

Assessment of awareness, knowledge and compliance of prescribed antibiotic use among employees of Decision Resources Group



**KEEP CALM
AND
ANTIBIOTICS
AREN'T ALWAYS
THE ANSWER**

Antibiotics don't work for winter viruses.

Antibiotics only fight infections caused by bacteria ✓

Bacteria can adapt and survive the effects of antibiotics, so they don't always work ✓

The more you use antibiotics, the more resistant bacteria become ✓

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Taking ANTIBIOTICS when you don't need them puts you and your family at risk



✗ ANTIBIOTICS DON'T WORK FOR

Colds
Flu
Vomiting
Most coughs
Most ear infections
Most sore throats
Most diarrhoea
Most cystitis

TAKE YOUR PHARMACIST'S
ADVICE

✓ ANTIBIOTICS ARE NEEDED FOR

Serious bacterial
infections including:
Sepsis
Pneumonia
Urinary tract
infections
Sexually transmitted
infections like gonorrhoea
Meningococcal meningitis

TAKE YOUR DOCTOR'S
ADVICE

Antibiotics think D.A.T.E.S

Don't demand
.....
Trust your healthcare professionals.
You don't need antibiotics for every
ailment, they know what's best.

Ask for advice
.....
Go to your local pharmacist about
what is best for your symptoms.

Take as prescribed

If you're prescribed, take your antibiotics
regularly by not skipping or overusing. Avoid
sharing antibiotics with others or saving it for
later "just in case".

Effective if completed

Antibiotics work best if you finish the
course.

Safe disposal

If you do have leftover medication, bring
it back to a pharmacy so they can
dispose of it safely.



Find out more at:

antibioticguardian.com

Take a pledge,
and be an antibiotic guardian!



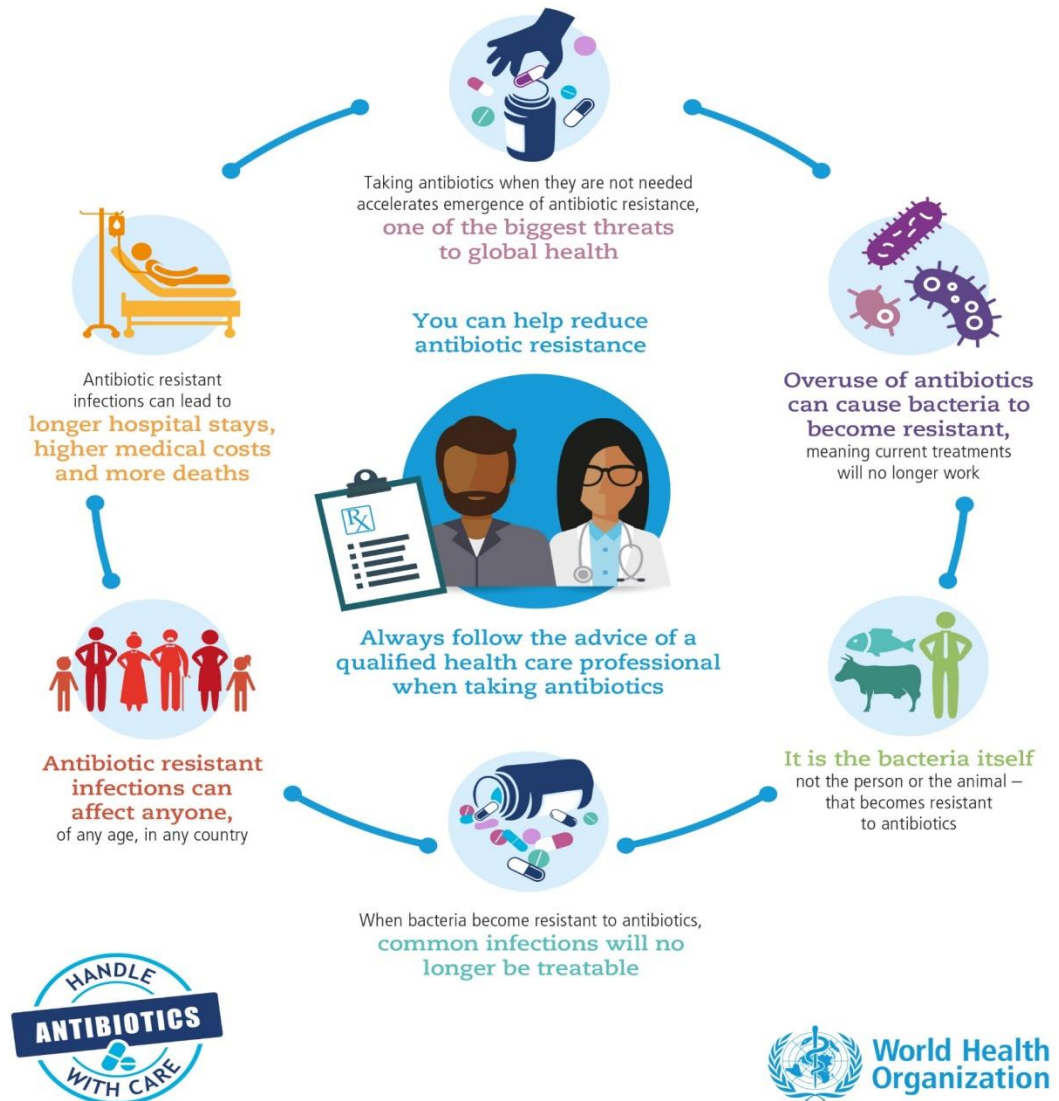
What is antibiotic resistance?

