A study to assess the effectiveness of structured teaching programme on antibiotic resistance among General Nursing and Midwifery (GNM) second year students, Yashoda College of Nursing, Gowdavally, Secunderabad.

Ms. Athulya Maria Thomas[1], Ms. C Vasumathi[2], Ms. K Kavya[3], Ms. Neha P Simon[4], Ms. Noufiya. S[5], Ms. Sandhra Sara George[6], Ms. Sona Maria Joseph[7], Ms. Steny Mariya Francis[8], Mrs. M. Nagalaxmi[9]

[1] Researcher Bachelor of Science in Nursing 2025, Yashoda college of nursing,

[2,3,4,5,6,7,8] Bachelor of Science in Nursing 2025, Yashoda college of nursing,

Guide, Lecturer, Dept. of Community Health Nursing Yashoda college of nursing, Gowdavally,

***Abstract*—A study to assess the effectiveness of structured teaching programme on antibiotic resistance among General Nursing and Midwifery (GNM) second year students at Yashoda College of Nursing.Objective of the study to assess the effectiveness of structured teaching programme by conducting pre and post-test on knowledge of GNM second year students on antibiotic resistance.The methodology of study was a study involving students of knowledge on antibiotic resistance among GNM second year students at Yashoda College of Nursing, Gowdavally .50 sample of students have selected in the study . The structural questionnaire was administered by the investigators to the students.By the end of the study results shows that the majority of 64.0% of students having above average knowledge and 36.0% of average knowledge level. The conclusion of study is the students are having adequate knowledge about antibiotic resistance.**

I. INTRODUCTION

"Antibiotics are drugs of natural or synthetic source that can eradicate or inhibit the growth of bacteria " -Serrano,2005

Infectious disease as defined by the world health organization (WHO,2014), are caused by pathogenic microorganisms which include m viruses, parasites, bacteria and fungi.

An individual can transmit these diseases to another individual. About 90% of death from infectious diseases are caused by six diseases processes: diarrhea, tuberculosis, acute respiratory tract infection, Human immune deficiency virus (HIV), measles and malaria (Demain and Sanchez, 2009).

In developed nations, a drastic reduction of avoidable deaths from infectious diseases especially in children has been achieved because of a combination of factors such as improved sanitation nutrition housing, availability of antimicrobials and comprehensive immunization programme.

In resource poor and tropical countries infectious diseases are still the major source of morbidity and mortality among the children. Antibiotic resistance is a public health threat of the utmost importance, especially when it comes to children.

According to WHO data, infections caused by multi drug resistant bacteria produce 700000 deaths across all ages, of which around 200,000 are newborns.

Antibiotics are medicines that fight bacterial infections. They can save lives if they are used correctly, but nowadays antibiotic resistance has become a real problem.

Infections by resistant microorganisms do not respond to treatment, so the duration of the disease is prolonged, and the risk of death increases. Moreover, if the treatment fails or if the response to treatment is slow, the patient is contagious for longer, which increases the likelihood of resistant microorganisms being transmitted to other people.

According to the world health organization (WHO), inadequate use of antibiotics includes the prescription of inappropriate antibiotics for a brief time, in low or insufficient doses and or for diseases for which they are not indicated; likewise, excessive therapeutic dosage regimens are also considered inadequate uses of antibiotics.

It is important to evaluate that the control of antibiotic resistance requires a multidisciplinary approach that the nursing staff play a key role in the rational uses of antibiotics, the training impact in reducing the incidence of antibiotic resistance.

II. NEED FOR THE STUDY

Antibiotic resistance is a worldwide health crisis and one of the leading reasons for this crisis is the improper use of antibiotic. The increased frequency of infectious illnesses is threatening to the improper use of antibiotic. Nurses are in a prime position to ensure that all patients especially children need are addressed when an antibiotic is administered since they have most contact with children and their parents and participate in every step of care. Nurse actively participates in avoiding antibiotic resistance. A recent study has revealed that if we do not take immediate proactive solutions to slow down the rise of antibiotic resistance, in the year of 2050, it will be the cause of 10 million deaths and of a loss of 100 trillion USD of economic output. These consequences stress the important need not only to develop new agents to compact multidrug resistance bacteria, but also to implement measures to prevent or minimize antibiotic resistance. An alarming finding of this study is the high percentage of students who are ignorant of the inefficiency of antibiotics to treat viral infections or the typical symptomatology of the common cold, for example: cough, pain. However, this is not an isolated case since of these mistakes have been previously notified in different investigations, which were carried out among the general population as well as in healthcare staff. This lack of knowledge of the indications of the antibiotics highlights the need to strengthen this topic in curriculum of the students enrolled in health degrees, as it has been referred to by students of medicine, pharmacy, dentistry and nursing. As future health care professionals, general nursing and midwifery students need to stay informed about the latest research and trends in antibiotic resistance to provide evidence- based care. Studying antibiotic resistance can enhance students' knowledge and skills in this critical area of healthcare.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of structured teaching programme on antibiotic resistance among General Nursing and Midwifery (GNM) second year students, Yashoda College of Nursing, Gowdavally, Secunderabad.

