

**A Study on Knowledge, Attitudes, and Practices of Livestock
Farmers Regarding Antimicrobial Use in Magura Sadar, Magura**



**A production report submitted in partial satisfaction of the requirement
for the Degree of Doctor of Veterinary Medicine (DVM)**

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A Study on Knowledge, Attitudes, and Practices of Livestock Farmers Regarding Antimicrobial Use in Magura Sadar, Magura



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Contents

List of Figure & Tables	4
List of Acronyms Symbols Used	5
Abstract	6
Chapter 1	
1.Introduction	7
Chapter 2	
2. Materials and Methods	9
2.1 Study area	9
2.2 Study period	9
2.3 Questionnaire design and data collection	9
2.4 Data analysis	10
Chapter 3	
3. Result and Discussion	11
3.1 Demographic characteristics of respondents	11
3.2 Knowledge	13
3.3 Attitude	16
3.4 Practice	19
Chapter 4	
Limitations	23
Conclusion	23
Acknowledgement	24
References	25
Appendix	27

List of Figure

Figure No	Title	Page
Figure 1	Map of Magura Sadar	9
Figure 2	Tabulation of Livestock	13
Figure 3	Percentage of antibiotic recognized People	16
Figure 4	Score of "Attitude" section	16
Figure 5	Results of " Attitude" section	18

List of Table

Table No	Title	Page
Table 1	Tabulation of Age	11
Table 2	Tabulation of Education	11
Table 3	Tabulation of Income/month	12
Table 4	Tabulation of Occupation	12
Table 5	Tabulation of Farming Experience	12
Table 6	Responses to the questionnaire on antibiotic Knowledge	14
Table 7	Responses to the questionnaire on antibiotic Practice	19

List of Acronyms Symbols Used

Abbreviation	Elaboration
%	Percentage
Freq.	Frequency
Cum.	Cumulative
Obs	Observations
Std. Dev.	Standard Deviation
No, N	Number
>	Greater than
KAP	Knowledge, Attitude & Practice
etc.	Et cetera
et. al	And his associate
AMR	Antimicrobial Resistance
AMU	Antimicrobial Use
UVH	Upazila Veterinary Hospital
CVASU	Chattogram Veterinary and Animal Sciences University

Abstract

Antibiotics are medicines that fight bacterial infections in people and animals. This current study aimed at determining knowledge, attitude and practice of antibiotics use and misuse among farmers in Magura Sadar, Magura. Description of such knowledge, attitude and practice could provide insights useful for promoting the rational use of antimicrobials in livestock. A cross sectional study was conducted from 17th February 2022 to 28th April 2022, a survey involving 80 respondents in this area. Most of them (71.25%) didn't aware about AMR. Many respondents didn't maintain the proper dose using antibiotics. Some respondent used antibiotic according to previous prescription. All of respondent threw unused antibiotic in ground. Overall, KAP analysis of antimicrobial usage revealed that most respondents had low levels of antimicrobial knowledge, neutral rather than positive attitudes, and poor antimicrobial usage habits. The findings suggest that KAP improvements may aid in the development of more productive farmer interventions, as well as in the reduction of antibiotic use and the escalation of antimicrobial resistance.

Keywords: Antimicrobial, Livestock, Respondents, Knowledge, Attitude, Practice.

Chapter 1

Introduction

Antimicrobials are medicines used to prevent and treat infections in humans, animals and plants. Human and animal tissue is infected by pathogenic microorganisms by destroying cellular function. Microorganism's toxins or they can damage the host cell. Microbial infection are treated with antimicrobials by either killing or inhibiting the growth of microorganisms (Kırmusaoğlu et al., 2019). Antimicrobial drugs, including antibiotics, antifungals and antiparasitic are used in veterinary medicine all over the world. They are used to treat and prevent diseases in animals, and sometimes in food production to promote growth in healthy animals (Al-Shibani et al., 2017). The extended use of antimicrobials has led to some pathogens becoming resistant and treatment less effective (Dyar et al., 2018). Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death (Manyi-Loh et al., 2018). Over usage of antibiotics, carrying resistance genes in chromosome and plasmids, mutations in the genes, gaining resistance genes carried by transposons, insertion sequences and conjugation from the same or other species of microorganisms cause bacteria develop resistance to antimicrobials (Kırmusaoğlu et al., 2019). Antimicrobial resistance (AMR) has been considered as a major threat to global health (Mogasale et al., 2021). The World Health Organization (WHO) claims that AMR is caused by changes in bacteria, which make drugs less effective and illnesses remain in the body, raising the chance of infection spreading to others. AMR is caused by a variety of factors, including microbiological factors as well as human factors such overuse and overprescribing of antibiotics, agricultural and commercial usage of antibiotics in the animal sector, and the human health sector. AMR makes it more difficult for us to treat common diseases, which lengthens illness times, raises expenses, multiplies complications, and increases the risk of mortality. AMR is anticipated to cause 10 million deaths worldwide by 2050 (Lu et al., 2020). Over the past few decades, both animal and human health sector antimicrobial resistance phenomenon has been increasingly accepted as an important issue imposed a large socio-economic burden. Nowadays, approximate of more than half of all antimicrobials produced globally are used in livestock sector. Farm production produced many resistant bacteria which seem to be an important source spreading