- Antibiotics are medicines used to prevent and treat bacterial infections. Antibiotic resistance occurs when bacteria change in response to the use of these medicines
- Bacteria, not humans or animals, become antibiotic-resistant
- Antibiotic resistance leads to higher medical costs, prolonged hospital stays, and increased mortality
- The world urgently needs to change the way it prescribes and uses antibiotics. Even if new medicines are developed, without behavior change, antibiotic resistance will remain a major threat
- Behavior changes must also include actions to reduce the spread of infections through vaccination, hand washing, practicing safer sex, and good food hygiene

What is the Scope of the problem?

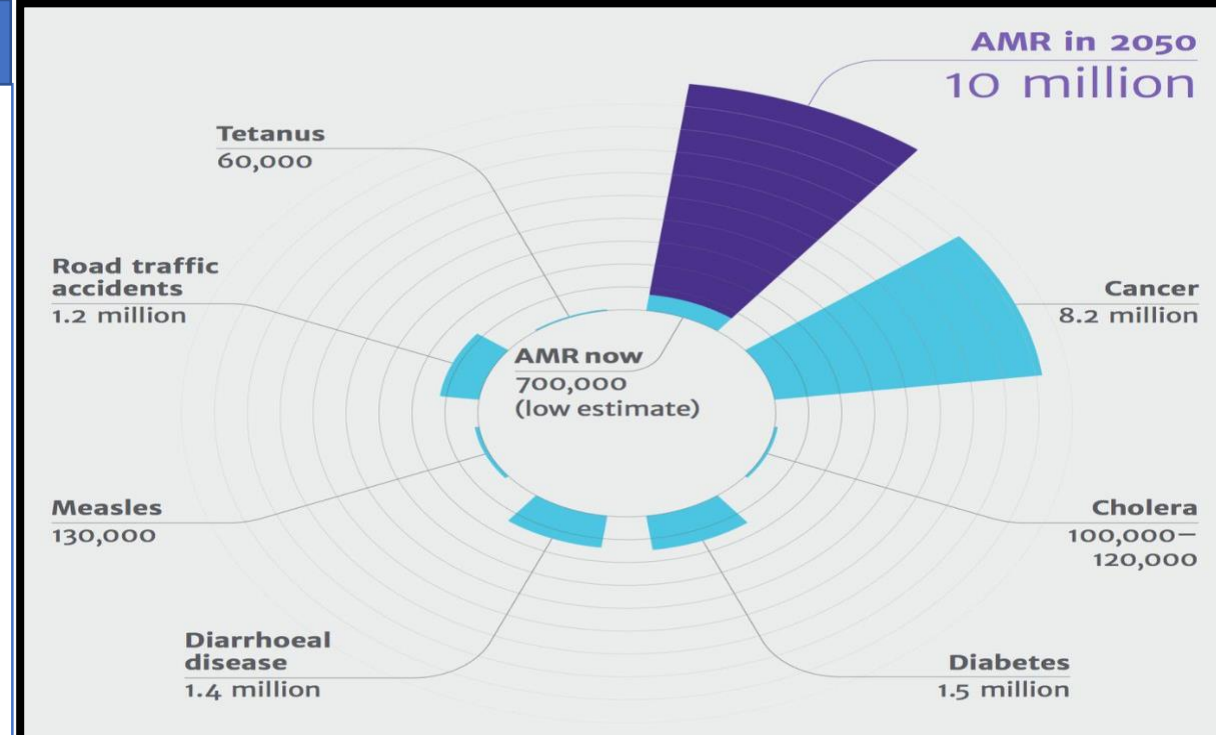
- Antibiotic resistance is rising to dangerously high levels in all parts of the world. New resistance mechanisms are emerging and spreading globally, threatening our ability to treat common infectious diseases
- Without urgent action, we are heading for a post-antibiotic era, in which common infections and minor injuries can once again kill

Misusing and overusing **ANTIBIOTICS** puts us all at risk



What is the impact of the problem?

- When infections can no longer be treated by first-line antibiotics, more expensive medicines must be used
- A longer duration of illness and treatment, often in hospitals, increases health care costs as well as the economic burden on families and societies
- Antibiotic resistance is putting the achievements of modern medicine at risk
- Organ transplantations, chemotherapy and surgeries such as caesarean sections become much more dangerous without effective antibiotics for the prevention and treatment of infections



What is the role of Health professionals?

- Prevent infections by ensuring your hands, instruments, and environment are clean
- Only prescribe and dispense antibiotics when they are needed, according to current guidelines.
- Report antibiotic-resistant infections to surveillance teams
- Talk to the patients about how to take antibiotics correctly, antibiotic resistance and the dangers of misuse
- Talk to the patients about preventing infections (for example, vaccination, hand washing, safer sex etc.

What is the role of Health professionals?

- Ensure a robust national action plan to tackle antibiotic resistance is in place
- Improve surveillance of antibiotic-resistant infections
- Strengthen policies, programs, and implementation of infection prevention and control measures
- Regulate and promote the appropriate use and disposal of quality medicines.
- Make information available on the impact of antibiotic resistance.

7 DANGEROUS MYTHS ABOUT ANTIBIOTICS

1. Antibiotics Are Great for Colds

- **Truth-** Antibiotics are effective against infections caused by bacteria, fungi, and some parasites. They don't work against viruses - which cause colds, flu and most coughs and sore throats.