III. OBJECTIVES

- To assess the effectiveness of structured teaching programme by conducting pre and post-test on knowledge of GNM second year students on antibiotic resistance.
- To associate the post-test level of knowledge with their selected socio- demographic characteristics.

OPERATIONAL DEFINITIONS

- Assess: It refers to the process needed to identify an analysis the knowledge of GNM second year students regarding antibiotic resistance.

- Effectiveness: It refers to the enhancement of knowledge after administration of information, education and communication using structured knowledge questionnaires.

- Structured Teaching Programme: It refers to systematically planned teaching programme designed to provide information regarding antibiotic resistance among GNM second year students.

- Antibiotic resistance: It is defined as the ability of bacteria to resist the effects of antibiotics, making them less effective in killing or inhibiting the growth of bacteria.

IV. TITLE OF THE STUDY

Antibiotic resistance.

HYPOTHESIS

- Research Hypothesis: There is a significant difference between the pre-test and post test score of GNM second year students on antibiotic resistance.

- Null Hypothesis: There is no significant difference between the pre-test and post-test score of GNM second year students on antibiotic resistance.

ASSUMPTIONS
The structured teaching plan will improve the post-test knowledge score of GNM second year students.

DELIMITATIONS
This study is delimited to GNM second year students at Yashoda College of Nursing, Gowdavally.

This study limited only to 50 sample.

V. REVIEW OF LITERATURE

Abdullah A.Alshehri and wale y. Khawagi,2025
Conducted study on knowledge awareness and perceptions towards antibiotics use ,Resistance,and anti-microbial stewardship among final-year medical & pharmacy students in Saudi arabia. In this study the sample size was 197 pharmacy students.The study design was cross-sectional survey was conducted on questionnaire. The results of the study among 197 participants from Saudi universities 26 of them have good knowledge on antibiotic use was observed 47.7%. 47.7% for ABR, 52.8% AMS. ($P < 0.001$). The findings of the study highlight significant gaps in knowledge and awareness of antibiotics use.

VI. RESEARCH METHODOLOGY

Research Approach
The research approach is the plan to identify the concepts in both manners by quantitative qualitative or a combination of two methods.

Research Design
The research design adopted for the present study is A pre – experimental pre-test and post-test design will be adopted for this study.
Variables
Independent variables: - structured teaching program on antibiotic resistance.
Dependent variable: - knowledge level of GNM 2nd year students regarding antibiotic resistance.
Setting of the study
This study will be conducted at Yashoda College of Nursing
Population
The population for the present study consists of GNM 2 nd year students at Yashoda College of Nursing.
Sampling Technique
Sampling technique: “The process ofselecting a portion of the population to represent the entire population being studied’’.
Sample Size
Sample Size: 50

Part-a demographic data
This section consists of 4 variables. Which includes age, community, family history, previous knowledge.
Part-b questions related to resistanceof antibiotics
It consists of 30 questions related to antibiotic resistance each correct answer carries one mark and wrong answer carries zero and total 30 marks.

Interpretation:
1-10 - Below average
11-20 - Average
21-30 - Above average

Validity
Content validity refers to the degree to which an instrument or test measures what is supposed to be measured. The tool and content were sent and given to experts along with the objective of the study from the field of medical surgical nursing. The content validity of the tool was ensured by a group of experts whose valuable suggestions and corrections were taken into consideration and changes and modifications of the tool were done as per the recommendation.

Reliability
Reliability of a research instrument or tool is referred to as it I sthe degree to which a calculation and increment of instruments and tool gives the same outcome or result in each time that is used, considering that the fundamental things being measured doesn’t change.
The reliability refers to the accuracy and consistency of measuring tool was elicited by using pre-test – post-test and comparing the results. It has been done by using Karl Pearson Formula and the value of ‘r’ is 1.00 which had been approved by the experts.