to human by various means, including food chain as well as direct or indirect contacts. Due to weak law enforcement increase overuse of antibiotic, lack of drug-use monitoring and misconceptions regarding appropriate usage are denoted by means of the main contributors in resisted occurrence, especially those are more prevalent in low- and middle-income region, such as South and Southeast Asia countries (Nuangmek et al., 2018). Among all WHO region the southeast Asia is considered to have the highest risk of AMR. Antimicrobial resistance has become an emerging issue in the developing countries as well as in Bangladesh (RoksanaHoque et al., 2020). Antibiotic resistance is a global public health concern because it adversely affects treatment, prolongs morbidity, increases hospital stay, elevates the risk of mortality, and increase medical costs. The complexity of the situation increases when we consider that antibiotic resistance can be caused by various factors, such as medication errors, lack of knowledge, overuse of antibiotic, resistant bacteria emerged in farming sector in public health sector the major reasons behind AMR development is, poor socioeconomic status, overcrowding of patients, Over prescribing and improper selection of antibiotics (Parkunan et al., 2019). Some other factor such as inadequate patient education, limited diagnostic facilities, unauthorized sale of antibiotics, lack of appropriate functioning of drug regulatory mechanisms, and non-human use of antibiotics such as in animal production are responsible for AMR (Nuangmek et al., 2018). Antibiotics are becoming increasingly ineffective as drug resistance spreads globally leading to more difficult to treat infections and death. If people do not change the way antibiotics are used now, these new antibiotics will suffer the same fate as the current ones and become ineffective (Hu et al., 2018). The available studies have all been conducted in the UK, South Africa, New York, India, Thailand, other countries and different region (Chattogram, Cumilla, Gazipur, Cox's Bazar etc.) in Bangladesh. To the best of the authors' knowledge, no research has been done on the KAP characteristics on farmers of Magura Sadar, Magura. As a result, a survey was carried out in Magura Sadar to determine farmer's levels of knowledge, attitudes, and practices regarding the use of antimicrobials in livestock. Accordingly, the study attempted to develop a database served as a baseline and which could provide further insights for planning and developing strategies to promote the appropriate use of antimicrobials and control of antimicrobials resistance emerged in the areas.

Chapter 2

Materials and Method

2.1 Study area: Magura, a small district of Bangladesh situated in the southwest part of the country. The district comprises 4 Upazila (sub-district), among which Magura Sadar was selected for the current study. It has 50,041 households and a total area of 406.5 km². Most of the family is somehow connected to agriculture directly or indirectly. Magura Sadar Upazila is divided into Magura Municipality and 13 Union councils. Magura Municipality is subdivided into 9 wards and 61 mahallas (1991 Bangladesh census). Magura Sadar had a population of 2,86,925. Males constituted 51.41% of the population, and females 48.59%.



Fig – 1: Map of Magura Sadar (Study area)

2.2 Study period: The study was conducted from 17th February 2022 to 28th April 2022. Data was collected during the time of working in the Upazila Livestock office and Veterinary Hospital, Magura Sadar, Magura.

2.3 Questionnaire design and data collection: A questionnaire for this survey was developed by our research group and examined by two expert supervisors. The questionnaire was modified according to the problem we faced during data collection. In the first section of the survey, demographic and socioeconomic information was gathered. 16 questions were in the second section about antibiotic knowledge. 15 questions were in the third section about

attitudes and 16 questions were in the fourth section about practice with case scenarios about antimicrobial use. Within our study period, A total of 90 farmers were approached for data collection based on our questionnaire criteria and of those, 80 (n) agreed to participate in the study which gives a frequency rate of 88.88%. The participants complete the questionnaire of their own. It was a representative sample because they have specific characteristics according to our questionnaire criteria. The respondents were assured that their participation was voluntary and anonymous. The types of response alternatives were yes/no, and open-ended questions. The questionnaire was printed and carried to the UVH for data collection. Data was collected from the farmer who came to UVH for treatment of their sick animal.

2.4 Data Analysis: After collecting, organizing, separating all the information, data was recorded and imported into Microsoft Excel (Microsoft 365 Apps for Enterprise). Descriptive statistics Collected data was calculated and analyzed by STATA Corp STATA MP 16.0_SS_2019.

Chapter 3

Results and Discussions

3.1 Demographic characteristics of respondents: Participants were from 30 villages of Magura Sadar. The participants were >20(0), 20-39(21), 40-59(53), and ≥ 60 (6) years old where their main occupations were 13 types and their education level were Primary (52 – Primary indicates class 1 to 5), Secondary (17 – Secondary indicates class 6 to 10), Higher Secondary (8 – Higher Secondary indicates class 11 to 12). Type of livestock they have Cattle (21 persons), Goats (42 persons), Sheep (3 persons), Chicken (7 persons), Duck (4 persons), and Pigeon (3 persons). In the income section, 21 persons didn't have any income from livestock.