2. It's OK to Take Antibiotics Prescribed for Someone Else

- **Truth-** The best antibiotic for you depends upon the specific illness you have. An antibiotic prescribed for someone else might not work for what ails you, and may actually make the illness worse.

3. It's OK to Stop Early

- **Truth-** If your doctor prescribes antibiotics, it's best to take all the prescribed doses - even if you feel better. Stopping early could mean the infection hasn't yet been fully eliminated - and could continue to make you sick.

4. Antibiotics Are Always Effective

- **Truth-** If symptoms persist after you've completed a course of antibiotics, alert your doctor. There's a chance the germs that made you sick were caused by germs that are resistant to the antibiotic you took. You might need an alternative.

7 DANGEROUS MYTHS ABOUT ANTIBIOTICS

5. It's a Good Idea to Save Leftover Medication

- **Truth**- Some patients try to save on drug costs by stockpiling medication they did not take during an illness - thinking they can simply take it next time they get sick. But medications -especially liquids - can lose their potency over time. What's more, the leftover medication might not work against your latest illness and could actually make it worse. Of course, if antibiotics are taken appropriately, there shouldn't be any leftover medication.

6. Antibiotics Can Prevent Bacterial Illness

- **Truth**- Taking an antibiotic when there is not a bacterial illness will not improve the course of the illness or prevent secondary bacterial illness.

7. Antibiotics Are Worth Taking Just in Case

- **Truth**- Antibiotics can cause side effects, including diarrhea and rash, in a significant number of people. What's more, the overuse of antibiotics may cause bacteria to become resistant to antibiotics - making them harder to treat in the future.

SOME BASIC FACTS ABOUT ANTIBIOTICS

- Antibiotics kill bacteria and can be an effective treatment for bacterial diseases. Antibiotic resistance is an evolutionary response by the bacteria to an antibiotic, where bacteria can survive and increase in the population if they possess a mutation such that the antibiotic is not effective. Then, the antibiotic resistance against that population of bacteria. The British government has called antibiotic resistance a major national risk.
- Bacteria are capable of developing resistance to antibiotics because they can divide rapidly. Physicians may prescribe a combination of more than one antibiotic to combat antibiotic resistance. For example, patients diagnosed with active tuberculosis are given a combination of isoniazid, rifampicin, pyrazinamide and either ethambutol or streptomycin for 6 months.

☐ Antibiotic resistance may occur due to the following reasons:-

1. When patients do not complete their full course of treatment.
2. When health-care providers prescribe the wrong treatment, the wrong dose, or wrong length of time for taking the drugs.
3. When the supply of drugs is not always available.
4. When the drugs are of poor quality.

STOP OVERUSE AND MISUSE OF ANTIBIOTICS COMBAT RESISTANCE



STUDY OBJECTIVES:

1. To assess the employees knowledge and awareness to antibiotics
2. To assess the use of prescribed antibiotics
3. To see the of prescribed antibiotics relationship between awareness and knowledge of antibiotics and use

RESEARCH QUESTIONS:

1. What did the respondents know about antibiotic resistance, activity and proper use?
2. What was the respondent's attitude about compliance with prescribed antibiotic course?
3. What was the respondent's awareness level regarding Antibiotic Resistance Campaign?

ANTIBIOTIC RESISTANCE



METHODOLOGY OF THE STUDY

- **STUDY DESIGN :** The design of the study is descriptive, cross-sectional and observational. The study was conducted in a consulting firm based in Bangalore. Confidentiality was maintained while collecting information through a self administered questionnaire. Demographic data as well as level of agreement with various statements concerning antibiotics and antibiotic use were provided by the respondents
- **SAMPLE SIZE:** 100 employees of a consulting firm based in Bangalore
- **DURATION OF THE STUDY:** 3 months
- **INCLUSION CRITERIS:** Employees of a consulting firm based in Bangalore with age 20+ years
- **EXCLUSION CRITERIA:** Health care professionals
- **DATA COLLECTION:** A self-administrated questionnaire was used to collect data. The questionnaire comprises four sections sociodemographic characteristics, knowledge, attitude, and practices of BSE questions.
 1. Socio-demographic data
 2. Knowledge about antibiotics
 3. Awareness about antibiotic resistance
 4. Antibiotic usage and respondent's attitude towards antibiotics usage

WHAT ARE DRUG-RESISTANT INFECTIONS?



Antimicrobial Resistance (AMR) is **resistance to drugs that treat infections**, caused by microbes, parasites, viruses or fungi.

This is a natural phenomenon: **microbes evolve to develop resistance to drugs as they are exposed to them.**

BUT HUMAN ACTION IS MAKING AMR WORSE



Misuse or overuse of antimicrobial drugs in health care and in the breeding of crops and animals