Pilot study

Pilot study is the pre-test or a preliminary survey often conducted bythe researcher, before starting actual study to assess the practicability, feasibility and appropriateness ofresearch design, methodology and tool of the study. The pilot study was conducted among 5 GNM second year students at Yashoda College of Nursing, Gowdavally which revealed that research design, methodology and tool are feasible for conducting main study.

VII. METHOD OF DATA COLLECTION

The method of data collection used for the study is questionnaire, which is prepared to assess the knowledge regarding antibiotic resistance among GNM second year students. The tool has been prepared after review of literature and discussion with experts and based on the objectives of the study.

Data analysis

Data analysis is a systematic organization, synthesis of research data and testing research hypotheses by using obtained data. It was planned to analyse and interpret the data with the help of descriptive and inferential statistics. The data were organised in the following section:32

- Frequency and percentage distribution is used to analyse the demographic variables.
- Mean and standard deviation to assess the knowledge regarding antibiotic resistance among GNM second year students at Yashoda College of Nursing, Gowdavally ,Secunderabad.
- Paired T test is planned to know the effectiveness of structured teaching program regarding antibiotic resistance among GNM second year students at Yashoda College of Nursing, Gowdavally, Secunderabad.
- Chi square is used to associate the knowledge regarding the antibiotic resistance among GNM second year students at Yashoda College of Nursing, Gowdavally, Secunderabad with demographic variables.

Data analysis and interpretation

Analysis is the process of organizing and synthesizing data so asto answer the research questions and test the hypothesis. Interpretation is the process of making sense of results and examining their implications.

Presentation of data analysis

Section-1: Frequency of demographic variables of GNM 2nd year students.

Section-2: Analysis of pretest and posttest knowledge score of GNM 2nd year students on antibiotic resistance.

Section-3: Effectiveness of structured teaching program on antibiotic resistance.

Section-4: Association between post-test knowledge score of the GNM 2nd year students with their selected demographic variables.

Section–I

Section–I deal with the demographic variables or information about the samples which include age, community, family history, previous knowledge regarding antibiotic resistance and experience.

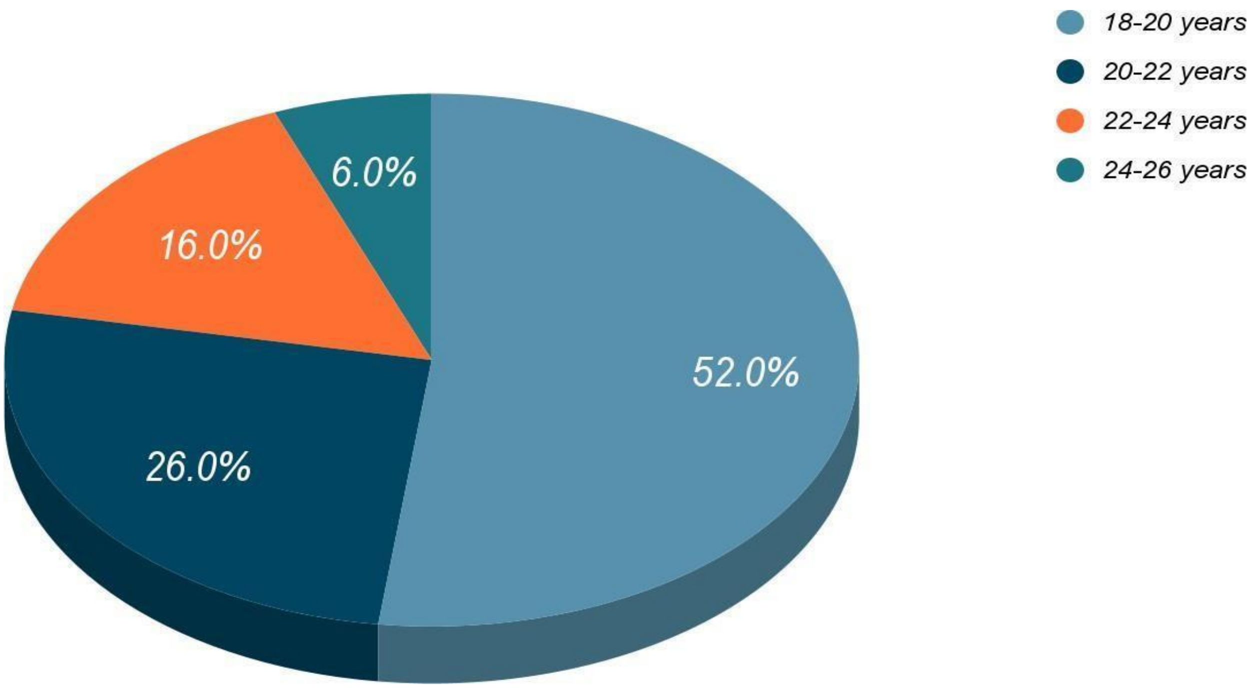
The data was collected with the help of a structured questionnaire.