Table-1: Tabulation of Age

Age (year)	Freq.	Percent	Cum.
>20	0	0	0
20-39	26	26.25	26.25
40-59	47	66.25	92.50
≥ 60	7	7.50	100.00
Total	80	100.00	

Table-2: Tabulation of Education

Education	Freq.	Percent	Cum.
Higher Secondary	8	10.00	10.00
No Education	3	3.75	13.75
Primary	51	63.75	77.50
Secondary	17	21.25	100.00
Total	82	100.00	

Table-3: Tabulation of Income/month

Variable	Obs	Mean	Std. Dev.	Min	Max
Income/month(taka)	80	10522	9802.996	800	45000

Table-4: Tabulation of Occupation

Occupation	Freq.	Percent	Cum.
Businessman	13	16.25	16.25
Driver	1	1.25	17.50
Farmer	29	36.25	53.75
Fisherman	2	2.50	56.25
Housewife	25	31.25	87.50
Mason	1	1.25	88.75
Plumber	1	1.25	90.00
Private Employee	3	3.75	93.75
Tailor	3	3.75	97.50
Truck Driver	1	1.25	98.75
Watchman	1	1.25	100.00
Total	80	100.00	

Table-5: Tabulation of Farming Experience

Variable	Obs	Mean	Std. Dev.	Min	Max
Farming Experience(Year)	80	9.613	8.548	1	55

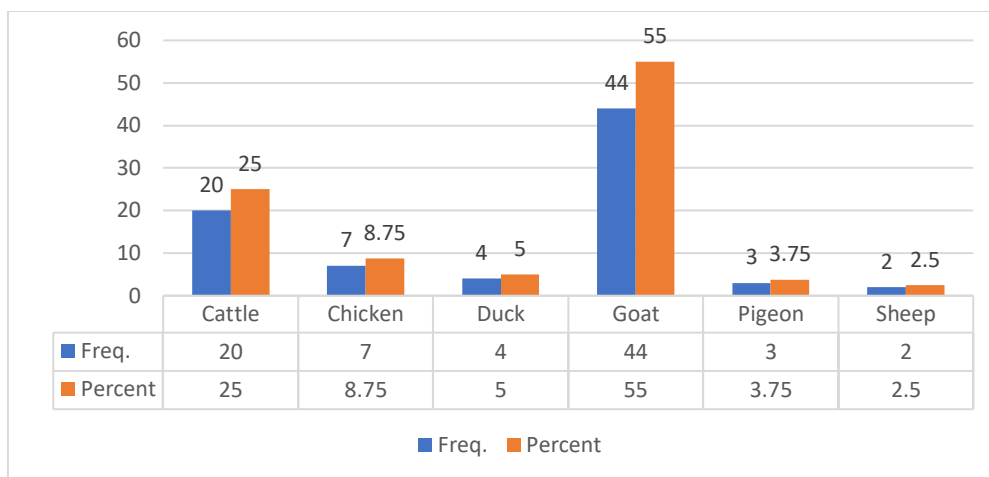


Fig-2: Tabulation of Livestock

3.2 Knowledge: From the survey, it was found that 71.25% of respondents knew about antibiotics and 28.75% respondents didn't know about antibiotics. Some respondents (25%) knew how antibiotic work and 75% of respondents didn't have knowledge about how antibiotic works. A few farmers (28.75%) knew about antibiotic resistance and others (71.25%) didn't know about antibiotic resistance. It indicated that they have less knowledge about antibiotic resistance. Most people (68.75%) used antibiotics to cure infections by bacteria. Majority of people (75%) used antibiotics to cure infections by viruses and 30% of people didn't use antibiotics to cure the infection by viruses. When I asked the question "Do you think Most use of antibiotics will speed up the recovery of cold, cough and other diseases caused by the common flu virus?" All of the respondents replied yes and they thought antibiotics will speed up the recovery of most of the disease conditions of their animals. In my study area, people can buy antibiotics without a prescription. Some respondents, (6%) said that they obtained antibiotics without a prescription at pharmacies. On the other hand, (74%) of people didn't do it. Among all respondents, no one maintains the withdrawal period. All of the respondents lived in villages and most of them have inadequate knowledge of the withdrawal period. Most of them didn't know about the withdrawal period and they also didn't know about it should be maintained otherwise it can be harmful to people.

Table-6: Responses to the questionnaire on antibiotic knowledge (N = 80).