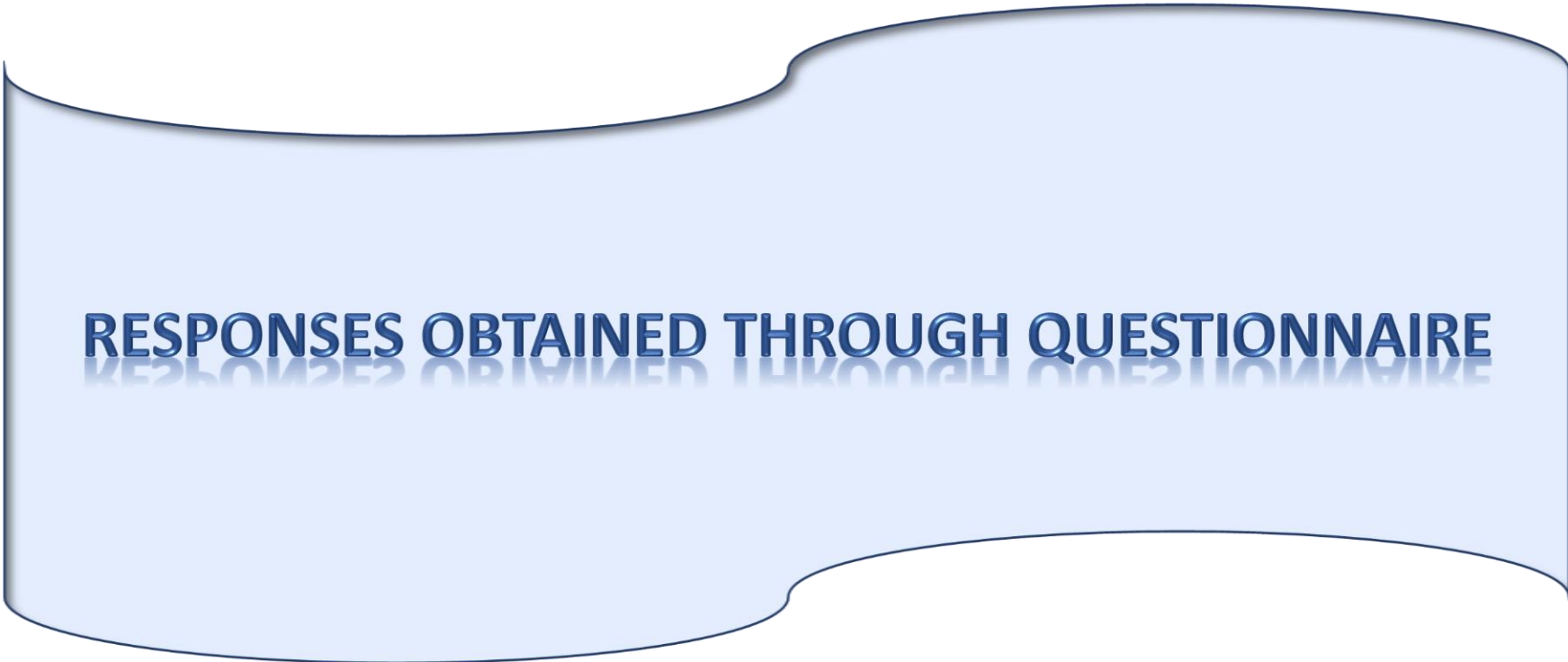
Poor sanitary conditions



Inappropriate food handling



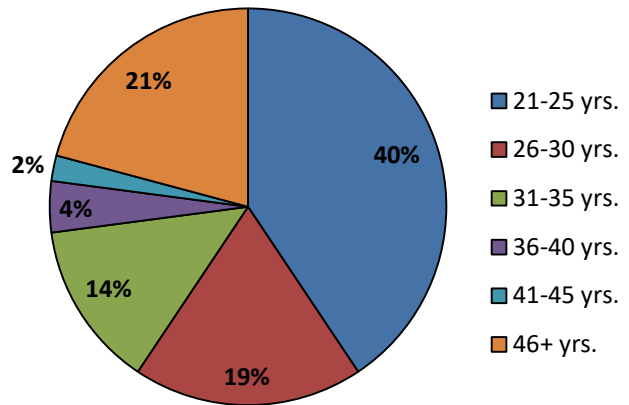
Poor infection prevention and control practices in hospitals



RESPONSES OBTAINED THROUGH QUESTIONNAIRE

DEMOGRAPHIC FINDINGS

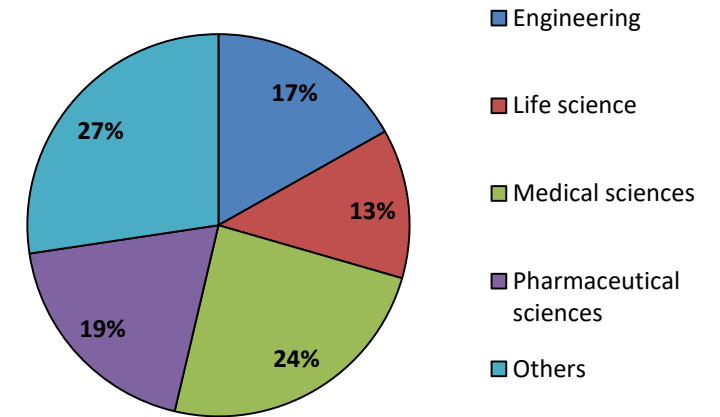
AGE GROUP OF RESPONDENTS (N=100)



Majority of the employees are between the age group of 21-25 yrs.

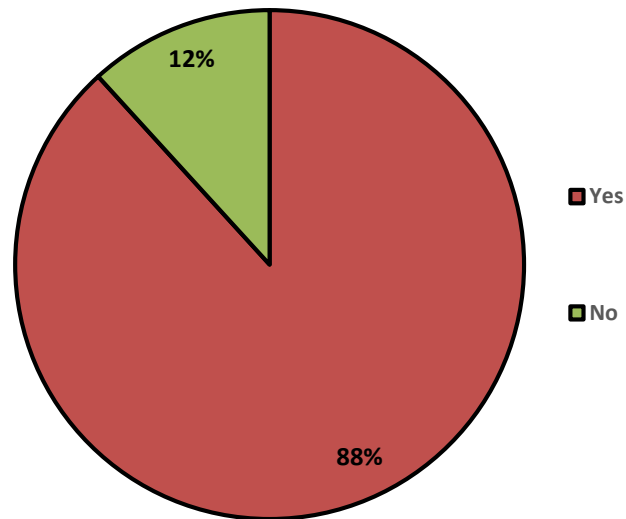
Most of the respondents have science as their educational background.

