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DENGUE FEVER;

KNOWLEDGE AND PRACTICES OF PREVENTIVE MEASURES AMONG STUDENTS OF BAHAWALPUR CITY, PAKISTAN

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ABSTRACT… Objective: To assess the knowledge and practice of preventive measures against dengue fever among medical students of Quaid-e-Azasm medical college and engineering students of Islamia university, Bahawalpur. **Design:** Cross sectional descriptive study. **Period:** September 2012 to December 2012. **Setting:** Quaid-e-Azam Medial College and Engineering wing of Islamia University Bahawalpur. **Material and method:** Sample size calculated for study by expecting prevalence of knowledge 78%[8] in population of 1000 in each group with 5% margin of error and at 95% confidence interval was 263; by adding 10% response error sample became 290 for each population. Individuals for study were selected by simple random sampling and interviewed by using preformed questionnaire. Obtained data was analyzed by using SPSS version 11. For categorization of knowledge and preventive practices against dengue fever into good, satisfactory insufficient and poor scoring was done. **Results:** knowledge of protective measures against dengue fever was found significantly better among medical than engineering group ($p<.000$). Knowledge of personal protective measures against dengue fever was adequate i.e. more than 90% in both groups had knowledge. Knowledge regarding environmental protective measures as screening and spraying of rooms was adequate i.e. >85% while this knowledge with regard to covering of collected water, disposal of broken bottles and tins, daily change of water in room cooler and space spray was 50% or less. However, knowledge of biological control for mosquito breed with regard to use of snail was very poor i.e. 20% or less. As for as the practices of preventive measures were concerned both groups had no significant difference which were very poor in all aspects except screening of rooms which was more than 90%. **Conclusions:** There is dire need for improvement in both knowledge and practices of preventive measures against dengue fever among students and general population.

Key words: Dengue fever, knowledge, preventive practices, Medical Students

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INTRODUCTION

Dengue fever is escalating health problems throughout the world with increasing mortality and morbidity[1]. Climatic changes increase its endemicity 30 fold with increasing geographical expansion to new countries, from urban to rural settings from last 50 years[2]. Annually about 50 million dengue infections are estimated and 2.5 billion people live in dengue endemic countries[3,4]. Pakistan is one of the victims of dengue since 1994[5]. One factor contributing to rapid epidemic spread is ignorance of people about spread of disease and its protection. It has significant health, economic and social burden especially among countries with inadequate water supply and solid waste infrastructure[6].

Currently possible primary prevention of dengue fever is only with vector control strategy and personal protection from the bites of infected mosquitoes. In 2011, dengue epidemic hit Pakistan, especially Lahore, spreading to the whole Punjab province with 21115 cases and 300 deaths. The resulting panic stemmed from lack of information and practices of preventive measures against dengue fever[7]. In order to prevent further

spread of dengue, this study was conducted to assess the level of knowledge and practices of preventive measures against dengue fever in medical students of Quaid-e-Azam medical college and engineering students of Islamia University Bahawalpur.

METHODOLOGY

It was cross sectional descriptive study conducted on hostel resident students of Quaid-e-Azam medical College, and Engineering wing of Islamia University Bahawalpur from September to December 2012. Expecting the prevalence of knowledge 78%[8] in approximately a population of 1000 in each group with 5% margin of error, and at 95% confidence interval a sample of 263 was calculated; by adding 10% response error sample became 290 for each population.

Study included two different settings of population. List of all hostilities students was taken from warden office of both study population and by simple random sampling 290 students from each population were selected and interviewed through predesigned, pretested questionnaire after taking verbal consent from each respondent by researchers.

Questionnaire was coded and analyzed by using SPSS version 11. Frequency tables were formed and simple percentages were calculated. Categorization of good, satisfactory, insufficient and poor, for knowledge and preventive practices against dengue fever scoring is done. As for as knowledge is concerned total thirteen questions were asked for scoring purpose each question was given 2 marks for answer yes and one for no. Total score were 39 and categorization was done as score in between 28-39 = good, 19-27 = satisfactory, 10-18 = insufficient and 1-9 was taken as having poor knowledge. Similarly seven questions regarding preventive practices were asked and out of total 21 scores, practices were categorized as 16-21 = good, 11-15 = satisfactory, 6-10 = insufficient and between 1-6 was taken as having poor practices of preventive measures against dengue fever. Total score for knowledge and practice were calculated and comparison between both study groups was done by using chi square as test of significance.