	Freq.	Percent	Cum.
Q1. Have you ever heard the term "Antibiotics"?			
No	2	2.44	2.44
Yes*	80	97.56	100.00
Q2. Do you know how antibiotic works?			
No*	60	75.00	75.00
Yes	20	25.00	100.00
Q3. Do you know about antibiotic resistance?			
No	57	71.25	71.25
Yes*	23	28.75	100.00
Q4. Can antibiotics be used to cure infections caused by bacteria?			
No	25	31.25	31.25
Yes*	55	68.75	100.00
Q5. Can antibiotics be used to cure infections caused by viruses?			
No*	24	30.00	30.00
Yes	56	70.00	100.00
Q6. Do you think the use of antibiotics will speed up the recovery of a cold, or cough?			
No*	0	0.00	0.00
Yes	80	100.00	100.00
Q7. Antibiotics can be obtained without a prescription at pharmacies.			
No*	74	92.50	92.50
Yes	6	7.50	100.00
Q8. Antibiotics can be used without maintaining a withdrawal period.			
No*	80	100.00	100.00
Yes	0	0.00	100.00
Q9. Antibiotics can be used in any dose and duration.			
No*	58	72.50	72.50

Yes	22	27.50	100.00
Q10. Do you think the excessive use of antibiotics will decrease the drug's efficiency?			
No	14	17.50	17.50
Yes*	66	82.50	100.00
Q11. The commercial feed contains antibiotics.			
No*	73	91.25	91.25
Yes	7	8.75	100.00
Q12. Any disease can be treated by using antibiotics.			
No*	45	56.25	56.25
Yes	35	43.75	100.00
Q13. Do you think antibiotics work as painkillers?			
No*	28	35.00	35.00
Yes		65.00	100.00
	52		
Q14. Is "Paracetamol" an antibiotic?			
No*	64	80.00	80.00
Yes	16	20.00	100.00
Q15. Antibiotics and Vaccines are the same.			
No*	74	92.50	92.50
Yes	6	7.50	100.00

Many respondents (72.50%) said that they used antibiotics with proper dose and duration and 27.50% said that they used antibiotics without proper dose and duration. It was a satisfactory answer from them. Most of the respondents (82.50%) thought that excessive use of antibiotics would decrease the drug's efficacy and 17.50% respondents thought that excessive use of antibiotics would not decrease the drug's efficacy. The commercial feed of cattle and goat don't contain any antibiotic. Some respondents (43.75%) thought that any disease can be treated by using antibiotics. Others (56.25%) thought that not all diseases can be treated by using antibiotics. Majority of them (65%) believe that antibiotics worked as painkillers and Others (35%) believe that antibiotics didn't work as painkillers. A few respondents (7.50%) said that antibiotics and vaccines are the same and others (92.50%) that antibiotics and vaccines are not the same. Most of them (80%) knew that "Paracetamol" was not an antibiotic. When I showed them some antibiotic and asked them to identify them 38%

respondent recognized Penicillin, 26% respondent recognized Gentamicin, 20% respondent recognized Oxytetracycline and 16% respondents recognized Ciprofloxacin.

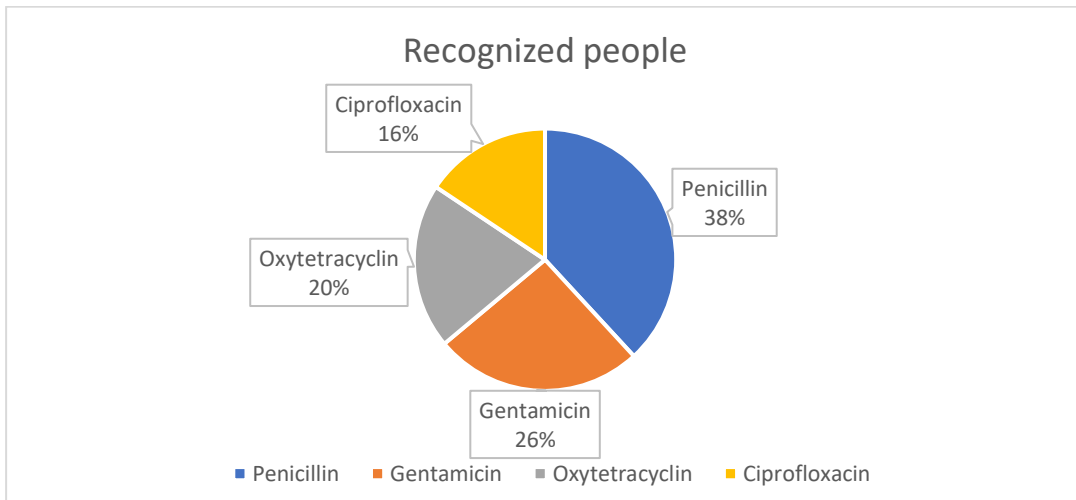


Fig – 3: Percentage of antibiotic recognized People

3.3 Attitude: In the attitude section, I asked the respondent “Is antibiotic resistance a problem in Bangladesh? “A few respondents (11.25%) considered that antibiotic resistance is a problem in Bangladesh. Others (88.75%) were not considered antibiotic resistance as a problem in Bangladesh. It showed that they are unaware about antibiotic resistance and how dangerous it can be in near future. Most people did not know that their overuse of antibiotics could affect their animal health and also it has harmful effects on human health.