EDUCATIONAL BACKGROUND OF RESPONDENTS (N=100)



AWARENESS

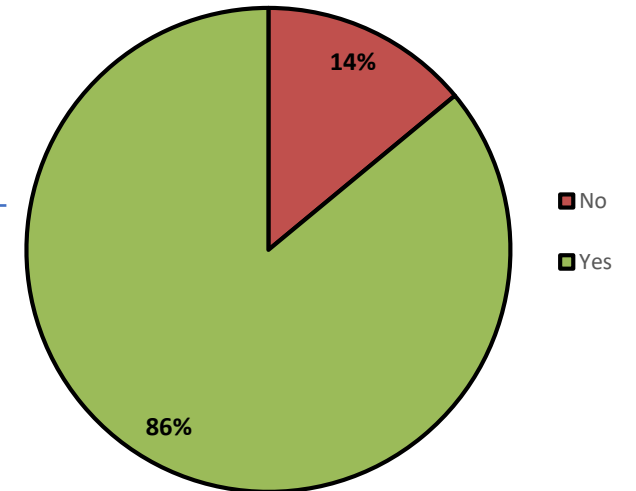
RESPONDENTS AWARE OF "ANTIBIOTIC RESISTANCE" (N=100)



88% of the respondents claimed to be aware of "antibiotic resistance".

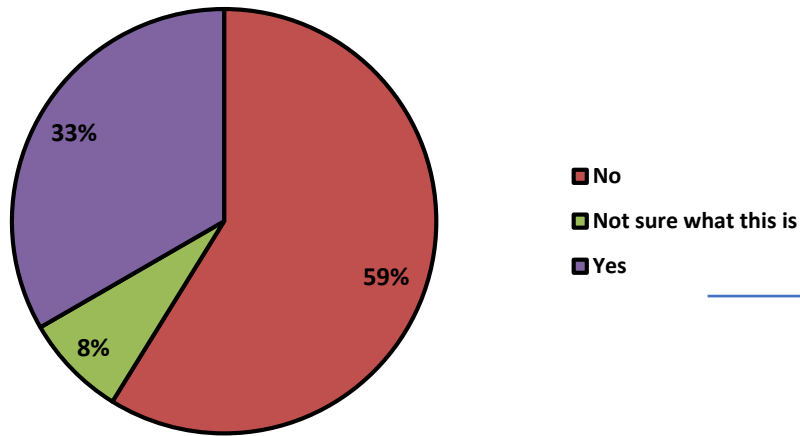
Majority of the respondents agree that public's contribution can play a big role in preventing antibiotic resistance

WHETHER PUBLIC'S CONTRIBUTION CAN PREVENT ANTIBIOTIC RESISTANCE IN THE COMMUNITY (N=100)



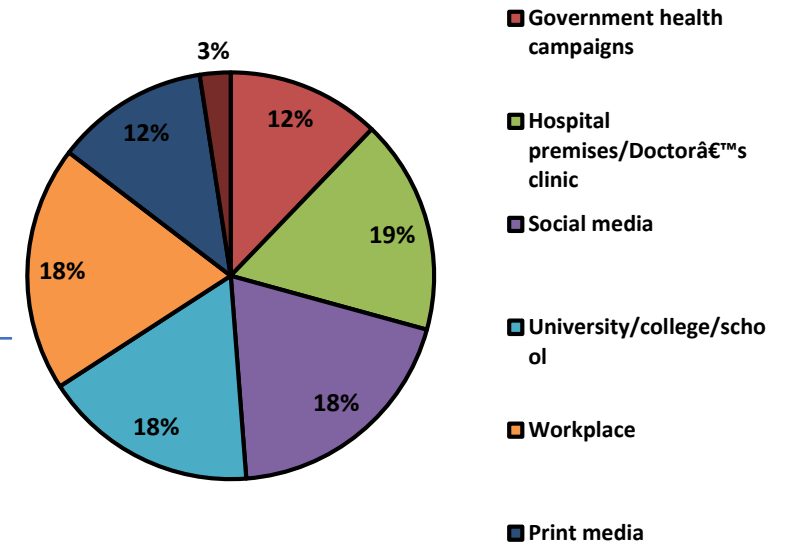
ANTIBIOTIC RESISTANCE CAMPAIGN

WHETHER RESPONDENTS CAME ACROSS ANY ANTIBIOTIC RESISTANCE CAMPAIGN (N=100)



Majority (59%) of the total respondents did not come across any antibiotic resistance campaign.

