

Awareness Level of Patients Regarding usage of Antibiotics in a Slum Area of Dhaka City, Bangladesh

Dr. Tamal Saha¹ and Tushar Saha²

¹Project Research Physician, International Centre for Diarrhoeal Disease Research, Bangladesh Mohakhali, Dhaka-1212, Bangladesh

²Associate Scientist, Research and Development Department, Square Pharmaceuticals Ltd., Bangladesh.

Abstract

Antibiotics are the most important classes of drugs in Bangladesh and the patients are not aware of it use and thus causing various harmful effects as well as the antibiotic resistance. The aim of the present investigation was to find out the awareness level of slum patients of Dhaka city regarding the usage of antibiotics and also to propose such recommendations after the findings. A cross sectional survey was done for 6 months by a preselected questionnaire. From the survey it was found that, people who are living in the poverty line have a high prone of chance of antibiotic resistance. Again they have no knowledge about antibiotic uptake because of lack of education. They usually use antibiotic without consulting any physicians and do not complete the antibiotic course. On the basis of this, government and other social authorities should come forward to boost up the awareness level of patients. People have to be more educated and government should have to pay a great attention in this issue. The livelihood stock should have to be improved. Physicians have to play important role here. Media coverage is needed to create mass awareness. By ensuring all these issues, it is possible to fight against antibiotic resistance.

Keywords: Antibiotic, antibiotic resistance, awareness.

I. INTRODUCTION

Antibiotics are one of the most important classes of drugs in Bangladesh and up to one third of all the patients receive at least one antibiotic during their hospitalization [1]- [3]. Modern world is very much conscious in using antibiotics but it is not true for developing countries and Bangladesh is facing problems of antibiotic resistance because of the improper use of that. According to a survey, both overprescribing and under prescribing of antibiotics are harmful [4], [5]. Inappropriate use of antibiotics is directly related to the knowledge of the population[6]. Antibiotic prescribing behavior of the healthcare professionals is also responsible. Rational use of

antibiotics is encouraged by WHO through prescription only use of antibiotics and educational measures [7], [8]. Awareness level of patient has a benefit in reducing futile antibiotic prescriptions. By means of that, a survey was conducted in a slum area of Dhaka city, Bangladesh in-order to find out their awareness level regarding antibiotic resistance issues.

II. METHODOLOGY

A cross sectional study was performed in a slum area of Dhaka City by a preselected questionnaire. Patients who buy antibiotics were in the population and patients were selected from the target population within the study. Sample size was calculated by using the formula $N = Z^2 \frac{pq}{d^2}$ where “N” is sample size, “Z” is 95% confidence level, “p” is proportion of the target population with certain characteristics, “q” is proportion of the target population without certain characteristics and “d” is degree of accuracy. Total population of the survey was 131. Dependent variable was the level of knowledge and practice of the antibiotic usage and independent variables were age, sex, education etc.

III. RESULTS

After surveying the following results were obtained which are tabulated in Tables at the last of references.

Table 1.1 shows that the average age of the respondents is 31.27 years, which 55.7% respondents age is to (19-29) years, 24.5% is (30-39) and 6.9% respondents age is 50 years and above. 65.6% respondents are male and 34.4% are female. All of the respondents are Muslim. The table also shows that, highest 35.1% respondents complete higher secondary level, 25.2% complete primary level, 15.3% respondents are illiterate and only 3.1% complete university level. Most of the respondent are married (61.8%), 29.8% are unmarried.

Table 1.2 shows that highest 27.5% respondent's occupation is business, 14.5% is skilled worker (Driver, Garments worker), 13.3% house wife and 8.2% are unemployed. The average monthly income of the respondent is 9864.12 BDT. highest 38.2% respondent income is to (1000-10000). A majority percent (24.4%) respondent have no income.

Table 2.1 shows that 67.2% respondent ever taken antibiotics for any diseases condition.

Table 2.2 shows that respondents those who takes antibiotics; 52.3% don't know the antibiotics name. 11.4% takes ciprofloxin, 9.0% takes cefixm and 8.0% takes amoxicillin.

Table 2.3 shows that highest 21.6% respondent taken antibiotics for the disease of diarrhea, 13.6% for fever and cough, 10% for urinate pain, 6.8% fever, cold and cough, 5.7% for caesarean section delivery, 4% both fever, diarrhea and only fever and the rest of are taken antibiotics for different disease.

Table 2.4 illustrate that 35.1% respondent take antibiotics whose attending expert was doctor's, 17.6% take quacks and 16.0% pharmacist. 56.5% respondent source of prescribed medication was pharmacy, 21.4% was free sampling and 14.5% was others.