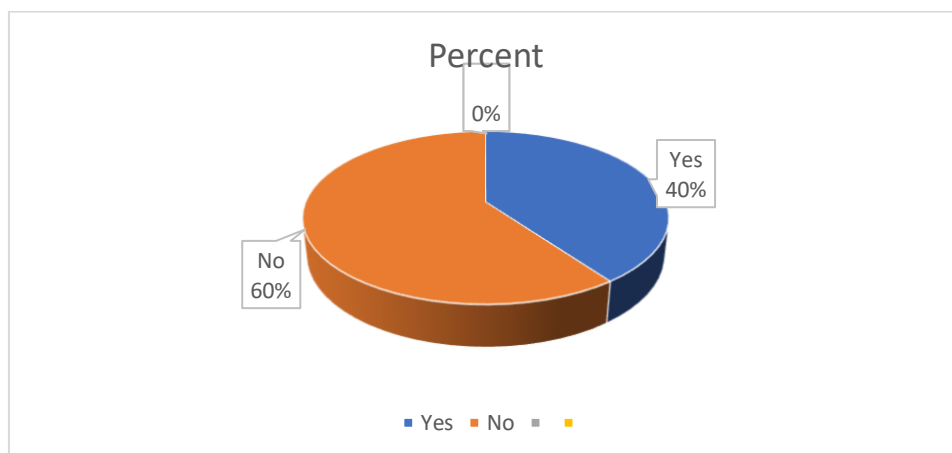


Fig – 4: Score of "Attitude" section

Among the respondent who knew about antibiotic resistance 88.75% thought that antibiotic resistance could affect the health of their animal and 11.25% respondents thought that antibiotic resistance could not affect the health of their animal.

Majority of respondent (82.75%) thought it is necessary to aware about the information on proper use of antibiotic before applying them. It was a positive answer from them. This result that if they enough scope to know about use of antibiotic they will learn properly how to use antibiotic and stop misuse of antibiotics. When I asked them "It is not necessary to consult a veterinarian before using antibiotics?" More than half respondent (55.25%) opined that they thought it was necessary for them and others (43.75%) respondent thought that it was not necessary. This type of attitude can be dangerous and can be harmful for animal and human health.

If rural people know more about antibiotic resistance and increase awareness about antibiotic resistance then it will help them to proper use antibiotics. Most of the respondents (96.25%) said that it is necessary to establish training about the rational use of antibiotics. Biosecurity is of major importance in reducing the incidence of diseases and antimicrobial resistance problems (Nuangmek et al., 2018)Almost half of respondent (48.50%) said that they maintained biosecurity to reduce the use of antibiotic and others (52.50%) respondent said that they didn't maintain proper biosecurity to reduce the use of antibiotic. If all of them maintained proper biosecurity the use of antibiotics could be reduced. In my UVH when I asked them "It is essential to follow the antibiotic withdrawal period before selling the livestock to ensure safe consumption. "In this context, they (56.25%) said that, they didn't follow this and many of them didn't know about the withdrawal period of antibiotics. This type of attitude can lead to AMR. When I asked them these questions "It is required to use an antibiotic until complete disease recovery." & "It is required to use an antibiotic when a disease occurs on nearby farms." Their answer was little disappointing they (88.75% & 66.25%) said that, they used antibiotics until the disease recovered and don't maintain the proper dose when the symptoms were gone, they were stopped to use the drug. They used antibiotics or another drug if any disease or outbreak occur nearby. some answer was satisfying "It is important to use antibiotics as growth promoters in livestock production." In this context, they said that in the case of cattle and goats they (92.50%) didn't use growth promoters in livestock production. "Everyone should complete the entire course of antibiotics to prevent AMR development." In the case of this question, the respondents who knew about antibiotic agreed with this and said that everyone should complete the entire course of antibiotics to prevent AMR development.

