ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 10, Issue, 09, pp.73303-73307, September, 2018
DOI: https://doi.org/10.24941/ijcr.31901.09.2018

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

A SURVEY ON THE KNOWLEDGE, ATTITUDE, PERCEPTIONS AND PRACTICES RELATED TO ANTIBIOTIC USE AND RESISTANCE IN THE POSTGRADUATE STUDENTS IN TERTIARY CARE CENTER/ HOSPITAL

***Dr. Mayank Dhore and Dr. Asha Jha**

Jhawarlal Nehru Medical College, DMIMS, Sawangi (Meghe), Wardha

ARTICLE INFO

Article History:
Received 10th June, 2018
Received in revised form
27th July, 2018
Accepted 25th August, 2018
Published online 30th September, 2018

Key Words:
KAP, Antibiotic Resistance, Post Graduate Students, Questionnaire Based Study.

ABSTRACT

Antibiotics are frequently used in clinical practice. The antibiotic-resistant bacteria due to unthoughtful and indiscriminate use of antibiotic is a major issue which is affecting healthcare delivery throughout the world. Available literature highlights the necessity of rationalization of antimicrobial therapy in developing countries. **Study tool:** A cross sectional questionnaire based study was conducted after the approval from Institutional ethics committee over the time of one month at Acharya Vinoba Bhave Rural Hospital (AVBRH) Sawangi (Meghe) Wardha. A structured questionnaire was prepared and validated by the experts, which consisted of three parts. They included questions regarding knowledge, attitude and practice of post graduate students about antibiotic use and resistance prescribed in there hospital. **Study population:** Post graduate students of all three years working in AVBRH. **Study procedure:** Each post graduate student was explained the objectives of the study and their willingness to participate in the study were obtained. After the briefing, questionnaire was distributed and the students were asked to respond to the questions completely and anonymously. Completed responses were collected for analysis. **Conclusion:** Medical education should include strategies to change the attitude and practices apart from raising knowledge for improved patient outcomes. Medical professionals should be tailored with a sense of responsibility that, as prescribers, their responsibility pertains not only to the patients benefit and wellbeing but also to the society at large.

Citation: ***Dr. Mayank Dhore and Dr. Asha Jha*, 2018.** "A survey on the Knowledge, Attitude, Perceptions and Practices related to Antibiotic use and Resistance in the postgraduate students in tertiary care center/ Hospital.", *International Journal of Current Research*, 10, (09), 73303-73307.

INTRODUCTION

Antibiotics are frequently used in clinical practice. The antibiotic-resistant bacteria due to unthoughtful and indiscriminate use of antibiotic is a major issue which is affecting healthcare delivery throughout the world (Kunin, 2002; Akande *et al*., 2009) Available literature highlights the necessity of rationalization of antimicrobial therapy in developing countries (Akande *et al*., 2009; Remesh *et al*., 2013; Khan *et al*., 2013). Doctors have an important role to play in the battle against indiscriminate use and antibiotic resistance, not only through their safe and rational prescribing, but also by promoting patient awareness and knowledge and imparting health education to the community regarding safe medication practices concerning antibiotics. The development of antibiotic resistance is accelerated by excessive antimicrobial prescriptions. More than 50% of antibiotics worldwide can be purchased without a prescription. The scenario in developing countries is worse as regulatory measures are poorer with regard to antibiotic use. In many undeveloped countries, the latest antimicrobials are also available over-the-counter and patients take the opportunity to self-prescribe due to high consultation cost.

Corresponding author: **Mayank Dhore,**
Jhawarlal Nehru Medical College, DMIMS, Sawangi (Meghe), Wardha.