Table 2.5 shows that 34.4% respondent take antibiotics on time. Highest 26.0% respondents take antibiotics 1-3 days' duration, 20.6% duration was 4-5 days and 13.7% was 6-7 days. 10.7% respondent always buys the full course of antibiotics and only 19.1% respondents fulfill the course after reliving the symptoms or disease condition.

Table 2.6 illustrate that 60.3% respondents ever heard about antibiotic resistance.

Table 2.7 illustrates that highest 40.5% respondent heard antibiotic resistance from social media, 21.4% from bill board and 17.6% from newspaper.

Table 2.8 shows that 42% respondents know about the causes and harmful effects of antibiotic resistance. Only 8.4% respondent ever checked the antibiotic resistance. 5.3% respondent discuss with physician for antibiotic resistance. Only 6.1% respondents check the antibiotic sensitivity test from government hospital.

Table 3 shows that 59.5% respondents agree strongly people should use antibiotics only when they are prescribed by a physician, 22.1% are agree slightly and 3.1% disagree strongly.

30.5% respondents agree strongly that people should not keep antibiotics and use them later for other illnesses, 22.9% neither agree nor disagree and 4.8% disagree strongly.

77.1% respondents agree strongly the concept of doctors should only prescribe antibiotics when they are needed, 14.5% agree slightly and 1.5% disagrees slightly.

42.7% respondents agree strongly that governments should reward the development of new antibiotics, 40.5% agree slightly and only 3.1% disagree slightly.

36.6% respondents are neither agreeing nor disagree of pharmaceutical companies should develop new antibiotics, 24.4% agree strongly and 3.8% disagree strongly.

And lastly 57.3% respondent agree strongly of parents should make sure all of their children's vaccinations are up-to-date, 29% are agree slightly and only 2.3% are disagree slightly.

IV. DISCUSSION AND RECOMMENDATIONS

Amongst the one hundred thirty-one respondent of zeneva camp of the study reveals 67.2% respondent ever taken antibiotics for any diseases condition. Majority percent of the respondent (52.3%) don't know the antibiotic name, and rest of the respondent said the antibiotic name. Highest 21.6% of the respondent took antibiotic for diarrhea, 13.6% for fever and cough.

However, 35.1% respondents attending expert was doctor, 28 respondents attending expert was quack. Most of the respondents (56.5%) sources of prescribed medication were pharmacy. Only 34.4% respondent had taken the antibiotic on time. Most of the respondents (89.3%) were not always buy the full course of antibiotic and only 19.1% respondent fulfill the course after reliving the symptoms or disease condition. 60.3% respondents ever heard about antibiotic resistance and highest 40.5% respondent heard antibiotic resistance from social media.

Moreover 40% respondents know about the causes and harmful effects of antibiotic resistance and only 8.4% respondent ever checked the antibiotic resistance. Only 5.3% respondent discuss with their physician about antibiotic resistance and only 6.1% patient check the antibiotic sensitivity test from government hospital.

Based on the results found from the survey and literature search, following steps may be taken to solve the problems regarding antibiotic resistance issue-

1. Doctors, nurses, veterinarians and other health workers should not prescribe or dispense antibiotics unless they are truly necessary and should have made all efforts to test and confirm which antibiotic is using to treat patients.

2. People using healthcare should take antibiotics only when prescribed by a certified health professional. If anyone is taking an antibiotic, always complete the full prescription, even if he/she feel better, because stopping treatment early promotes the growth of drug-resistant bacteria.

3. Farmers and others in the agriculture sector should ensure that antibiotics given to animals are used only to control or treat infectious diseases and under veterinary supervision.

4. Governments should take robust national action plans to tackle antibiotic resistance.

5. Compared with populations in industrialized nations, people in low-income countries are not getting fair access to antibiotics. Countries seeking donor should help to strengthen their health systems need guidance to assure essential antibiotics are affordable, reach the people who really need them, and are used responsibly.

6. Industry should move faster and more aggressively to research as well as develop new antibiotics. Again we also have to implement new ways of stimulating research and development.

7. Government should take steps to spread the education and awareness among the people. From the survey, it was found that, patient having low education level have more prone to antibiotic resistance.

8. People should lead a healthy and hygiene life so that antibiotic resistance can be prevented.

9. People should avoid unhealthy food stuffs.

10. Government should take initiative to reward the pharmaceutical companies for developing new antibiotics and also the organizations who are working to fight against antibiotic resistance. It will help to boost the spirit.