Table.1 Frequency and percentage distribution according to their age

N = 50

Demographic Data	Frequency	Percentage
18-20 years	26	52.0%
20-22 years	13	26.0%
22-24 years	08	16.0%
24-26 years	03	6.0%

Table 1 shows that 52.0% of students were from the age group of 18–20 years, 26.0% of the students were from the age group of 20–22 years, 16.0% of students were from the age group 22– 24 years and 6.0% of the students were from the age group of 24–26 years.



Frequency and percentage distribution according to their age

Table.2 Frequency and percentage distribution according to their community

N = 50

Demographic Data	Frequency	Percentage
Urban	18	36.0%
Rural	32	64.0%

Table-2 shows that 36.0% of the students were from urban areas and 64.0% ofthe students were from rural areas.

Table.3 Frequency and percentage distribution according to their family history on antibiotic resistance

N = 50

Demographic Data	Frequency	Percentage
Yes	14	28.0%
No	36	72.0%

Table-3 shows that 28.0% of the students had a family history of antibiotic resistance and 72.0% of the students having no family history of antibiotics.

Table.4 Frequency and percentage distribution according to their previous knowledge

N = 50

Demographic Data	Frequency	Percentage
Yes	5	10.0%
No	45	90.0%

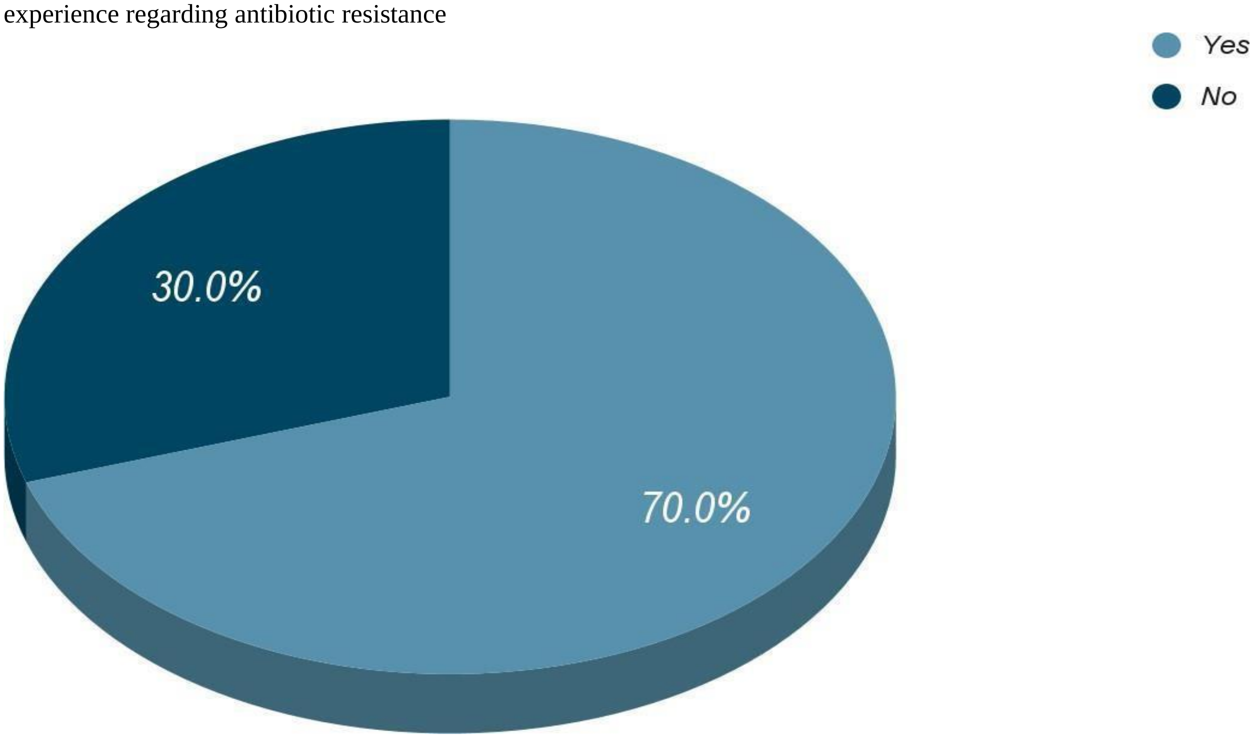
Table 4 shows that 10.0% of the students having previous knowledge and 90.0% of the students having no previous knowledge regarding antibiotic resistance