To mitigate antibiotic resistance, there is an urgent need to transform the attitude of not only medical doctors but also all other health professionals regarding prescribing antimicrobials. Post graduate students in hospitals can play an important role in preventing the transmission of resistant bacteria and promote the awareness of antibiotic resistance to patients and the community, together with the physicians and nurses, and thus, a more effective intervention to control of antibiotic resistance can be strategized. In all, 20%–50% of antibiotic use is either unnecessary or inappropriate and decreasing it is a necessary first step to restrain antibiotic resistance. There are reports indicating that often national, international, and hospital guidelines were not enough to change medical doctors' behavior regarding antimicrobial prescribing. Various studies have described the inability of the prescribing physicians in creating awareness and providing adequate education to the patients regarding antibiotic usage (Chen, 2005). The interventions which are undertaken to prevent and control antimicrobial resistance, usually aim to bring about behavioural changes in the target group, and the outcome of these interventions is affected by the previous beliefs and motivations which are held by this group (Guerra *et al*., 2007). Hence, for any educational intervention to be successful and for the changes to be sustained, it should change the knowledge, attitudes and practices (KAP) of the target group (Simpson *et al*., 2007).

The clinical medical students represent a highly educated group of medical personnel and their knowledge, attitude and behavior in relation to public usage of antibiotics can greatly impact in the future on antibiotic-related issues. Therefore, before planning any training program or an educational activity, we have to be aware of the baseline KAP of the target population, which will assist us in devising a suitable approach and an effective curriculum. The present study is done to assess the knowledge and insight of clinicians in teaching hospitals of Wardha regarding the usage of antibiotics in the hospitals where they are practicing, with stress on whether they perceive any misuse of these drugs, possible reasons behind such misuse and feasible remedial measures. Taking into consideration the role of doctors in prescription audit and adverse drug reaction monitoring within hospitals, a comparative assessment will also done in order to determine whether the clinicians and pharmacologists differed significantly in their views regarding the issues of concern as discussed above.

METHODS

Study site: ABVRH , Sawangi (Meghe) tertiary care hospital

Study design: Cross sectional, observational, questionnaire based study

Study tool: A cross sectional questionnaire based study was conducted after the approval from Institutional ethics committee over the time of one month at ABVRH Sawangi (Meghe) Wardha. A structured questionnaire was prepared and validated by the experts, which consisted of three parts. They included questions regarding knowledge, attitude and practice of post graduate students about antibiotic use and resistance prescribed in there hospital.

Study population: Post graduate students of all three years working in ABVRH, and who were willing and voluntarily answered the questionnaire. As it was a cross sectional study, the time to respond to the questions was limited to 7 days maximum after receiving, a well-designed questionnaire consisting of total of 10 questions about the antibiotic use and its resistance with a point of view of obtaining appropriate answers to the related question was prepared with the help of expertise form the department of pharmacology JNMC Sawangi (Meghe) Wardha. After validation the questionnaire was printed and ready for distribution

Study procedure: Each post graduate student was explained the objectives of the study and their willingness to participate in the study were obtained. After the briefing, questionnaire was distributed and the students were asked to respond to the questions completely and anonymously. Completed responses were collected for analysis.

Statistical methods: Descriptive statistical analysis was used to generate frequencies, percentage and proportions. Chi-square test was also used at appropriate places to determine the statistical significance.