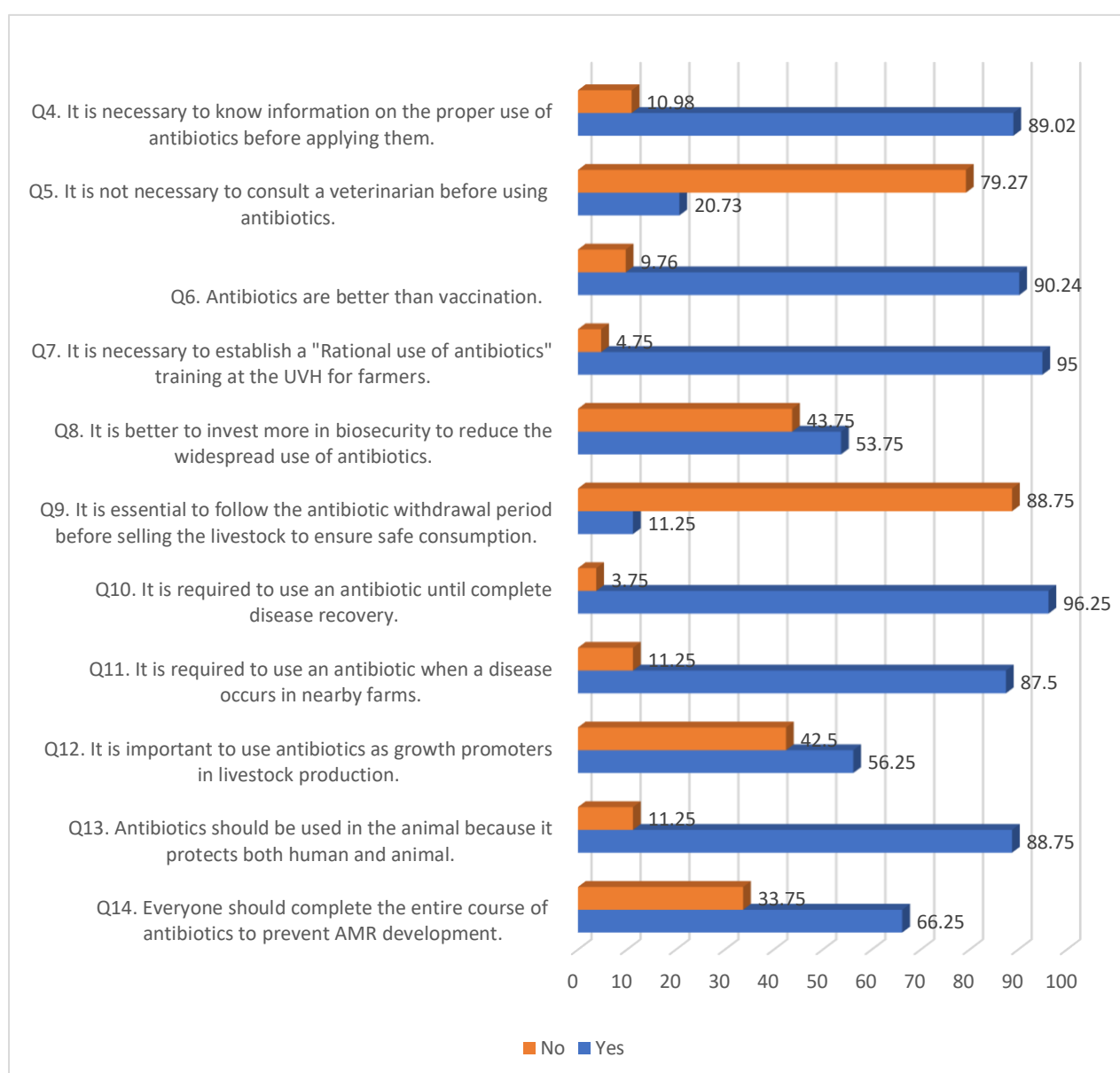
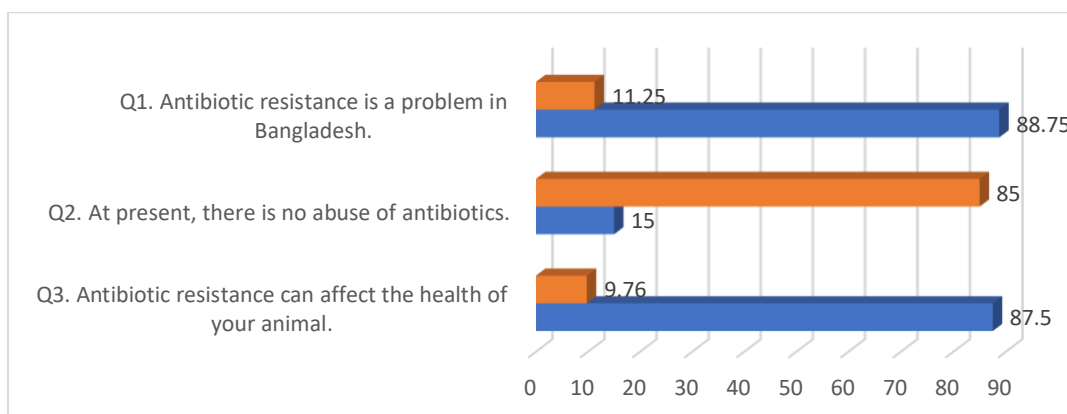


Fig – 5: Results of “Attitude” section

3.4 Practice:

Table-7: Responses to the questionnaire on antibiotic Practice (N = 80).

	Freq.	Percent	Cum.
Q1. Do you stop the use of antibiotics as soon as your animal recovers?			
No*	52	65.00	65.00
Yes	28	35.00	100.00
Q2. Do you use antibiotics without the veterinarian's instruction?			
No*	69	86.25	86.25
Yes	11	13.75	100.00
Q3. Do you use antibiotics on livestock based on your prior experience?			
No*	41	51.25	51.25
Yes	39	48.75	100.00
Q4. Do you ask the veterinarian to prescribe antibiotics for a common disease?			
No*	43	53.75	53.75
Yes	37	46.25	100.00
Q5. Do you check the expired date of antibiotics before using them?			
No	40	50.00	50.00
Yes*	40	50.00	100.00
Q6. Do you use antibiotics as the prescribed dose and duration?			.
No	1	1.25	1.25
Yes*	79	98.75	100.00
Q7. Do you throw the expired and unused antibiotics on the ground?			
No*	0	0.00	0.00
Yes	80	100.00	100.00
Q8. Do you vaccinate your animal to reduce the use of antibiotics?			