RESULTS

A total of 580 individuals (290 of each population group) were approached for interview. Response rate of the study was 100%, no decline of participant in the study. Table I showed comparison of knowledge regarding prevention against dengue fever by using set of questions of three categories i.e. personal protection, environmental prevention and biological control used as preventive measure for mosquito breed. Only 60% & 45% medical and engineering students know covering of collected water as preventive measure. On asking daily change of water in room cooler only 30% & 28% medical & engineering students know it as a preventive measure. Small percentage 20%, 15% among medical and engineering students know snail is used for prevention of mosquito breed. Based on cumulative scoring medical students accounted for 116(40%) good, 81(27%) satisfactory, 58(20%) insufficient and 35(12%) poor while engineering students accounted for 58(20%) good, 72(25%) satisfactory, 108(37%) insufficient and 52(18%) poor knowledge as shown in table III.

The practice section of questionnaire contained questions that assessed the usage of preventive interventions. Table II showed that among the respondents only less than 10% use the repellents, no one was sleeping under nets and use of full sleeves and trousers was also less. Habit of room spraying, proper disposal of broken bottle and tins was at very negligible level. Both study groups are not in habit of daily changing of water in room cooler. On cumulative scoring practice among both study groups was almost same so there was no statistical difference between two groups (table IV).

DISCUSSION

Our study revealed that majority of study group heard about the personal protective measures and both categories of population had good knowledge (90% & 95%) while in study conducted in Karachi among adults of high and low

Knowledge of prevention	Medical (n=290)		Engineering (n=290)	
	Number	%age	Number	%age
Personal Protection				
Use of Repellents	261	90%	249	86%
Sleeping under nets	261	90%	267	92%
Use of full sleeves & long trousers	267	92%	267	92%
Environmental Preventive Measures				
Spraying of rooms	267	92%	272	94%
Screening of rooms	284	98%	284	98%
Leveling of ground	261	90%	246	85%
Covering of collected water	174	60%	130	45%
Disposal of broken bottles & Tins	166	57%	72	25%
Daily change of water in room coolers	87	30%	81	28%
Fogging & Space spray	166	57%	145	50%
Biological Control for mosquito breed				
Any fish	174	60%	116	40%
Genetic	174	60%	188	65%
Snail	58	20%	43	15%

Table-I. Knowledge regarding prevention against dengue fever

Practices of preventive measures	Medical (n=290)		Engineering (n=290)	
	Number	%age	Number	%age
Personal Protection				
Use of Repellents	29	10%	23	8%
Sleeping under nets	-	-	-	-
Use of full sleeves & long trousers	130	45%	116	40%
Environmental				
Spraying of rooms	29	10%	23	8%
Screening of rooms	267	92%	261	90%
Disposal of broken bottles & Tins	06	02%	06	2%
Daily change of water in room coolers	-	-	-	-

Table-II. Practices of preventive measures against dengue fever

	Good		Satisfactory		Insufficient		Poor		Total	
Medical	116	40%	81	27%	58	20%	35	12%	290	100%
Engineering	58	20%	72	25%	108	37%	52	18%	290	100%
Total	174	30%	153	26%	266	29%	87	15%	580	100%

Table-III. Knowledge regarding prevention against dengue fever

P<0.000 *Significant* *X^2 value = 38.245*

	Good		Satisfactory		Insufficient		Poor		Total	
Medical	07	2%	34	12%	101	35%	148	51%	290	100%
Engineering	06	2%	35	12%	104	36%	145	50%	290	100%
Total	13	2%	69	12%	205	35%	293	51%	580	100%

Table-IV. Practices of preventive measures against dengue fever

P-value = 0.166 *Not-significant* *X^2 value = 0.938*

socioeconomic population knowledge was >55%[1], 78% knowledge in study conducted in urban slum area of south India[8] and 49.7% population had knowledge in residents of Westmoreland Jamaica[9]. In our study high knowledge may be due to literate personals of study population.

Knowledge regarding the environmental protective measures i.e. daily change of water in room coolers(30% & 28%), covering of water containers (60% & 45%), disposal of broken bottles and tins(40% & 25%) and fogging and space spray was (40% & 50%) among medical and engineering students respectively, knowledge was low i.e. 52%, 45%, 63% and 31% respectively[10] as in study conducted in Northern Thailand, while in study conducted among junior health workers in PHC,s of BelgamTaluka 49% had knowledge of changing water in room cooler, knowledge of covering water container was 39%, disposal of broken bottles was 63% and 31% had knowledge of spraying[11]. Knowledge regarding the biological control of dengue vector i.e. use of fish was 60% in medical and 40% among engineering students, knowledge of genetic control was 60% & 65% and use of snail for control was very poor, i.e. 20%& 15% respectively while knowledge of use of fish that prey on mosquito larvae was rare in study conducted in Karachi[12].