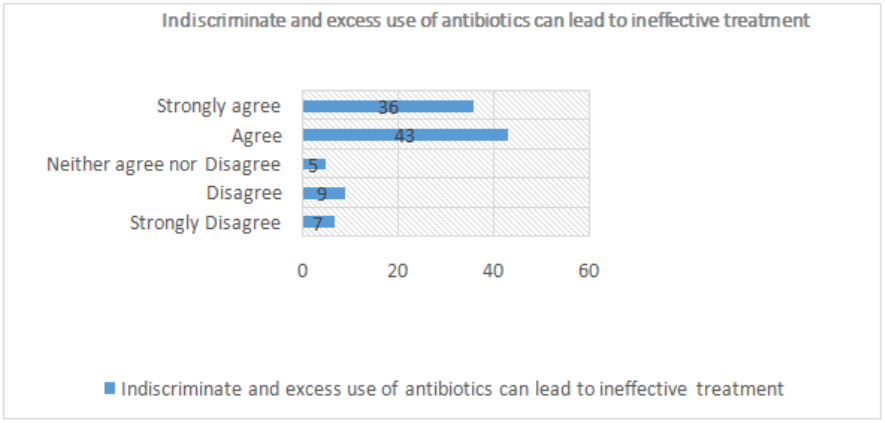
RESULTS

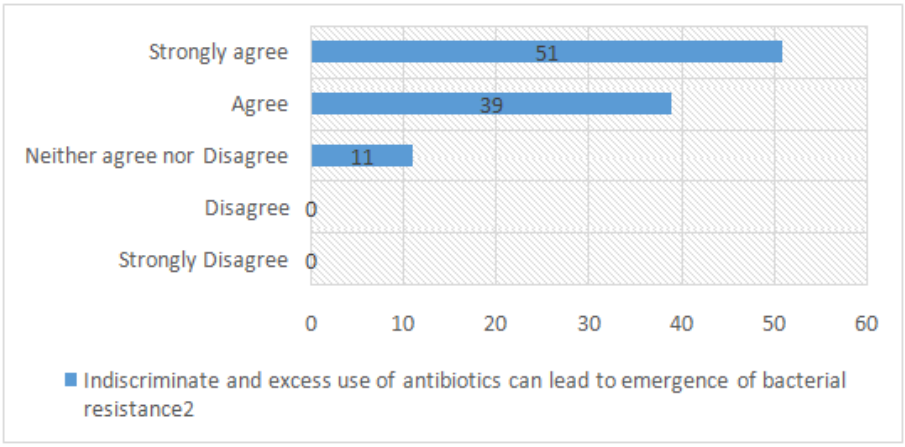
In our study a total of 100 questionnaires were distributed and 100 the questionnaires were returned with complete response. The response rate of the study was 100% the other information such as gender, age etc. of the participants was not gathered and the response was kept anonymous. In the present study it was observed that the majority of the respondents 36% strongly agreed that Indiscriminate and excess use of antibiotics can lead to ineffective treatment 43% agreed, 5 % neither agreed nor disagree, 9% disagreed. 11% strongly agreed, 27% agreed, 14% neither agreed nor disagreed, 31 % disagreed and 17 % strongly disagreed on the question whether antibiotics must be used to prevent getting more serious in case of common cold. .On question that antibiotics are always helpful in fever 34% disagreed and 7% strongly agreed and 17% agreed, 25% neither nor disagree and 17% strongly disagreed

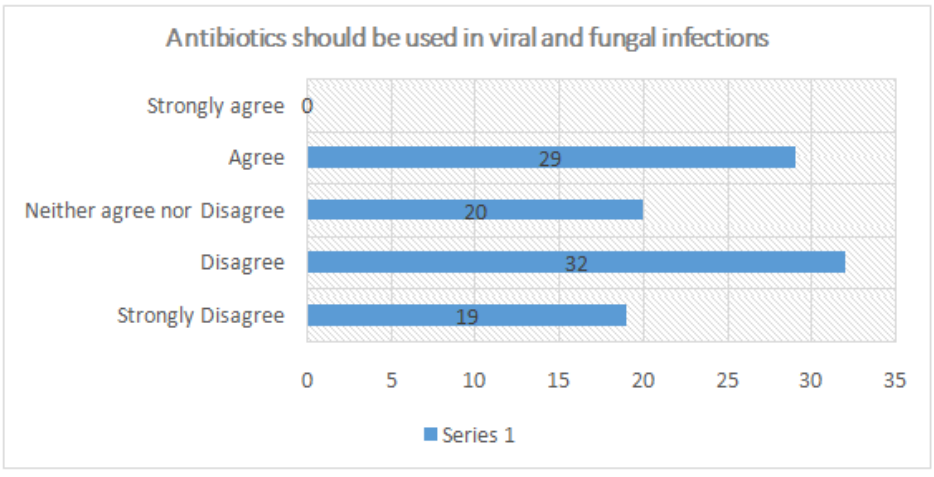
On knowledge based question asked was whenever the respondent takes antibiotics he contributes to development of antibiotics resistance the respondent answered 12% strongly agree, 35% agree , 24% neither agree nor disagreed, 9% disagreed and 10% strongly disagreed. On another knowledge question on whether the post graduate student support self-medication of antibiotic based on previous prescription only 7% agreed 29% neither agreed nor disagreed 47% disagreed and 17% strongly disagreed. On asking their opinion on completing the course 29% always complete the antibiotic prescribed to them and 71% seldom completed the antibiotic course given to them. The practice question whether overdosing is a common practice with a hope of faster recovery of patients, 70 % thought that it was true, responded yes and 30% of the respondents chose the answer as NO. And the last question whether the post graduate residents prefer prescribing broad spectrum antibiotics over selective ones ,41% did not agree and responded as NO and 59 % respondent thought it was alright to use broad spectrum antibiotics over selective ones.

