study

From June 2023 to July 2023, a cross-sectional study was carried out via an online survey. Assessing employees' knowledge, attitudes, and actions regarding antibiotics and antibiotic resistance in a corporate office context was the aim of the study. Employees at Corporate Edge, which is housed in the Hindustan Times Building on K.G. Marg in New Delhi, were given the survey.

Study Population

The study population consisted of employees working at Corporate Edge, Hindustan Times Building, New Delhi. All participants were employed in a traditional office environment, where they worked full-time from the office.

Inclusion Criteria

The study inclusion criteria's were as follows:

- Employees serving in the corporate sector, specifically full-time employees working from the office.
- Employees working in New Delhi, India.
- Employees who were willing to provide consent for participation in the study.

Exclusion Criteria

The exclusion criteria were:

- Freelancers and part-time workers were excluded from the study, as the focus was on full-time employees working in a traditional office environment.

Sample Size

The research sample consisted of 51 employees working at Corporate Edge. All 51 responses were collected from employees working in a traditional office environment. The sample was representative of employees engaged in full-time office-based work.

Sampling Technique

Purposive sampling was employed as the sampling technique to select employees from Corporate Edge who were working full-time in a traditional office setup. This method ensured that the study included participants who were directly involved in the office environment, which is critical to understanding their knowledge, attitude, and practices about AMR and antibiotic resistance. Purposive sampling allowed for a targeted approach, capturing the experiences and behaviours of employees who were familiar with the topic of antibiotic use in a corporate setting.

Data Collection

To gather data for this study, a self-designed questionnaire was developed using Kobo Toolbox, an online survey platform, specifically tailored to the target population and research objectives. Designing the questionnaire allowed for a focused approach to measure the knowledge, attitudes, and practices related to antibiotics and antibiotic resistance.

The semi-structured questionnaire was composed of four main components and was approved by the research team. The first part focused on demographic characteristics and general background information. The subsequent sections included questions related to participants' knowledge of antibiotics, attitudes towards antibiotic use, and practices such as self-medication, misuse, and awareness of antibiotic resistance.

The questionnaire, which took about 10 to 12 minutes to complete, was given to employees who satisfied the inclusion criteria after participants were briefed about the study's objectives and their consent was acquired.

Ethical Considerations

All data collected were kept confidential and were used solely for the purpose of this research. The questionnaire did not include any personal identifiers to maintain privacy. The research adhered to ethical guidelines, ensuring informed consent, voluntary participation, and participant confidentiality throughout the study.

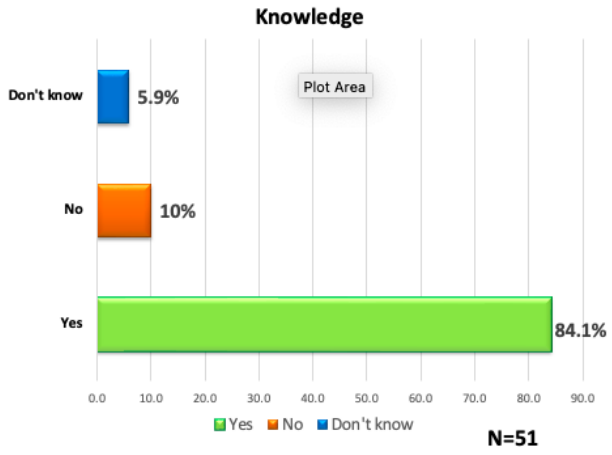
Data Analysis

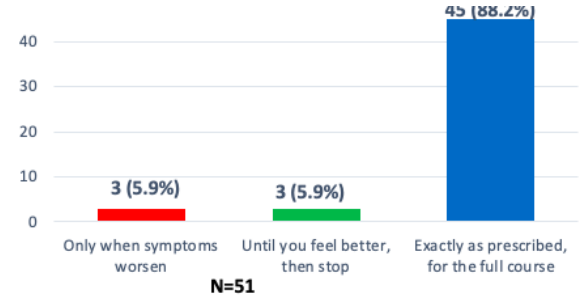
The quantitative data collected via Kobo Toolbox were cleaned and analysed using Microsoft Excel. Dummy tables were created to organize and analyze the responses in alignment with the objectives of the study, focusing on key indicators related to knowledge, attitude, and practices concerning antibiotics and antibiotic resistance. The data were systematically coded and categorized to draw meaningful conclusions and identify trends related to antibiotic use, resistance awareness, and practices.

