



Practice of Antibiotics Consumption among Residents in Lagro, Quezon City

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ABSTRACT

Objectives: This study aimed to assess the practice of community residents in Greater Lagro, Quezon City, on antibiotics consumption. Methodology: A questionnaire-based survey was conducted on 340 residents in Greater Lagro, Quezon City, Philippines, whereby their practices regarding antibiotic use was assessed by using a five point Likert scale, whose responses ranged from "strongly agree" to "strongly disagree" and "always" to "never." A self-made validated survey instrument was used. [Practices-self-medication: $\alpha = 0.83$ (Good); Practices- Doctor's prescription: $\alpha = 0.682$ (Acceptable)] Simple descriptive statistics was then applied, particularly the use of mean. Findings: The study showed that the respondents were uncertain that they could get trustworthy information about antibiotics from doctors and pharmacists and were also uncertain if expensive antibiotics are more effective than the cheaper ones. Alarmingly, malpractices such as non-compliance to complete antibiotic therapy for seven days, not discarding the leftover antibiotics, and giving away leftover antibiotic drugs were noted. These practices could contribute to antibiotic resistance. Conclusion: The misuse of antibiotics and the development of antibiotic resistance are fundamental public health problems, and necessary plans and actions to combat these should be taken into action immediately.

Keywords: Antibiotics; Antibiotic Resistance

INTRODUCTION

Antibiotic resistance pertains to the resistance of bacteria to antibiotics that are used to treat the infections they cause. Antimicrobial resistance (AMR) is a broader term that pertains to the ability of microbes, such as bacteria, fungi, viruses, or parasites to grow despite the presence of antimicrobials that normally kill or inhibit their growth, rendering these drugs ineffective against previously treatable infections.

Mechanisms underlying microbial resistance to cell wall synthesis inhibitors involve the production of antibiotic-inactivating enzymes, changes in the structure of target receptors, increased efflux via drug transporters, and decreases in the permeability of microbes' cellular membranes to antibiotics.

The 2014 report of World Health Organization (WHO) on global surveillance of antimicrobial resistance revealed that antibiotic resistance is no longer a prediction for the future; it is happening right now, across the world, and is putting at risk the ability to treat common infections in the community and hospitals. Without urgent and coordinated action, the world is heading towards a post-antibiotic era, in which common infections and minor injuries, which have been treatable for decades, can once again kill (WHO, 2015).

When infections become resistant to first-line drugs, more expensive health care is needed. The inappropriate use of antibiotic drugs, including in animal agriculture, favors the emergence of resistant strains, and poor infection prevention and control practices contribute to further emergence and spread of antibiotic resistance.

Because of this emerging and local threat of antibiotic resistance, Malacanang issued Administrative Order No, 42 series of 2014 entitled “Creating an Inter-agency Committee for the Formulation an Implementation of a National Plan to Combat AMR in the Philippines, wherein the Department of Health and the Department of Agriculture are to act as the co-chairs. The bigger problem that the humankind has to face now is to continue designing strategies to combat antibiotic resistance. This includes the use of antibiotic combinations, the introduction of new (and often expensive) antibiotics, and efforts to avoid the misuse and abuse of antibiotics. Therefore, the researcher aimed to go to the basic, which is to assess the consumers’ practices that lead to antibiotic resistance, in the area of Greater Lagro, Quezon City, Philippines.

MATERIALS AND METHODS

Respondents

The study involved adult residents of Greater Lagro, Quezon City, Philippines. A sample of 340 respondents was used in the research.

Sampling technique

Systematic sampling technique was employed.

Instruments used

A self-made questionnaire survey instrument was employed to assess the respondents’ practices to antibiotics leading to antibiotic resistance. The series of questions were analyzed by using a 5-point Likert scale, whose responses ranged from “strongly agree” to “strongly disagree” and “always” to “never”. A Filipino translation was also included on the questionnaire in order for the respondents to understand each question easily.

Validation of instrument

Prior to the study, the questionnaire was validated by subject experts for its content and relevance. To attain a high degree of validity, a dry-run was conducted. Pre-testing was done on 20 respondents who were not included in the study. Internal consistency was evaluated using Cronbach’s alpha. [Practices-self-medication: $\alpha = 0.83$ (Good); Practices- Doctor’s prescription: $\alpha = 0.682$ (Acceptable)]

Data Gathering Procedure

On the day of the survey, the researcher gave the respondents a survey questionnaire with the assurance that all answers would be treated with confidentiality. No time limit was given for the respondents to ensure careful response to each question. The researcher attended to respondents in answering the questions that seemed unclear to them. To attain high percentage of returns, the researchers personally distributed the questionnaire. Questionnaires were then retrieved from the respondents as soon as they finished answering.

Statistical tool

Simple descriptive statistics was applied which include percentage, mean, and standard deviation.