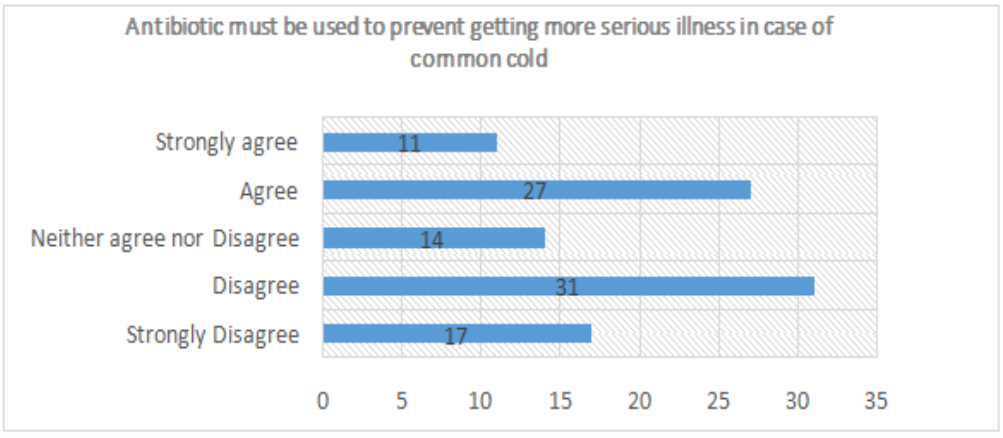
DISCUSSION

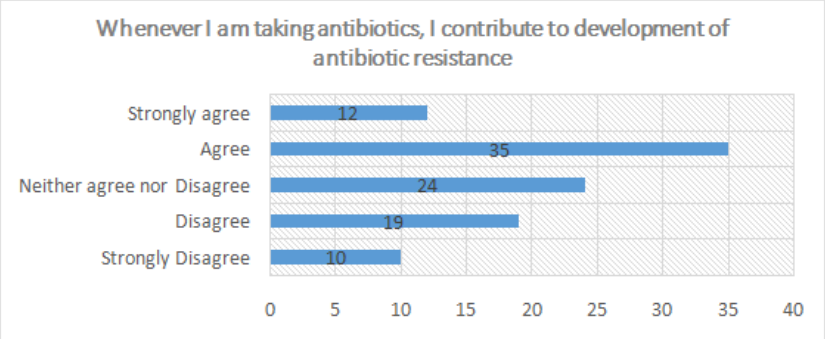
This study was conducted to evaluate the knowledge, attitude and practice of Post graduate students in a rural teaching hospital towards antibiotic resistance and prescription. Antibiotic resistance is already an important and serious public health problem (Ganguly *et al*., 2011). This fact was already explained to the paticipants. A similar response was observed in a study conducted by Jorak, *et al*. (2014). All the participants in our study were aware of the fact that indiscriminate use of antimicrobial agents can result in bacterial resistance. Similarly, another study conducted in China has also reported that majority of the participants including medical students were aware of the fact that abuse of antibiotics is a main cause for antibiotic resistance (Huang, 2013). Many of the participants in our study felt that antibiotics are not required to treat the symptoms of common cold. A similar response was also observed in another study. However, study by Hueng, *et al* has shown that majority of the participants had a belief that antibiotics can speed up recovery of common cold, cough and a number of other related illnesses arising from viral infections. In our study also there were some respondents who preferred the use of antibiotics for viral and fungal infections. Studies have proven that there is no benefit from antibiotics in the treatment of viral infections (Kenealy *et al*., 2013). The wrong perception can result in increased usage of antibiotics, which in turn can result in an increase in antibiotic resistance (Chatterjee *et al*., 2015).