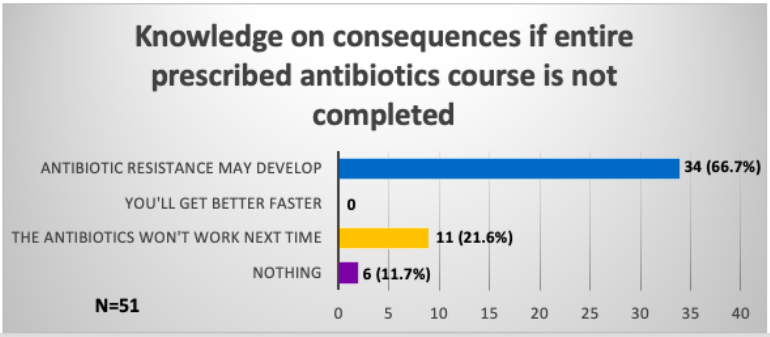
RESULT (3/3)

Knowledge about Antibiotics and AMR (1/3)

- High Awareness: A majority of respondents (84.1%) possess basic knowledge of antibiotics and AMR. This indicates a positive trend in public awareness regarding antibiotic resistance.
- Misconception about Dosage: A concerning 5.9% of respondents believe in self-adjusting antibiotic dosages, which can contribute to the development of antibiotic resistance.
- Incomplete Course Awareness: While the majority (66.7%) are aware of the risks associated with incomplete antibiotic courses, a significant portion (21.6%) still harbour misconceptions about its impact on treatment efficacy.





