A KAP Study Regarding Anti Microbial Resistance Among Medical Students In South India

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Abstract:
Introduction: *Antimicrobial resistance or drug resistance is the ability of a microorganism (like bacteria, viruses and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarials) from working against it. As a result, standard treatments become ineffective, infections persist and may spread to others. Inappropriate use of antimicrobials drives the development of drug resistance. Both overuse, underuse and misuse of medicines contribute to the problem.Irrational use of medicines is a major problem worldwide. The present study was under taken with the objectives to study the Knowledge, Attitude and Practice (KAP) associated with Anti Microbial Resistance (AMR) among Medical students.*
Methodology: *Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation is the selected Medical College. It is located in Gannavaram, Krishna district, Andhrapradesh, India. Sample size of 150 medical students were choosen randomlyfor this study.*
Results: *Out of the 150 participants,74% of study subjects were female, Majority of the participants (66.7%) were of urban origin, and 94% of their parents are educated. 96%of study participants have knowledge of Anti Microbial Resistance (AMR). But Only 70.7% of study participants consulted qualified doctor and 68.7% purchased and taken full course of antibiotics during their last episode of sickness.Majority of female medicos(76.6%) consulted qualified doctor than male medicos (53.8%) and it was statistically significant. Students significantly preferred parents & relatives(65.30%)than patients(31.30%) regarding health education of AMR even though majority of them familiar with this concept.*
Conclusions: *As Medical students are role Models in the society, there is huge responsibility on their shoulders. With the acquired knowledge they should first change their attitude and should consult qualified doctor during sickness and should practice taking complete course of antibiotics / antimicrobials as per the norms.*

I. Introduction

Antimicrobial resistance (AMR) is an increasingly serious threat to global public health. AMR develops when a microorganism (bacteria, fungus, virus or parasite) no longer responds to a drug to which it was originally sensitive[1].Antimicrobial resistant bacteria have negative impact on treatment outcomes such as prolonged morbidity, hospital stay and increased risk of mortality[2].Therefore, AMR results in increased health care costs and financial burden to families andsocieties[3]. Antimicrobial resistance problem is challenging in low-income countries because of high prevalence of infection, irrational uses of antimicrobials, over-the-counter availability of antibioticsand lack of clinical microbiology laboratories for antimicrobial susceptibility testing[4]. Irrational use of medicines is a major problem worldwide. WHO estimates that more than half of all medicines are prescribed, dispensed or sold inappropriately, and that half of all patients fail to take them correctly[5].The prevalence of self-medication among medical students is high, facilitated by the easy availability of drugs and information from textbooks or seniors, due to high level of education and professional status are predictive factors for self-medication[6].

According to the study conduted by the author majority of non teaching staff working in a tertiary care center did not have any knowledge about Antibiotics and Anti Microbial Resistance (AMR) and did not take full course of Antibiotics[7]. Inappropriate use of antimicrobials drives the development of drug resistance. Both overuse, underuse and misuse of medicines contribute to the Problem.

Hence the study conduted to know whether the Medical Students familiar with AMR and if they so what was their attitude towards taking Antimicrobials and their practice of educating both parents and patients.

II. Objectives

1. To assess the knowledge of Medical students regarding AMR.
2. To study the attitude and practice of medical students in seeking health services from qualified doctor and in taking full course of antibiotics
3. To know whether Medical students health educating their parents and patients regarding AMR.

III. Methodology

Study area: This cross-sectional study was undertaken in Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation, Gannavaram, Andhrapradesh, India, with approval from the Institutional Ethical Committee.

Study design and population: The study population consisted of medical students from second to final year. Students were selected for the study by a simple random sampling method. The participants were briefed about the nature of the study, consent was taken and a pre-tested structured questionnaire administered to them.

Data collection and analysis: A structured interview questionnarie was designed as data collection instrument . Questionnaire was submitted for institutional ethical comittee approval. Other necessary permission seeked from the higher authorities. The objectives of the study, confidentiality of the research and other ethical considerations mentioned in the interview guidelines were explained for every interviewee. After explaining these, every respondent was asked for his or her willingness to participate in the study. This process helped in the standardization and uniformity of the data collection.

Data entered into the Statistical package for social sciences (SPSS) software and analyzed using this software. Results represented in the form of percentages.

IV. Results

Table-1: Demographic profile of medical students

Gender	Frequency	Percent
Male	39	26
Female	111	74
Native	**Frequency**	**Percent**
Rural	50	33.3
Urban	100	66.7
Head of the family	**Frequency**	**Percent**
Educated	141	94
Uneducated	9	6
Total	**150**	**100**

Majority of the participants are female medical students and are of urban origin born to educated parents.

Table-2: Response of medical students during their last episode of sickness by gender

Gender	During Sickness			Total
	Consulted Doctor	Consulted Pharmacist	Wait and watch policy	
Male	21	10	8	39
	53.80%	25.60%	20.50%	100.00%
Female	85	7	19	111
	76.60%	6.30%	17.10%	100.00%
Total	106	17	27	150
	70.70%	11.30%	18.00%	100.00%
Chi-square value=11.81 df=1 p<0.01 Highly Significant				

During last episode of illness majority of participants consulted qualified doctor only (70.7%). It is statistically significant that during the last episode of sickness majority of female medicos consulted doctor when compared to males.