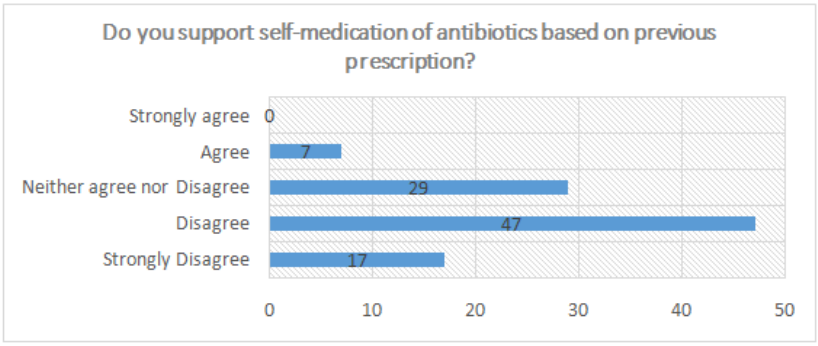

Indiscriminate and excess use of antibiotics can lead to ineffective treatment
Strongly agree
Agree
Neither agree nor Disagree
Disagree
Strongly Disagree
36
43
5
9
7
0
20
40
60
Indiscriminate and excess use of antibiotics can lead to ineffective treatment

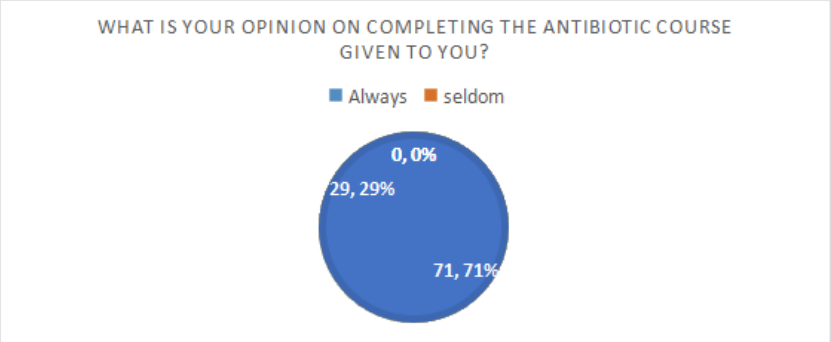

Strongly agree
Agree
Neither agree nor Disagree
Disagree
Strongly Disagree
51
39
11
0
0
0
10
20
30
40
50
60
Indiscriminate and excess use of antibiotics can lead to emergence of bacterial resistance2

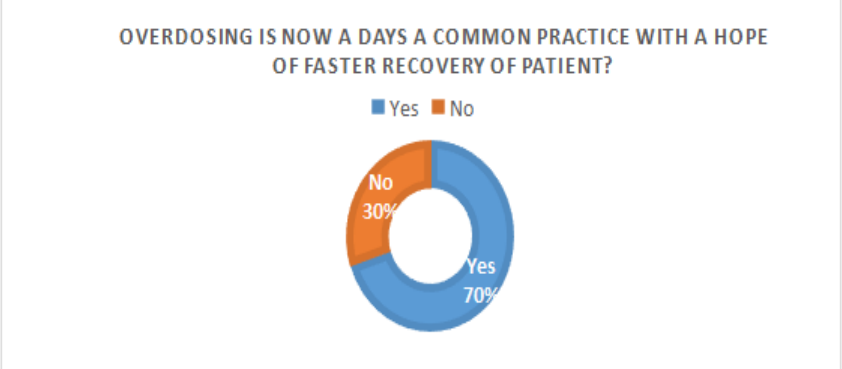

Antibiotics should be used in viral and fungal infections
Strongly agree
Agree
Neither agree nor Disagree
Disagree
Strongly Disagree
0
29
20
32
19
0
5
10
15
20
25
30
35
Series 1