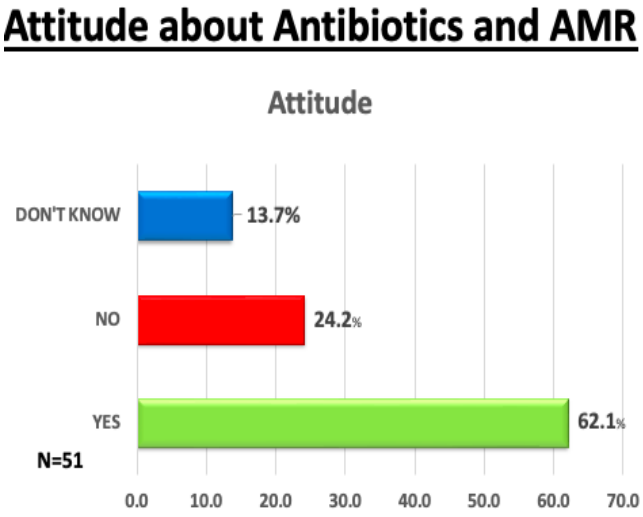


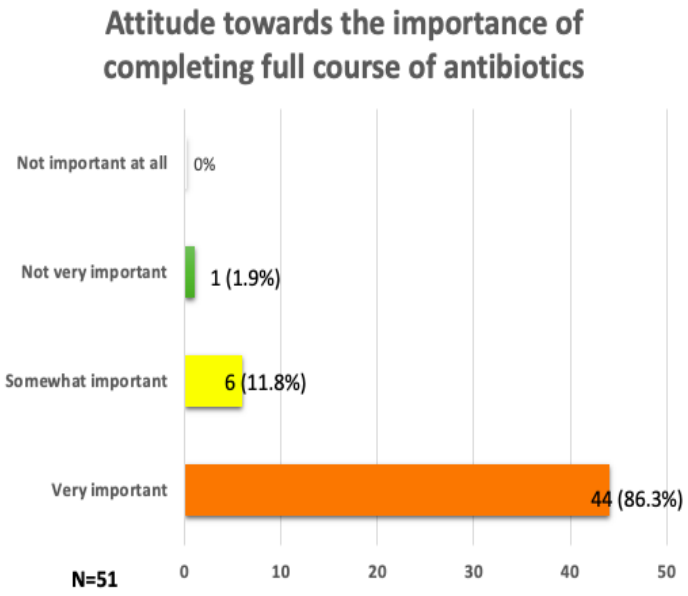
Recommendations

- Targeted Education Campaigns: Implement targeted educational campaigns to address specific knowledge gaps, particularly regarding the correct dosage and duration of antibiotic treatment.
- Awareness of Healthcare Providers: Motivate medical professionals to proactively inform patients on the appropriate use of antibiotics and the possible repercussions of abuse.
- Public Health Initiatives: Promote public health initiatives that emphasize the importance of completing full courses of antibiotics as prescribed and avoiding unnecessary antibiotic use.

Attitude towards the Importance of Completing Full Course of Antibiotics (2/3)

- High Importance: A significant majority (86.3%) of respondents recognize the urgency of full course completion of antibiotics. This indicates a strong understanding of the potential consequences of non-adherence.
- Minority with Lower Importance: A small percentage (13.7%) either don't know or believe it's not very important to complete the full course. This highlights a need for targeted education to address these misconceptions.





Recommendations

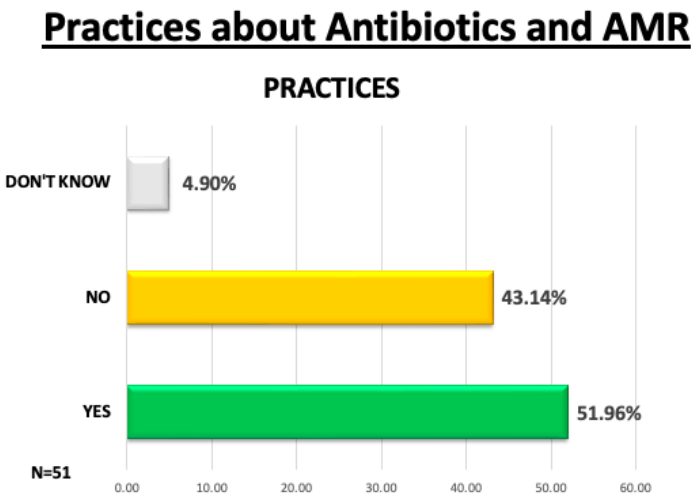
- Reinforce Positive Attitudes: Keep supporting public health initiatives that stress the value of finishing entire antibiotic treatments.
- Address Misconceptions: Target educational efforts towards those who underestimate the significance of completing the full course.
- Healthcare Provider Role: Encourage healthcare providers to proactively address patient concerns and misconceptions about antibiotic treatment duration.

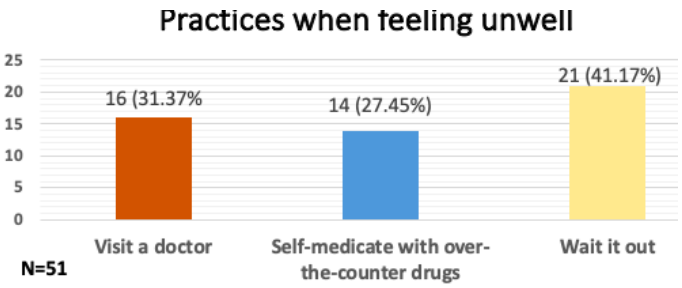
Practices when Feeling Unwell (3/3)

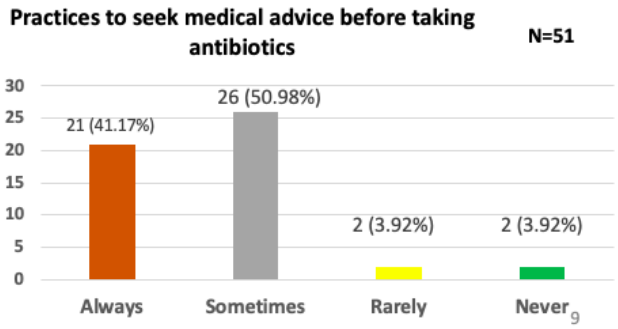
- Self-Medication: A significant proportion of respondents (41.17%) tend to self-medicate with over-the-counter drugs when feeling unwell. This practice can lead to inappropriate antibiotic use and contribute to antibiotic resistance.
- Doctor Consultation: While a majority (41.17%) visit a doctor, a notable number (31.37%) opt to wait it out, which can delay appropriate treatment and potentially worsen health outcomes.