No	4	5.00	5.00
Yes*	76	95.00	100.00
Q9. Do you maintain regular antibiotic therapy as a prevention measure?			
No*	77	96.25	96.25
Yes	3	3.75	100.00
Q10. Do you use antibiotics other than the prescribed one?			
No*	67	83.75	87.75
Yes	13	16.25	100.00
Q11. Do you use multiple antibiotics together?			
No*	47	58.75	58.75
Yes	33	41.25	100.00
Q12. Do you maintain basic hygiene at the farm to prevent diseases?			
No	4	5.00	5.00
Yes*	76	95.00	100.00
Q13. Do you use a double dose of antibiotics for quick healing?			
No*	70	87.50	87.50
Yes	10	12.50	100.00
Q14. Do you use antibiotics in feed products to prevent microbial spoilage?			
No*	73	91.25	91.25
Yes	7	8.75	100.00
Q15. Did you ever use ruminant antibiotics for birds or vice-versa?			
No*	78	97.50	97.50
Yes	2	2.50	100.00
Q16. Do you buy antibiotics from field-level drug representatives?			
No*	48	60.00	60.00
Yes	32	40.00	100.00

To acquire information about the practice of antibiotics I asked them "Do you stop the use of antibiotics as soon as your animal recovers?" Most of them (65%) replied "Yes" and others (35%) replied that they do not stop the use of antibiotics as soon as their animal recover. They use antibiotics according to the prescription. When I asked them whether they use

antibiotics without the veterinarian's instruction or not, then they (13.75%) replied that they did it and (86.25%) said that they did not use antibiotics without a veterinarian's instruction. Some people (48.75%) used antibiotics in their animals based on their prior experience. This type of practice can be dangerous. When they use antibiotics on their own, they didn't use them in properly because they didn't have enough knowledge about them. This improper and overuse of antibiotics leads to antibiotic resistance. When I asked them, "Do you check the expired date of antibiotics before using them?" most of the respondents (51.75%) opined that they didn't check the expired date before using them. I did not expect this type of answer from most people. (98.75%) of people used antibiotics according to the dose and duration of prescription and (1.25%) of people didn't use antibiotics according to the dose and duration of the prescription. Antimicrobials given to humans, animals and plants are entering the environment and water sources (including drinking water sources) via wastewater, waste, run-off and sewage and through this spreading drug-resistant organisms and antimicrobial resistance (Manyi-Loh et al., 2018) In this context I asked them " Do you throw the expired and unused antibiotics on the ground?" All of them replied that they threw the expired and unused antibiotic on the ground. Because of this type of work antibiotics are mixed with soil and water and leads to AMR. In this practice section, I asked them "Do you maintain regular antibiotic therapy as a prevention measure?" In the case of cattle and goats, no respondent used antibiotics as a preventive measure. In the case of poultry, some of them (3.75%) use antibiotics as a preventive measure. A of respondents (16.25%) said that they used antibiotics other than prescribed ones and 83.75% of respondents said that they didn't use antibiotics other than prescribed ones. Some respondents (40%) used multiple antibiotics together and others (60%) didn't use multiple antibiotics together. Majority of respondents (94.74%) said that they maintained basic hygiene on their farm to prevent disease and 5.26% respondents said that they did not maintain proper hygiene on their farm. Improper waste disposal may contaminate the environment (water and soil), resulting in the transmission of resistant determinants (mobile genetic elements/factors) from resistant bacteria to normal/commensal bacteria (Nuangmek et al., 2018). Some respondents (12.75%) said that they sometimes use double doses of antibiotics for quick healing. if their animal's condition is very poor and they don't respond to drugs they did this type of work. Most of the respondents (87.25%) said that they did not do this. No one used antibiotics to feed products to prevent microbial spoilage. It was a satisfactory answer from them. Study showed that 40.50% of respondents bought antibiotics from field-level drug representatives and 59.50% of respondents didn't buy antibiotics from field-level drug representatives.

This study showed that 28.75% respondent were aware of AMR and believe it is a global challenge. It indicates that most of the farmers have a low level of knowledge about the use of antibiotics. Some misunderstanding was identified and most of the farmers need education on antibiotic use and resistance. Many farmers have negative attitude about antibiotic usage which caused more use of antibiotics and this phenomenon leads to antimicrobial resistance. In this study, only 10% of farmers indicated that they follow the proper practice of antibiotic a further indication is farmers have inaccurate perceptions about antibiotic usages. The findings are similar with the study conducted in other country (Nuangmek et al., 2018).

Chapter 4

Limitations of this study

This study has several limitations. First, it was conducted only with the farmers who came to UVH with their sick animals. As with other similar questionnaire surveys, the data obtained from this questionnaire survey was self-reported information which depends heavily on both the honesty and the recall ability of the respondents, as well as their understanding of the individual questions. Study period was limited and study area was restricted into fixed area. Respondent of this area are most of village people of different age, income level and different education level. If respondent was both in rural and urban areas then study will be more accurate.