Table-3: General attitude and practice of medical students during sickness

In case of Pharmacy utilization	Frequency	Percent
With old prescription	50	33.3
With own knowledge	37	24.7
Seniors / Friends advise	47	31.3
Pharmacist advise	14	9.3
Home medication	2	1.3
Purchase and usage of Antimicrobials	**Frequency**	**Percent**
Purchased and taken full course	103	68.7
Purchased but not taken full course	40	26.7
Purchased and taken incomplete course	5	3.3
Not purchased and not taken full course	2	1.3
Total	**150**	**100**

In general 33.3% were using old prescription and 31.3% were follwing advise of seniors and friends to buy medicines but only 68.7% of participants purchased and took full course of antibiotics.

Table-4: Medical students with knowledge and sharing information regarding AMR

Knowledge on AMR	Frequency	Percent
Yes	144	96
No	6	4
Sharing information to Parents	**Frequency**	**Percent**
Yes	98	65.3
No	52	34.7
Sharing information to Patients	**Frequency**	**Percent**
Yes	47	31.3
No	103	68.7
Total	**150**	**100**

Eventhough majority (96%) of the participants know the concept of AMR, 65.3% shared it with their parents and only 31.3% cautioned patients about AMR.

Table-5: Gender distribution in respect to sharing of information regarding AMR

Gender of medical student	Patients		Total
	Yes	**No**	
Male	17	22	39
	43.60%	56.40%	100.00%
Female	30	81	111
	27.00%	73.00%	100.00%
Total	47	103	150
	31.30%	68.70%	100.00%
Chi-square value=3.8 df=1 p<0.05 Significant			

It is statistically significant that more male medical students cautioned patients regarding AMR.

Table-6: Health education of parents Vs patients by Medical students

Parents	Patients		Total
	Yes	No	
Yes	43	55	98
	28.70%	36.70%	65.30%
No	4	48	52
	2.70%	32.00%	34.70%
Total	47	103	150
	31.30%	68.70%	100.00%
Chi-square value=20.66 df=1 p<0.01 Highly Significant			

It is statistically significant that more no.of medical students sharing knowledge regarding AMR to their parents (65.30%) and relatives only but not to the patients(31.30%). Approximately 1/3rd of students (32%) not sharing this information to neither parents nor patients.

V. Discussion

There were many studies indicating high self medication patterns among medical students in India[8] and in abroad[9] in comparision with knowledge, attitude and practice (KAP study) regarding anti microbial resistance (AMR).In our study majority of students were female by gender (74%). 70.70% of students consulted qualified doctor specifically during their last episode of illnessand more female students (76.6%) did it than male students(53.80%) .In our study it was found that more male students (25.6%) practice self-medication than female students (6.3%). This differs from a previous study conducted among medical students, which showed a greater prevalence among female students (45%) than male students (44%)[10].Unfortunately only 68.7% of medical students took full course of antibiotics even though 96% of medical students know about the concept of AMR. Our study revealed that medial students preferred parents & relatives (65.30%) than patients (31.30%) for health education regarding AMR.Signcanificantly male students (43.6%) took active part in the health education of patients than female students (27%).

VI. Conclusion

The threat from anti microbial resistance is increasing. There is a need for urgent action; everyone can play a part. The complex problem of drug resistance requires collective action. Medical students had better knowledge about AMR but lacked the appropriate attitude and practice related to it. As Medical students are role Models in the society, there is huge responsibility on their shoulders. With the acquired knowledge they should first change their attitude and should consult qualified doctor during sickness and should practice taking complete course of antibiotics / antimicrobials as per the norms. Role of medical student will be justified if he/she shares equally the knowledge acquired to all.

References

[1].   Antimicrobial resistance: global report on surveillance 2014, WHO.
[2].   World Health Organization: Combat drug resistance. WHO; 2011:1–2. http://www.who.int/world-health-day/2011/en/.
[3].   Qavi A, Segal-Maurer S, Mariano N, Urban C, Rosenberg C, Burns J, Chiang T,Maurer J, Rahal JJ: Increased mortality associated with a clonal outbreak of ceftazidime-resistant Klebsiella pneumoniae: a case–control study.Infect Control Hosp Epidemiol 2005, 26:63–68.
[4].   Vila J, Pal T: Update on antimicrobial resistance in low-income countries: Factors favouring the Emergence of resistance. Open Infect Dis J 2010,4:38–54.
[5].   Facts on antimicrobial resistance; W.H.O 2011 World Health Day
[6].   M.Venkateswarlu,M. A. Mushtaq Pasha,Isaac Ebenezer,Afsar Fatima; a study on self medication patterns among medical students in santhiram medical college, nandyal: 10.14260/jemds/2014/3767
[7].   Dr Bharani krishna Y, Hanumanth N, poojitha G;A study of self-medication patterns and drug use behavior in non-teaching staff working in a tertiary care center ; Valley international journals; Vol 2, issue 2, pg:730-735
[8].   Sanjeev Badiger, Rashmi Kundapur, Animesh Jain, Ashwini Kumar et al Self-medication patterns among medical students in South India; AMJ 2012, 5, 4, 217 – 220.
[9].   Syed Nabeel Zafar1, Reema Syed2, Sana Waqar3 et al; Self-medication amongst University Students of Karachi: Prevalence, Knowledge and attitudes; J Pak Med Assoc, Vol. 58, No. 4, April 2008
[10].   James H, Handu SS, Khalid AJ, Khaja A, Otoom S, Sequeira RP. Evaluation of the knowledge, attitude and practice of self-medication among first-year medical students. Med Princ Pract. 2006; 15: 270–275.