Practices to Seek Medical Advice Before Taking Antibiotics

- Inconsistency: There is a significant variation in practices regarding seeking medical advice before taking antibiotics. While 50.98% always seek advice, a concerning 3.92% never do, indicating a need for improved awareness and education.







Recommendations

- Promote Responsible Self-Medication: Encourage responsible self-medication practices, emphasizing the importance of seeking professional advice, especially for serious illnesses.
- Educate on Early Medical Consultation: Promote the benefits of early medical consultation to ensure timely and appropriate diagnosis and treatment.
- Highlight the Risks of Self-Medication: Raise awareness about the potential risks of self-medication, including the development of antibiotic resistance and adverse drug reactions.
- Strengthen Public Health Campaigns: Continue to implement public health campaigns that promote the responsible use of antibiotics and the importance of seeking medical advice.

DISCUSSION

Recognizing the significance of antibiotic resistance (AMR) and the proper use of antibiotics is essential for public health. The growing awareness among the public is a positive trend, as indicated by the high percentage (84.1%) of respondents who demonstrate basic knowledge of antibiotics and AMR. This reflects increasing efforts in public health campaigns and healthcare provider education, although there are still notable areas for improvement.

However, misconceptions about the proper dosage and completing the full course of antibiotics remain prevalent. A concerning 5.9% of respondents reported self-adjusting antibiotic dosages, a practice that contributes to the development of resistance. Furthermore, while a majority of participants (66.7%) understand the risks associated with incomplete antibiotic courses, 21.6% still harbour misconceptions about its impact on treatment efficacy, which underscores the need for continuous education on the importance of adhering to prescribed antibiotic regimens.

Attitude towards Completing the Full Course – A significant majority (86.3%) of respondents acknowledge the necessity of full antibiotics completion. This is a promising indication that the majority of the population recognizes the risks of non-adherence. However, a minority (13.7%) either remain unaware or do not prioritize completing the full course, emphasizing the need for targeted campaigns to address these misconceptions and reinforce the significance of following treatment regimens.

Self-Medication Practices – A significant proportion of respondents (41.17%) reported practicing self-medication with over-the-counter (OTC) drugs, which can lead to inappropriate antibiotic use and further fuel antibiotic resistance. This behaviour, alongside a sizable portion (31.37%) of respondents who choose to wait for illness to resolve without seeking medical attention, highlights the critical need for greater awareness regarding the risks of delaying appropriate treatment and the dangers of self-medication.

Seeking Medical Advice Before Antibiotic Use – There is considerable inconsistency in seeking medical advice before taking antibiotics. While half of the participants (50.98%) always consult a healthcare professional before using antibiotics, a concerning 3.92% never do. This suggests a gap in understanding the necessity of medical consultation for proper antibiotic use and highlights the need for stronger educational initiatives to promote responsible antibiotic use.

CONCLUSION

The findings from this study highlight several key aspects regarding public knowledge, attitudes, and practices surrounding antibiotics and antibiotic resistance (AMR). The majority of participants exhibit a foundational understanding of AMR, yet misconceptions about dosage and completing antibiotic courses remain. The study also reveals troubling self-medication practices and delays in seeking professional medical advice, which contribute to inappropriate antibiotic use.

The high recognition of the necessity of full antibiotics completion is encouraging, but the minority who either don't know or underestimate its importance necessitate focused educational efforts. Additionally, self-medication and the lack of consistent medical consultation before taking antibiotics emphasize the need for stronger public health campaigns to promote responsible antibiotic use.

Promoting a deeper understanding of AMR and improving self-medication practices through targeted education, increased awareness of the risks of incomplete courses, and the importance of professional guidance in antibiotic treatment is essential in combating antibiotic resistance and ensuring better public health outcomes.