Conclusion

Antibiotics are widely used in the animal husbandry sector for therapeutics and non-therapeutic purposes. This study suggests that AMR is increasing day by day associated with the Knowledge gap, Attitude and practice of antibiotics among farmers. Overuse, misuse, use of multiple antibiotics together, did not use of proper dose and duration and threw unused antibiotics in the ground this type of practice can be a significant contributing factor to the cyclical increase in AMR. Increasing awareness among farmers can reduce these types of practice and minimize the growth of antimicrobial resistance.

Acknowledgments

At first all praises and deepest sense of gratitude be to the "Almighty Allah" the most compassionate, all powerful and the supreme creator of the universe, whose blessings have enabled me to complete this study successfully.

The author express her sincere gratitude to her honorable teacher and supervisor, Mokaddes Ahmed Dipu, Assistant Professor, Department of Agricultural Economics and Social Science, and Tasneem Imam, Associate Professor, Department of Agricultural Economics and Social Science, Chattogram Veterinary and Animal Sciences University for their trustworthy and scholastic supervision untiring assistance throughout the work of sincere co-operation, helpful advice at all the stage of study period providing valuable suggestion, necessary correction in this study & for affectionate help for completing this work.

The author would like to express her sincere thanks to the honorable teacher Prof. Dr. Md. Alamgir Hossain, Dean, Faculty of Veterinary Medicine, and Prof. Dr. A. K. M. Saifuddin, Director of External Affairs, Chattogram Veterinary and Animal Sciences University for proceeding with this internship program.

The author also thankful to the Md Anowarulkorim, Upazila Livestock Officer of Upazila Livestock Office and Veterinary Hospital, Magura Sadar, Magura for his full cooperation, Inspiration regarding the study.

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Appendix
Questionnaire

Demographic & socio-economic information of farmers:

Name		Cell no.	
Age		Education	
Village		Occupation	
Farming Experience		Income/month	
Upazila& District		Livestock	Cattle, Goat, Chicken (layer/broiler), Duck, others (.....)

Knowledge about Antibiotics

Q No.	Questions	Answers	
		Yes	No
1	Have you ever heard the term "Antibiotics"?		
2	Do you know how antibiotic works?		
3	Do you know about antibiotic resistance?		
4	Any antibiotic can be used in livestock as a preventive measure.		
5	Can antibiotics be used to cure infections caused by bacteria?		
6	Can antibiotics be used to cure infections caused by viruses?		
7	Do you think the use of antibiotics will speed up the recovery of cold, cough, and other diseases caused by the common flu virus?		
8	Antibiotics can be obtained without a prescription at pharmacies.		
9	Antibiotics can be used without maintaining a withdrawal period.		
10	Antibiotics can be used in any dose and duration.		
11	Do you think the excessive use of antibiotics will decrease the drug's efficacy?		
12	The commercial feed contains antibiotics.		
13	Any disease can be treated by using antibiotics.		
14	Do you think antibiotics work as painkillers?		

15	Is "Paracetamol" an antibiotic?		
16	Antibiotics and Vaccines are the same.		

Attitudes regarding Antibiotics:

Q No.	Questions	Answers	
		Yes	No
1	Antibiotic resistance is a problem in Bangladesh.		
2	At present, there is no abuse of antibiotics.		
3	Antibiotic resistance can affect the health of your animal.		
4	It is necessary to know information on the proper use of antibiotics before applying them.		
5	It is not necessary to consult a veterinarian before using antibiotics.		
6	Antibiotics are better than vaccination.		
7	It is necessary to establish a "Rational use of antibiotics" training at the UVH for farmers.		
8	It is better to invest more in biosecurity to reduce the widespread use of antibiotics.		
9	It is essential to follow the antibiotic withdrawal period before selling the livestock to ensure safe consumption.		
10	It is required to use an antibiotic until complete disease recovery.		
11	It is required to use an antibiotic when a disease occurs in nearby farms.		
12	It is important to use antibiotics as growth promoters in livestock production.		
13	Antibiotics should be used in the animal because it protects both human and animal.		
14	Everyone should complete the entire course of antibiotics to prevent AMR development.		

Practice Regarding Antibiotic Use:

Q No.	Questions	Answers	
		Yes	No
1	Do you stop the use of antibiotics as soon as your animal recovers?		

2	Do you use antibiotics without the veterinarian's instruction?		
3	Do you use antibiotics on livestock based on your prior experience?		
4	Do you ask the veterinarian to prescribe antibiotics for a common disease?		
5	Do you check the expired date of antibiotics before using them?		
6	Do you use antibiotics as the prescribed dose and duration?		
7	Do you throw the expired and unused antibiotics on the ground?		
8	Do you vaccinate your animal to reduce the use of antibiotics?		
9	Do you maintain regular antibiotic therapy as a prevention measure?		
10	Do you use antibiotics other than the prescribed one?		
11	Do you use multiple antibiotics together?		
12	Do you maintain basic hygiene at the farm to prevent diseases?		
13	Do you use a double dose of antibiotics for quick healing?		
14	Do you use antibiotics in feed products to prevent microbial spoilage?		
15	Did you ever use ruminant antibiotics for birds or vice-versa?		
16	Do you buy antibiotics from field-level drug representatives?		