RESULTS

The response rate was 100% among the 340 respondents who participated in the survey. The results are tabulated in Table 1 and Table 2

Table 1: Assessment of Self-Medication Practices on Antibiotics

Questions	Mean	Verbal Interpretation
1. I take antibiotics when I have colds.	2.68	UNDECIDED
2. Antibiotics help me get better when I have a fever.	2.76	UNDECIDED
3. I skip doses when I forget to take my antibiotics.	2.98	UNDECIDED
4. I get trustworthy information about antibiotics from a doctor.	1.74	SOMEWHAT AGREE
5. I get trustworthy information about antibiotics from a pharmacist.	1.89	SOMEWHAT AGREE
6. Branded antibiotics are more effective than generic ones.	2.69	UNDECIDED
7. Expensive antibiotics are more effective than cheaper ones.	2.58	UNDECIDED
8. I contribute to the development of antibiotic resistance whenever I take an antibiotic.	2.42	SOMEWHAT AGREE
9. Antibiotics can be commonly used because they are safe drugs.	2.83	UNDECIDED

Results in Table 1 showed that the respondents were undecided that when they have colds, they should take antibiotics to prevent from getting a more serious illness (\bar{x} =2.68), undecided that when they get a fever, antibiotics help them to get better more quickly (\bar{x} =2.76), undecided that when they forget to take their antibiotics, they skip doses (\bar{x} =2.98), undecided if branded antimicrobials are better than generic ones (\bar{x} =2.69), undecided if expensive antimicrobials are more effective than cheaper ones (\bar{x} =2.58), and lastly, they were undecided if antibiotics are safe drugs and that they can be commonly used (\bar{x} =2.83). Furthermore, they also somewhat agreed that they could get trustworthy information about antimicrobials from doctors (\bar{x} =1.74) and pharmacists (\bar{x} =1.89) and they somewhat agreed that whenever they take an antibiotic, they contribute to the development of antibiotic resistance (\bar{x} =2.42).

Table 2: Assessment of Doctor's Prescription Practices on Antibiotics

Questions	Mean	Verbal Interpretation
a) I stop taking the antibiotics before the 7-day treatment.	2.29	USUALLY
b) I keep the remaining antibiotics for the next time I get sick.	2.56	SOMETIMES
c) I discard any leftover antibiotic.	2.98	SOMETIMES
d) I give any leftover antibiotics to my family members/friends/relatives.	3.02	SOMETIMES

Table 2 revealed that the respondents usually stop taking the antibiotics before the 7-day treatment (\bar{x} =2.29). Sometimes, they keep the remaining antibiotics for the next time they get sick (\bar{x} =2.56), discard the remaining leftover medication (\bar{x} =2.98), and give the leftover medication to their family members/friends/relatives (\bar{x} =3.02).

DISCUSSION

The study provides useful information about the practices of respondents with respect to antibiotic resistance and usage, which may be utilized to plan suitable educational interventions that aim at improving the antibiotic prescribing and use.

The study showed that the respondents were uncertain that they could get trustworthy information on antibiotics from doctors and pharmacists and also uncertain if expensive antibiotics are more expensive than the cheaper ones. Alarming, poor practices on the use of antibiotics were observed. These include the non-compliance to complete antibiotic therapy for seven days, not discarding of leftover antibiotics, and giving away leftover antibiotic drugs. These malpractices could contribute to antimicrobial resistance.

CONCLUSION

Misuse of antibiotics and the development of antibiotic resistance are public health problems, and necessary plans and actions to combat these should be taken into action immediately. Improvement on the promotion and evaluation of medical practice guidelines, restriction of antibiotic use, and development of new antibiotics are some of the steps required. Above all, the public, health care providers, and leaders are encouraged to change the dynamics on antibiotic usage, and the need to educate the consumers must be a top priority before all antibiotics become ineffective because of antibiotic resistance.

REFERENCES

- [1] Aubrey Nicole Manack, Effectiveness of a Parent-Child Communications Intervention Aiming to Increase Awareness of Antibiotic Resistance and Knowledge of Appropriate Antibiotic Use within a Multi-ethnic Population., **2007**, 37:223–230.
- [2] A Wajja. *National Library of Canada= Bibliothèque nationale du Canada*, **2004**.
- [3] D Didulo, *Diss. SAN DIEGO STATE UNIVERSITY*, **2015**.
- [4] VR Yadav, S Suresh, K Devi, S Yadav. *J Pharm Pharmacol*. **2011**, 61, 311-321.
- [5] JC Seidman. *Diss. Johns Hopkins University*, **2013**.
- [6] LC Parsley. *Diss. Auburn University*, **2010**.
- [7] LSD Taylor. *Diss. East Tennessee State University*, **2001**.
- [8] M Liao. *Diss. University of Saskatchewan*, **2011**.
- [9] M Pogorzelsk. *Diss. Columbia University*, **2011**.
- [10] P Ankomah. *PLoS Pathog*, **2013**, 9.4, e1003300.
- [11] V Hogan-Gow. *Diss. University of Ottawa (Canada)*, **2007**.