LIMITATIONS

1. **Sampling Bias** – The study utilized selecting participants based on specific criteria related to antibiotic use and AMR knowledge under purposive sampling method. As a result, the findings may not be fully representative of the broader population, especially in regions with different healthcare access or cultural practices regarding antibiotics.
2. **Sample Size** – The results' generalizability is restricted by the very small sample size of 80 participants. Greater sample sizes might yield more trustworthy results and aid in improving our comprehension of the connection between antibiotic use-related information, attitudes, and behaviours.
3. **Time Constraints** – The study was conducted within a limited timeframe, which restricted the ability to collect more data or follow up with participants. Extended data collection could have helped gather a more comprehensive understanding of participants' antibiotic practices.
4. **Non-Response and Participation** – A notable non-response rate was observed, and several individuals were reluctant to participate. This could introduce bias, as those who chose not to participate may have different knowledge or practices surrounding antibiotic use compared to those who responded.

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21st June 2024

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Vivek Chaudhary** was associated with **IQVIA Consulting and Information Services India Private Limited ("IQVIA")** on the **Project delivery and business management support** as a part of the curriculum during the period from **22nd April 2024** till **21st June 2024**

This certificate is being issued to recognize successful completion of his internship.

For IQVIA Consulting and Information Services India Pvt. Ltd

VARINDRA
Digitally signed by VARINDRA
Date: 2024.06.21 21:47:41 +05'30'

_____
Varindra B
Director - Human Resources, South Asia

RE: Request for Approval of Internship Topic

VC Vivek Chaudhary
To Dr. Pankaj Talreja

6/10/2024

SYNOPSIS Vivek Chaudhary.docx
22 KB

Hi sir,

PFB the attached synopsis document as requested. Let me know if any changes are required.

Best regards,
Vivek Chaudhary

RE: Request for Approval of Internship Topic

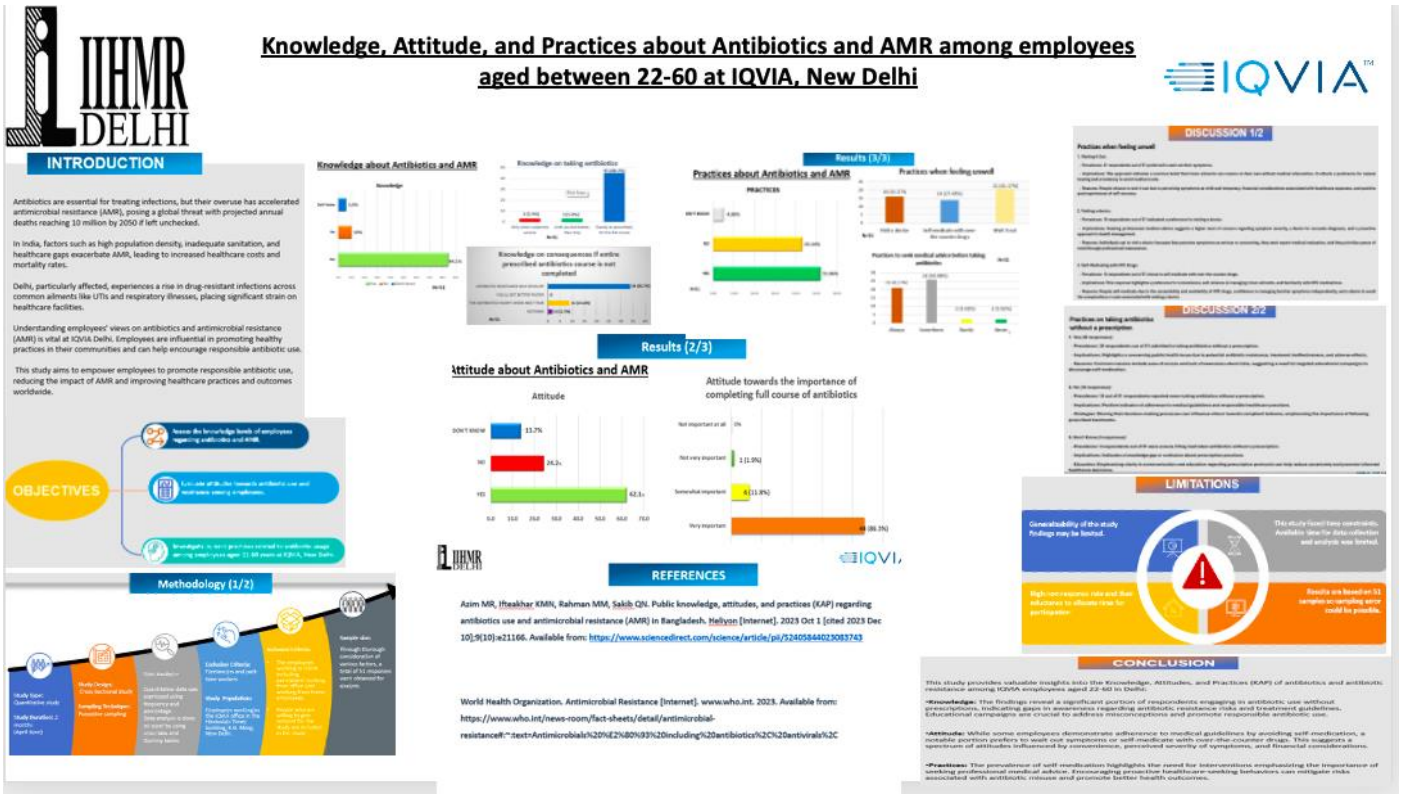
DP Dr. Pankaj Talreja
To Vivek Chaudhary