Practices regarding the personal protective measures among study groups was very poor, about 90% study group don't use repellents, 100% study population don't sleep under nets and 55-60% population don't wear full sleeves and long trousers for prevention of bite of mosquito, similarly in another study conducted in Karachi, 78% of population don't use repellents, 75% of population don't sleep under nets and 90% of population don't cover their body with clothes[1]. On assessment of environmental protection, 90-92% don't use insecticide spray in their room as in study conducted in Yokohama city in which only 8% of population was using insecticide spray in their rooms[13]. More than 95% don't dispose of broken bottle and tins properly. 100% study group didn't change water in room cooler, findings run contrary to the findings in study done in rural area of Sao Paulo, Brazil[14]. Practices of preventive measures among our study population were very poor that may be due to the reasons that both study groups are residing in hostels and due to careless attitude of the study population as they were belonging to younger age group.

CONCLUSIONS

There is need to improve the knowledge among professional students as well as general population. Our finding showed that the information regarding the preventive measures either personal or environmental are not lacking in some aspects, it may be due to both groups were educated. But there was no difference among practices of personal as well as environmental measures, it may be due to the attitude of students or may be the cost of employing these strategies or the importance of disease and its complications was not taken seriously. Both groups were residing in hostels provided by government so those were well screened. Further researches may be conducted to find out the gaps between knowledge and action to seek the ways for protection among population.

RECOMMENDATIONS

1. Dengue awareness campaigns must be carried out at school, college and general population level.
2. Mass media and seminars must also play an important role in conveying health information.
3. Adoption of mosquito control was poor so barriers to action must be found out and proper education, information and communication must be improved to remove the barriers.
4. Strengthening of surveillance along with the training of health personals can go long way in control of dengue infection.

LIMITATIONS

It only focused a small literate group of similar knowledge who reside in similar atmosphere which is provided by the Government so generalizability of the study to whole population is difficult.

REFERENCES

1. Syed M, Saleem T, Syeda UR, Habib M, Zahid R, Bashir A, et.al. **Knowledge attitude and practices regarding dengue fever among adults of high and low socioeconomic groups.** J Pak Med Assoc. 2010;60:243-47.
2. Guzmán MG, Kourí G. **Dengue: an update.** Lancet Infect Dis. 2002;02:33-42.
3. Ahsan T. **Dengue fever: a regular epidemic?** J Pak Med Assoc.2008;58:1-2.
4. Porter KR, Beckett CG, Kosasih H, Tan RI, Alisjahbana B, et al. **Epidemiology of dengue and dengue hemorrhagic fever in a cohort of adults living in Bandung, West Java, Indonesia.** Am J Trop Med Hyg. 2005;72:60-6.
5. Hasan u, Loya A, Mehmod TM, Nazeer H and Sultan F. **Dengue fever outbreak in Lahore.** JCPSP 2013; 23(3):231-33.
6. **Dengue guidelines for diagnosis, treatment, prevention and control. France.** World health organization;2009:13.
7. Shamim M. **Frequency, pattern and management of acute abdomen in dengue fever in Karachi, Pakistan.** Asian J Surg.2010;33:107-13.
8. Jogand SK, Yerpude NP. **The community knowledge and practices regarding dengue fever in an urban slum area of south India.** Peoples journal of scientific research. 2013;6(1):13-15.
9. Shuaib F, Todd D, Ehiri J, Jolly PE. **Knowledge, attitude and practices regarding dengue infection in Westmoreland Jamaica.** West Indian Med J. 2010;59(2):139-46.
10. Benthem BHB, Khantikul N, Panarat K, Kessel PJ, Somboon P, Oskam L. **Knowledge and use of prevention measures related to dengue in northern Thailand.** Tropical medicine and international health. 2002;7:993-1000.
11. Kakade RN. **Study to determine the knowledge and practices regarding prevention of dengue fever among the junior health workers working in the PHC,s of Belgaum Taluka.** IOSR-JPBS. 2012;3(6):19-24.
12. Itrat A, khan A, Javaid S, Kamal M, Khan H, Kalia S, et.al. **Knowledge awareness and practices regarding dengue fever among the adult population dengue hit cosmopolitan.** Journal pone. 2008;3(7):1-7.
13. Nalongsack S, Yoshinda Y, Morita S, Sosouphanh K and Sakmoto J. **Knowledge attitude and practice regarding dengue among people in Pakse, Laos.** Nagoya J Med Sciences. 2009;71:29-37.
14. Phuanukoonnon S, Brough M, Bryan JH. **Folk knowledge about dengue mosquitoes and contributions of health belief model in dengue control promotion in Northeast Thailand.** Acta Trop 2006;99:6-14.

PREVIOUS RELATED STUDY

Irfan Arshad, Fayyaz Ahmed Malik, Aamir Hussian, Shahida A.R. Shah. DENGUE FEVER; CLINICO-PATHOLOGIC CORRELATIONS AND THEIR ASSOCIATION WITH POOR OUTCOME (Original) Prof Med Jour 18(1) 57-63 Jan, Feb, Mar 2011.