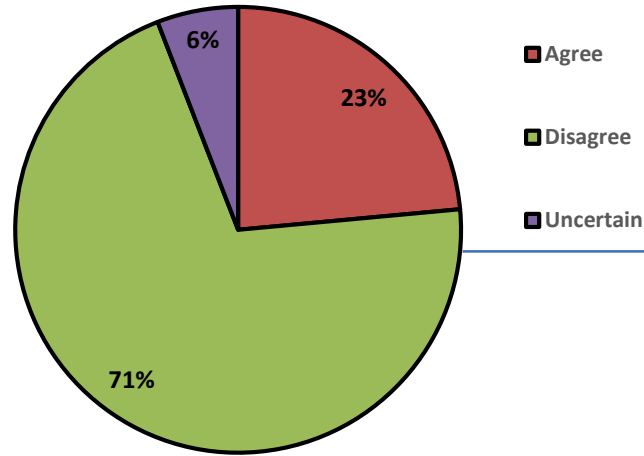
WHERE DID THE RESPONDENT CAME ACROSS THE CAMPAIGN (N=33)



Only 12 % of the total respondents came across antibiotic resistance campaign through government driven health campaigns although social media and workplaces were the two biggest sources through which information about antibiotic resistance campaign was communicated.

KNOWLEDGE

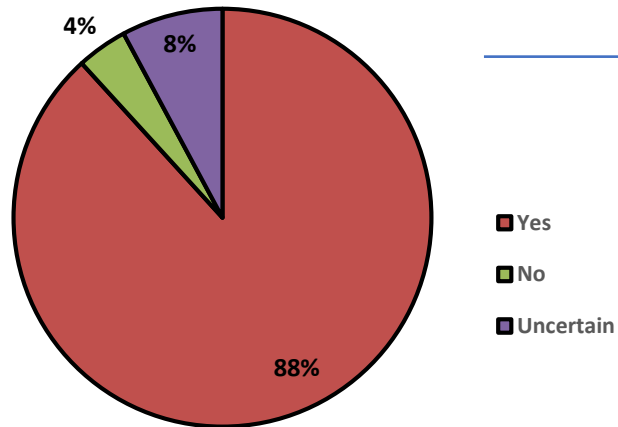
**ANTIBIOTICS ARE EFFECTIVE AGAINST VIRUS
(N=100)**



More than two thirds (71%) of the total respondents know that antibiotics are not effective against virus.

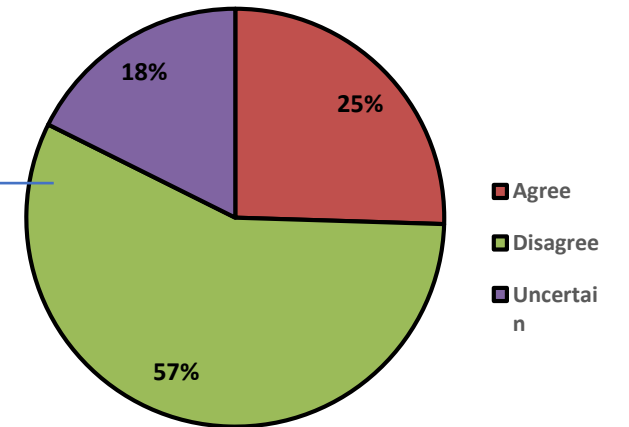
Majority of the respondents agree upon the fact that excessive use of antibiotics make them less effective over time.

CAN EXCESSIVE USE OF ANTIBIOTICS MAKE THEM LESS EFFECTIVE OVER TIME (N=100)

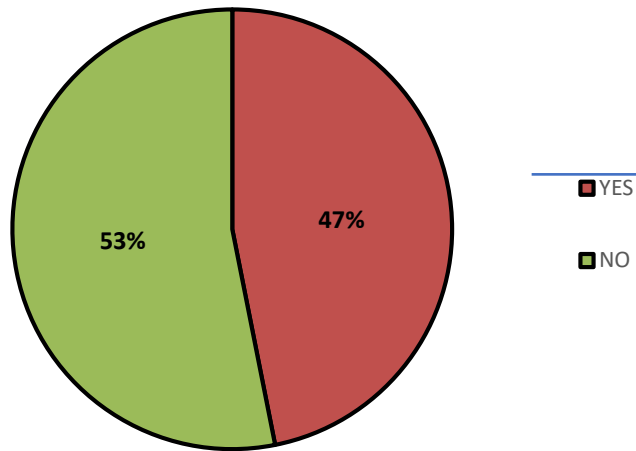


Though majority of the respondents disagree but still 25% of the respondents, a huge chunk, agree on antibiotics being effective against common cold.

ANTIBIOTICS ARE EFFECTIVE AGAINST COMMON COLD (N=100)



**RESPONDENTS EXPECTATIONS TO BE
PRESCRIBED AN ANTIBIOTIC FOR
COUGH/COLD/SOUR THROAT (N=100)**



ATTITUDE/BEHAVIOUR

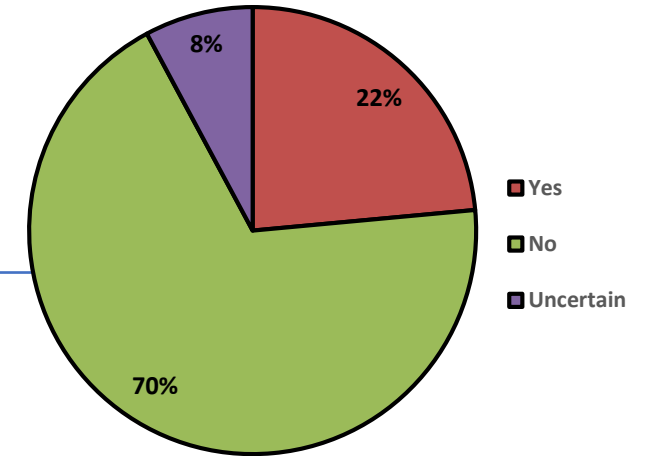
Almost half (47%) the number of total respondents expect them to be prescribed antibiotic for cough/cold/sour throat.