11. Newspaper and other media should demonstrate the causes and prevention ways regular interval so that people can aware of this issue.

12. Government can pursue act that, antibiotics should not be sold the person having the age below 18. So that, usages of antibiotics are in safe hand and out of children.

13. The socio-economic condition of people should be improved.

14. Antibiotics should be started from the first generation. Unnecessarily and higher generation of antibiotics have to be omitted.

15. Patients should avoid quack physicians and should go to qualified and authorized physicians or health professional.

16. Government should establish more model pharmacies for better dispensing of good quality of medicines specially antibiotics.

17. Physician should prescribe antibiotic by checking the antibiotic sensitivity test of the patient.

18. Parents should be aware about their children that, their vaccination is up-to-date.

19. Government should take initiative to reward the pharmaceutical companies who are discovering or introducing new antibiotic molecules.

V. CONCLUSION

Antibiotic resistance is one of the biggest problems in current times. From the survey it was clear that, most of the people are not aware of antibiotic resistance and thus why antibiotic resistance is spreading in a lighting speed. Government should take initiative to solve this problem. Again health professionals should be more careful regarding this issue. People have to be more aware so that antibiotic resistance does not occur. Besides government, other national and international NGOs and companies may come forward and take initiative to solve antibiotic resistance problems.

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Table 1.1: Socio-economic-demographic variables

N=131	Response Category	Frequency	Percent	Statistical Tools
1. How old are you?	19-29 years old	73	55.7	Mean=31.27 Std.=10.177 Median=28.00
	30-39 years	32	24.5	
	40-49 years	17	12.9	
	50 years & above	9	6.9	
2. Sex	Male	86	65.6	Mean=1.34 Std.=.477
	Female	45	34.4	
3. Religion	Islam	131	100.0	Mean=1.00 Std.=.000
	Hinduism	-	-	
4. What is your educational qualification?	Illiterate	20	15.3	Mean=3.04 Std.=1.566
	Primary level (1, 2, 3, 4, 5)	33	25.2	
	Secondary level(6, 7, 8, 9,10)	24	18.3	
	Higher secondary (11, 12)	46	35.1	
	University level	4	3.1	
	Others	4	3.1	
5. What is your marital status?	Unmarried	39	29.8	Mean=1.92 Std.=.966
	Married	81	61.8	
	Divorced	2	1.5	
	Widow/Widower	9	6.9	

Table 1.2: Socio-economic-demographic variables

N=131	Response Category	Frequency	Percent	
6. What is your occupation?	House wife	24	13.3	Mean-5.79 Median-6.00 Std.-3.392
	Unemployed	12	9.2	
	Private job	11	8.4	
	NGO job	1	.8	
	Business	36	27.5	
	House hold worker	6	4.6	
	Day labor	3	2.3	
	Skilled worker (Driver, Garments worker)	19	14.5	
	Others (Specify).....	19	14.5	
Total:		131	100.0	
7. Current house hold monthly income	No Income	32	24.4	Mean-9864.12 Median-6000.00 Std.-10104.759
	1000-10000	50	38.2	
	11000-20000	29	22.1	
	21000-30000	20	15.3	
Total:		131	100.0	

Table 2.1: Variables relating awarness level of antibiotic resistance

N=131	Response Category	Frequency	Percent	Mean	Std. Deviation
8. Have you ever taken antibiotics for any diseases condition?	Yes	88	67.2	1.33	.471
	No	43	32.8		

Table 2.2: Variables relating awarness level of antibiotic resistance

N=131	Response Category	Frequency	Percent	Mean	Std. Deviation
9. Name of the antibiotic	Don't know	46	52.3		
	Amoxicillin	7	8.0		

	Azithromycin	5	5.7		
	Ciprocin, Ciproflxin	1	1.1		
	Ciproflxin	10	11.4		
	Flucloxin, Sefixm	1	1.1		
	Fluxacilin	2	2.3		
	Livofloxacin	2	2.3		
	cef-3 (cefixm)	5	5.7		
	cef-3, Fluclox	1	1.1		
	cefixm	8	9.0		
Total:		88			