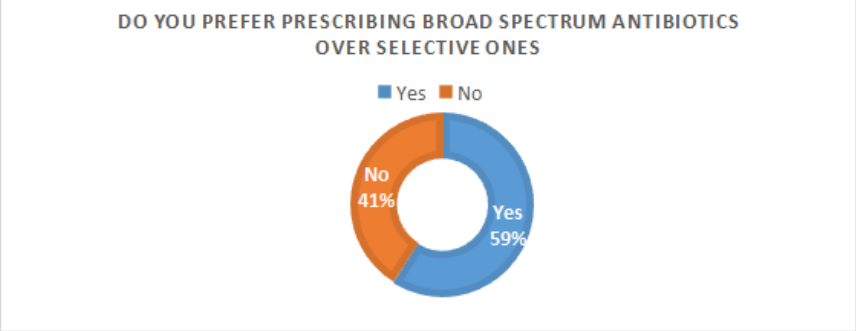

Antibiotic must be used to prevent getting more serious illness in case of common cold
Strongly agree
Agree
Neither agree nor Disagree
Disagree
Strongly Disagree
11
27
14
31
17
0
5
10
15
20
25
30
35


Whenever I am taking antibiotics, I contribute to development of antibiotic resistance
Strongly agree
Agree
Neither agree nor Disagree
Disagree
Strongly Disagree
12
35
24
19
10
0 5 10 15 20 25 30 35 40


Do you support self-medication of antibiotics based on previous prescription?
Strongly agree
Agree
Neither agree nor Disagree
Disagree
Strongly Disagree
0
7
29
47
17
0 10 20 30 40 50


WHAT IS YOUR OPINION ON COMPLETING THE ANTIBIOTIC COURSE GIVEN TO YOU?
Always
seldom
0, 0%
29, 29%
71, 71%


OVERDOSING IS NOW A DAYS A COMMON PRACTICE WITH A HOPE OF FASTER RECOVERY OF PATIENT?
Yes
No
No 30%
Yes 70%


DO YOU PREFER PRESCRIBING BROAD SPECTRUM ANTIBIOTICS OVER SELECTIVE ONES
Yes
No
No 41%
Yes 59%

This observation confirms the need for educational intervention. One of the possible reason for this attitude may be attributed to the hospital environment having direct impact on post graduate students in the antibiotic prescription pattern. This is supported by the observations of a study by Hueng, *et al* which showed that the scores on behavior towards antibiotics usage was lower for fourth and fifth year medical students when compared with their juniors.7 Hence there is a need for implementing a strict antibiotic policy for its rational usage, to which the participants also agreed. With regard to the practice of antibiotic prescription it was observed that more than a 58% students in our study were not sure of choosing combination of antibiotics and making decision about correct diagnosis of infection. Similarly, a survey done on medical students in United States has shown that 90% of the participants desiring for more education on appropriate prescription of antibiotics (Abbo, 2013) Inadequate training during their undergraduate period might be responsible for the lack of confidence in antibiotic prescription. Frequency of antibiotic prescription and the concern of antibiotic resistance necessitate the undergraduate and postgraduate curriculum to have antimicrobial chemotherapy as a vital topic (Wright, 2004) The undergraduate curriculum should include problem based learning or vignette-based clinical scenario teaching methods that can be more effective than regular formal lectures. Case-based scenarios teaching can involve small group activities involving the management of common infections where antibiotics are often misused. Also, the principles of antibiotic stewardship can be highlighted.