Majority of the respondents are likely to comply with the dosage of antibiotics prescribed.

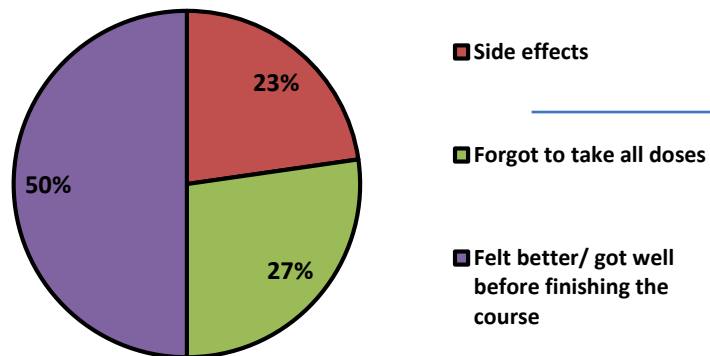
Half (50%) the total number of respondents agree to have left the antibiotic course in between because of feeling better.

Majority of the total respondents either self medicate/administer antibiotics or have done so in the past.

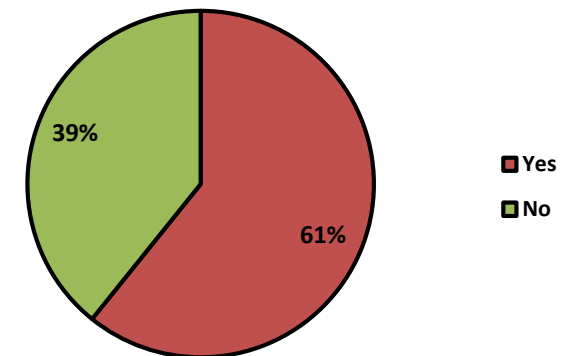
**WOULD YOU STOP FURTHER INTAKE OF
ANTIBIOTIC IF YOU FEEL WELL HALF WAY
THROUGH THE COURSE (N=100)**



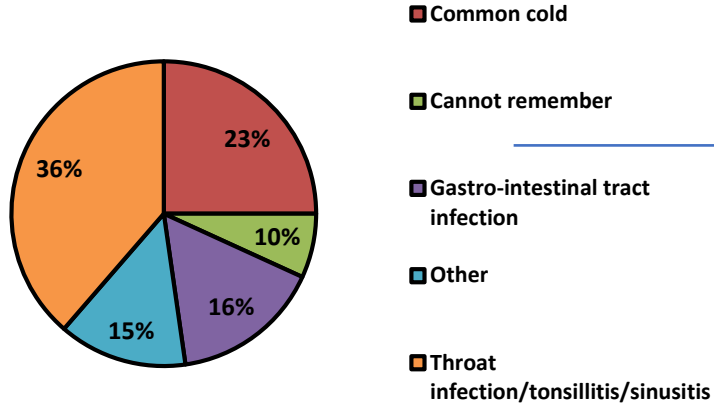
**POSSIBLE REASON/S FOR NOT
COMPLETING THE COURSE OF
ANTIBIOTIC (N=22)**



**SELF MEDICATION OR ADMINISTRATION
OF ANTIBIOTIC WITHOUT DOCTOR'S
PRESCRIPTION (N=100)**



PROBLEM FOR WHICH A RESPONDENT SELF ADMINISTERED AN ANTIBIOTIC (N=61)

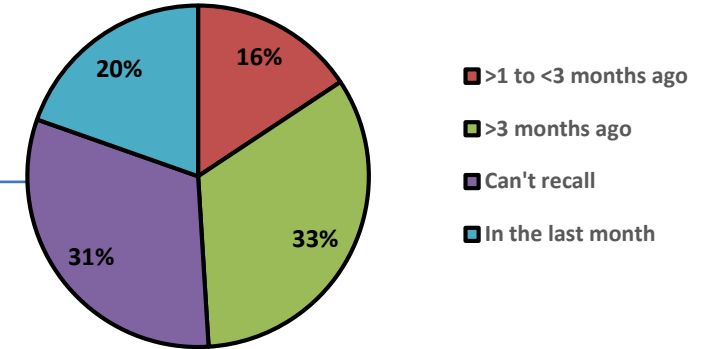


PRACTICE/USAGE

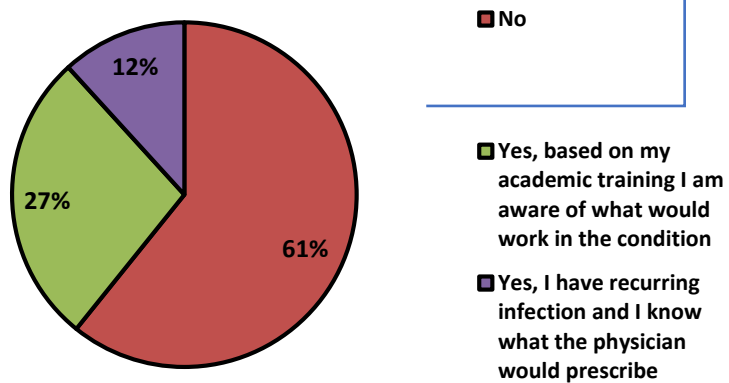
Throat infection/tonsillitis/sinusitis and common cold are the most common problems for self administration of antibiotics among respondents.

A mighty percentage (31%) of respondents are not making a note of the problem for which they administered antibiotics.