6/13/2024

Start your reply all with: Will do, thank you. Noted with thanks. Will do, thanks! Feedback

Approved. Kindly proceed with poster presentation.

Best,
Dr. Pankaj Talreja


Knowledge, Attitude, and Practices about Antibiotics and AMR among employees aged between 22-60 at IQVIA, New Delhi
IIHMR DELHI
IQVIA
INTRODUCTION
Antibiotics are essential for treating infections, but their overuse has accelerated antimicrobial resistance (AMR), posing a global threat with projected annual deaths reaching 10 million by 2050 if left unchecked.
In India, factors such as high population density, inadequate sanitation, and healthcare gaps exacerbate AMR, leading to increased healthcare costs and mortality rates.
Delhi, particularly affected, experiences a rise in drug-resistant infections across common ailments like UTIs and respiratory illnesses, placing significant strain on healthcare facilities.
Understanding employees' views on antibiotics and antimicrobial resistance (AMR) is vital at IQVIA Delhi. Employees are influential in promoting healthy practices in their communities and can help encourage responsible antibiotic use.
This study aims to empower employees to promote responsible antibiotic use, reducing the impact of AMR and improving healthcare practices and outcomes worldwide.
OBJECTIVES
Methodology (1/2)
Knowledge about Antibiotics and AMR
Knowledge on consequences if entire prescribed antibiotics course is not completed
Results (3/3)
Practices about Antibiotics and AMR
Practices when feeling unwell
Results (2/3)
Attitude about Antibiotics and AMR
Attitude
Attitude towards the importance of completing full course of antibiotics
REFERENCES
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DISCUSSION 1/2
DISCUSSION 2/2
LIMITATIONS
CONCLUSION

FEEDBACK FORM

(Organization Supervisor)

Name of the Student: Vivek Chaudhary

Summer Internship Institution: IQVIA, Delhi

Area of Summer Internship: Disease Management and Health System

Attendance: 98%

Objectives met: Development of KoBo Toolbox, Primary Research, RFP Background

Deliverables: Excel Data Analysis, RFP background submission, Presentation

Strengths: Punctual, Meet objectives on time, Efficient in work

Suggestions for Improvement: Can be more proactive in taking tasks, Should focus on learnings

Signature of the Officer-in-Charge (Internship)

Date: 23rd May 2024
Place: Delhi

Certificate of Approval

The Summer Internship Project of Vivek Chaudhary titled **"Knowledge, Attitude, and Practices of Antibiotics and Antibiotic Resistance among employees aged between 22-60 years at IQVIA, Delhi"** at **"IQVIA, Delhi"** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.

Dr Pankaj Talreja

Associate Professor

IIHMR, Delhi

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