The curriculum should also include skills to communicate with the patients especially in uncertain diagnosis situation which helps reduce the unnecessary prescription. Medical education should also include strategies to change the behaviour apart from increasing the knowledge for improved patient outcomes. Young generation medical professionals should be tailored with a sense of responsibility that, as prescribers, their responsibility pertains not only to the patients benefit and wellbeing but also to the society at large. Thus our study has generated information about the knowledge, attitude and practice of post graduate students towards antibiotic resistance and prescription which helps us to plan for an efficient and effective curriculum regarding the same.

REFERENCES

Abbo LM, Cosgrove SE, Pottinger PS, Pereyra M, Sinkowitz-Cochran R, Srinivasan A. 2013. Medical students' perceptions and knowledge about antimicrobial stewardship: how are we educating our future prescribers? *Clin Infect Di.,* 57(5):631-8.

Akande TM, Ologe M, Medubi GF. 2009. Antibiotic prescription pattern and cost at university of llorin teaching hospital, llorin, Nigeria. *Int J Trop Med.,* 4:50–4.

Chatterjee D, Sen S, Begum SA, Adhikari A, Hazra A, Das AK. 2015. A questionnaire-based survey to ascertain the views of clinicians regarding rational use of antibiotics in teaching hospitals of Kolkata. *Indian J Pharmacol.,* 47:105-8.

Chen C, *et al*. 2005. Behaviour, attitudes and knowledge about antibiotic usage among residents of Changhua, Taiwan. *J MicrobiolImmunol Infect.*, 38:53–59. (PubMed

Ganguly NK, Arora NK, Chandy SJ, Fairoze MN, Gill JP, Gupta U. 2011. Rationalizing antibiotic use to limit antibiotic resistance in India. *Indian J Med Res*., 134:281-94.

Guerra CM, Pereira CAP, Neto ARV, Cardo DM, Correa L. 2007. Physicians' perceptions,beliefs,attitudes, and knowledge concerning antimicrobial resistance in a Brazilian teaching hospital. *Infect Control Hosp Epidemiol.* 28:1411–14. (PubMed)

Huang Y, Gu J, Zhang M, Ren Z, Yang W, Chen Y. 2013. Knowledge, attitude and practice of antibiotics: a questionnaire study among 2500 Chinese students. *BMC Medical Education.,* 13:163.

Jorak A. 2014. A Cross Sectional Study on Knowledge, Attitude and Practice of Medical Students towards Antibiotic Resistance and its Prescription*, Iran. Adv. Environ. Biol.,* 8(17):675-81.

Kenealy T, Arroll B. 2013. Antibiotics for the common cold and acute purulent rhinitis. *Cochrane Database Syst Rev.,* 6:CD000247.

Khan S, Shehzad A, Shehzad O, Al-Suhaimi EA. 2013. Inpatient antibiotics pharmacology and physiological use in Hayatabad medical complex, Pakistan. *Int J Physiol Pathophysiol Pharmacol.,* 5:120–7.(PMC free article) (PubMed)

Kunin CM, Liu YC. 2002. Excessive use of antibiotics in the community associated with delayed admission and masked diagnosis of infectious diseases. *J MicrobiolImmunol Infect.,* 35:141–6. (PubMed)

Remesh A, Gayathri AM, Singh R, Retnavally KG. 2013. The knowledge, attitude and the perception of prescribers on the rational use of antibiotics and the need for an antibiotic policy-a cross sectional survey in a tertiary care hospital. *J ClinDiagn Res.,* 7:675–9. (PMC free article) (PubMed)

Simpson SA., Wood F., Butler CC. 2007. General practitioners' perceptions of antimicrobial resistance: a qualitative study. *Journal of Antimicrobial Chemotherapy.* 59:292–96. (PubMed)

Wright EP, Jain P. Survey of antibiotic knowledge amongst final year medical students. J AntimicrobChemother. 2004;53(3):550-1.

****