ANTIBIOTIC ADMINISTERED LATELY (N=100)



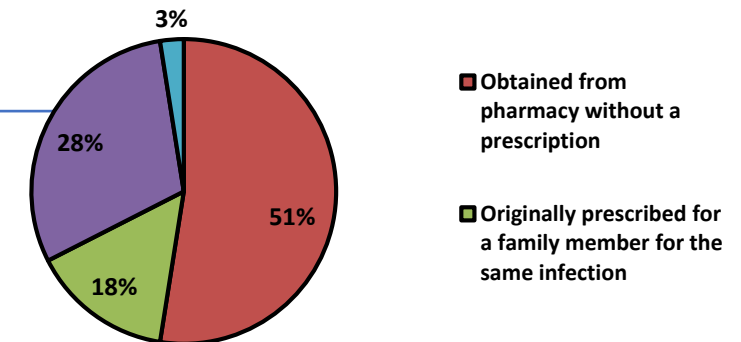
WHETHER RESPONDENTS STOCKED ANTIBIOTICS (N=100)



Most of the respondents do not stock antibiotics.

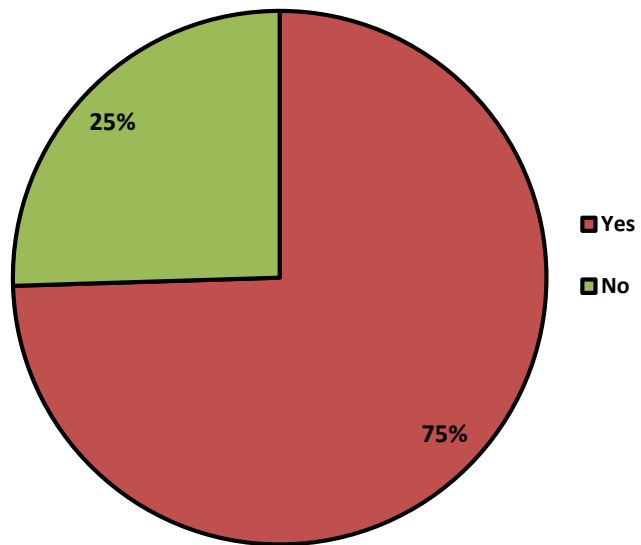
Majority of the respondents obtained the antibiotics from pharmacy without prescription.

SOURCE FROM WHERE THE ANTIBIOTICS WERE TAKEN FOR SELF ADMINISTRATION (N=61)



COMPLIANCE WITH THE PRESCRIBED ANTIBIOTIC COURSE

**COMPLETED LAST COURSE OF
ANTIBIOTIC AS PRESCRIBED (N=100)**



Most of the respondents agree to have complied with the antibiotic course last prescribed.

RELATIONSHIP BETWEEN AWARENESS, KNOWLEDGE AND USE OF ANTIBIOTICS

	KNOWLEDGE OF ANTIBIOTICS			USE OF ANTIBIOTICS	
	antibiotics are not effective against virus	excessive use of antibiotics make them less effective over time	antibiotics are not effective against common cold	Did not completed last course of antibiotic as prescribed	self medication or administration of antibiotic without doctor's prescription
	71%	88%	57%	25%	61%
AWARENESS ABOUT ANTIBIOTIC RESISTANCE					
Yes (N=88)	88			88	

RESULTS AND DISCUSSION

- This study was conducted to assess the awareness, knowledge and compliance of prescribed antibiotic use among a set of employees working in a consulting firm based in Bangalore. Despite the fact 88% of the respondents stated they were aware of antibiotic resistance only 33% of them came across any antibiotic resistance campaign, which implies that many of the respondents were lacking awareness regarding antibiotic resistance.
- Actions of the respondents who end up taking antibiotics for viral infections, which are not treated by them, are driven by the prevailing myths regarding the antibiotics. As 47% of the respondents still expect them to be prescribed an antibiotic for cough/cold/sour throat, none of which is cured by an antibiotic. This also implies that even though most of the respondents agree to be aware of antibiotic resistance, many of them lack proper or have inadequate knowledge about their judicious use.
- Responses obtained through the survey floated also show a mismatch between respondents commitment and actual compliance to the prescribed antibiotic use as many of them despite agreeing to comply with prescribed antibiotic course were self administering the antibiotics i.e. without doctor's prescription.
- A major chunk, as many as 31%, of the respondents can not even recall as to when they administered an antibiotic lately. This implies that these people are not keeping a proper track of their antibiotic administration regime, which may even contribute in antibiotic resistance.

CONCLUSION

- Just being aware about the term 'antibiotic resistance' does not mean that a person also has adequate knowledge about the rational use of antibiotics. The responses obtained through the survey floated implicate a different pattern of antibiotic use among respondents and it shows that even though many of them claim to be aware of antibiotic resistance, they lack proper and adequate knowledge about their judicious use.
- Employees should be made aware that they should not purchase antibiotics without prescription as results obtained through survey suggest that 52% of the respondents obtained antibiotics from a pharmacy without prescription which possibly can lead to their misuse and ultimately contribute in antibiotic resistance.
- More number of antibiotic awareness campaigns should be carried out by the organization to create awareness amongst employees about the ill effects and consequences of using antibiotics in an unjust manner.
- The organisation may carry out certain activities or adopt some strategies/techniques to educate their employees about judicious use of antibiotics i.e. as prescribed by the physician.
- Employees should consider it as their moral duty to use antibiotics in the prescribed manner and should comply with its dosage regime.

THANK YOU