Table 2.3: Variables relating awarness level of antibiotic resistance

N=131	Response Category	Frequency	Percent
10. Reason for taking antibiotic	Fever, cold cough	6	6.8
	Asthma	3	3.4
	Backrest Boil	1	1.1
	Bally pain	1	1.1
	Brest polypus	1	1.1
	Broken bone	3	3.4
	By hand boil	2	2.3
	Caesarean section delivery	5	5.7
	Cough	2	2.3
	Cough, Neck pain	2	2.3
	Diarrhea	19	21.6
	Ducts Deferens Pain	1	1.1
	Fever	4	4.6
	Fever, Cough	12	13.6
	fever, Diarrhea	4	4.6
	Finger Blow	1	1.1
	Hand Chopped	1	1.1
	Hip Boil	1	1.1
	Leg Chopped	2	2.3
	Normal delivery	5	5.7
Ovarian tumor operation	1	1.1	
Teeth pain	2	2.3	
Tonsillitis	1	1.1	
Urinatate pain	8	10.0	
Total:		88	100.0

Table 2.4: Variables relating awarness level of antibiotic resistance

N=131	Response Category	Frequency	Percent	Mean	Std. Deviation
11. Who was the attending expert?	Doctor	46	35.1		
	Paramedics	7	5.3		
	Pharmacist	21	16.0		
	Quack	28	17.6		
	Others	4	3.1		
12. What was the source of prescribed medication?	Pharmacy	74	56.5		
	Free sampling	28	21.4		
	Others	19	14.5		

Table 2.5: Variables relating awarness level of antibiotic resistance

N=131	Response Category	Frequency	Percent	Mean	Std.
13. Did you take the antibiotic on time?	Yes	45	34.4	1.14	.503
	No	43	32.8		
14. How long do you continue the antibiotic	1-3 days	34	26.0	2.08	1.137
	4-5 days	27	20.6		
	6-7 days	18	13.7		
	8-10 days	4	3.1		
	11-14 days	5	3.8		
15. Do you always buy the full course of antibiotics?	Yes	14	10.7	1.89	.310
	No	117	89.3		
16. Do you fulfill the course after reliving the symptoms or disease condition?	Yes	25	19.1	1.81	.394
	No	106	80.9		

Table 2.6: Variables relating awarness level of antibiotic resistance

N=131	Response Category	Frequency	Percent	Mean	Std.
17. Have you ever heard about antibiotic resistance?	Yes	79	60.3	1.40	.491
	No	52	39.7		

Table 2.7: Variables relating awarness level of antibiotic resistance

N=131	Response Category	Frequency	Percent	Mean	Std.
18. If yes, then what was the source?	Physician	17	13.0		
	Newspaper	23	17.6		
	Television	12	9.2		
	Social Media	53	40.5		
	Bill board	28	21.4		
	Others	20	15.3		

Table 2.8: Variables relating awarness level of antibiotic resistance

N=131	Response Category	Frequency	Percent	Mean	Std.
19. Do you know about the causes and harmful effects of antibiotic resistance?	Yes	55	42.0	1.58	.495
	No	76	58.0		
20. Have you ever checked the antibiotic resistance of yours?	Yes	11	8.4	1.92	.278
	No	120	91.6		
21. If yes, then what was the result?	Yes	6	4.6	2.09	2.343
	No	4	3.1		
	Don't know	1	.8		
22. If resistant, then did you discuss with your physician with that?	Yes	7	5.3	1.0	.000
	No	124	94.7		
23. From where did the patient check the	Government Hospital	8	6.1	1.20	.422

antibiotic sensitivity test?	Private Hospital	2	1.5		
24. List of drugs according to culture sensitivity.	Ampicillin	3	2.3		
	Amoxicillin	2	1.5		
	Ciprofloxacin	1	.8		
	Gentamycin	1	.8		
	Others	5	3.8		

Table 3: On the scale shown, how much do you agree the following actions would help address the problem of antibiotic resistance? (WHO scale)

Questions/ Statement	Agree Strongly (5)	Agree Slightly (4)	Neither Agree nor Disagree (3)	Disagree Slightly (2)	Disagree Strongly (1)
25. People should use antibiotics only when they are prescribed by a physician	78(59.5%)	29(22.1%)	9(6.9%)	11(8.4%)	4 (3.1%)
26. People should not keep antibiotics and use them later for other illnesses	40(30.5%)	22(16.8%)	30(22.9%)	28(21.4%)	11(8.4%)
27. Doctors should only prescribe antibiotics when they are needed	101(77.1%)	19(14.5%)	9(6.9%)	2 (1.5%)	-
28. Governments should reward the development of new antibiotics	56 (42.7%)	53 (40.5%)	18 (13.7%)	4 (3.1%)	-
29. Pharmaceutical companies should develop new antibiotics	32 (24.4%)	23 (17.6%)	48 (36.6%)	23 (17.6%)	5 (3.8%)
30. Parents should make sure all of their children's vaccinations are up-to-date	75 (57.3%)	38 (29.0%)	15 (11.5%)	3 (2.3%)	-