Table.5 Frequency and percentage distribution according to their experience

N = 50

Demographic Data	Frequency	Percentage
Yes	35	70.0%
No	15	30.0%

Table 5 shows that 70.0% of the students having clinical experience and 30.0% of the students having no clinical experience regarding antibiotic resistance



Frequency and percentage distribution according to their experience

Table.6 Frequency and percentage distribution of GNM 2nd year students according to the pre test performance in knowledge regarding antibiotic resistance

N = 50

Knowledge Level	Frequency	Percentage
Below Average	6	12.0%
Average	44	88.0%
Above Average	0	0

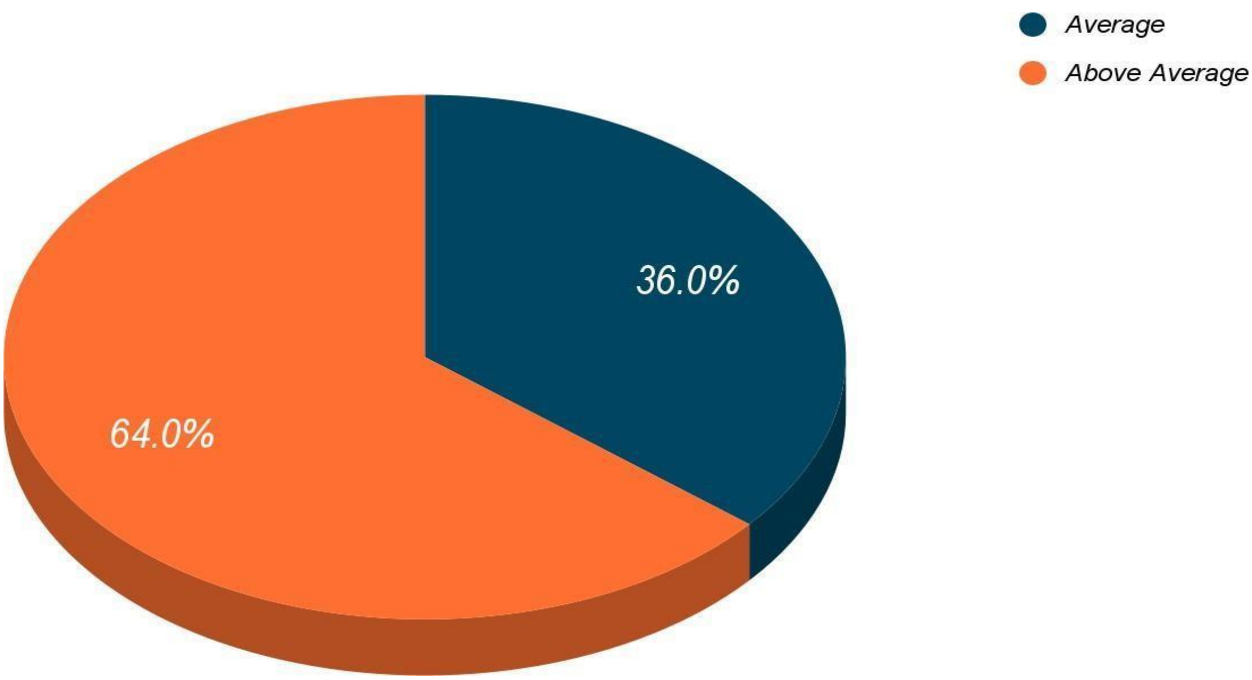
Table 6 shows that 12.0% of the students were performing below average level, 88.0% were performing on an average level and no students performed above average level before administering a structured teaching program on antibiotic resistance.

Table.7 Frequency and percentage distribution of GNM 2nd year students according to the post test performance in knowledge regarding antibiotic resistance

N = 50

Knowledge Level	Frequency	Percentage
Below Average	0	0%
Average	18	36.0%
Above Average	32	64.0%

Table 7 shows that 36.0% of the students were performing average level, 64.0% of the students were performing above average and no students performed below average level after administering a structured teaching program on antibiotic resistance.



Frequency and percentage distribution of GNM 2nd year students according to the post test performance in knowledge regarding antibiotic resistance

SECTION-2

Analysis of pretest and posttest knowledge score among students

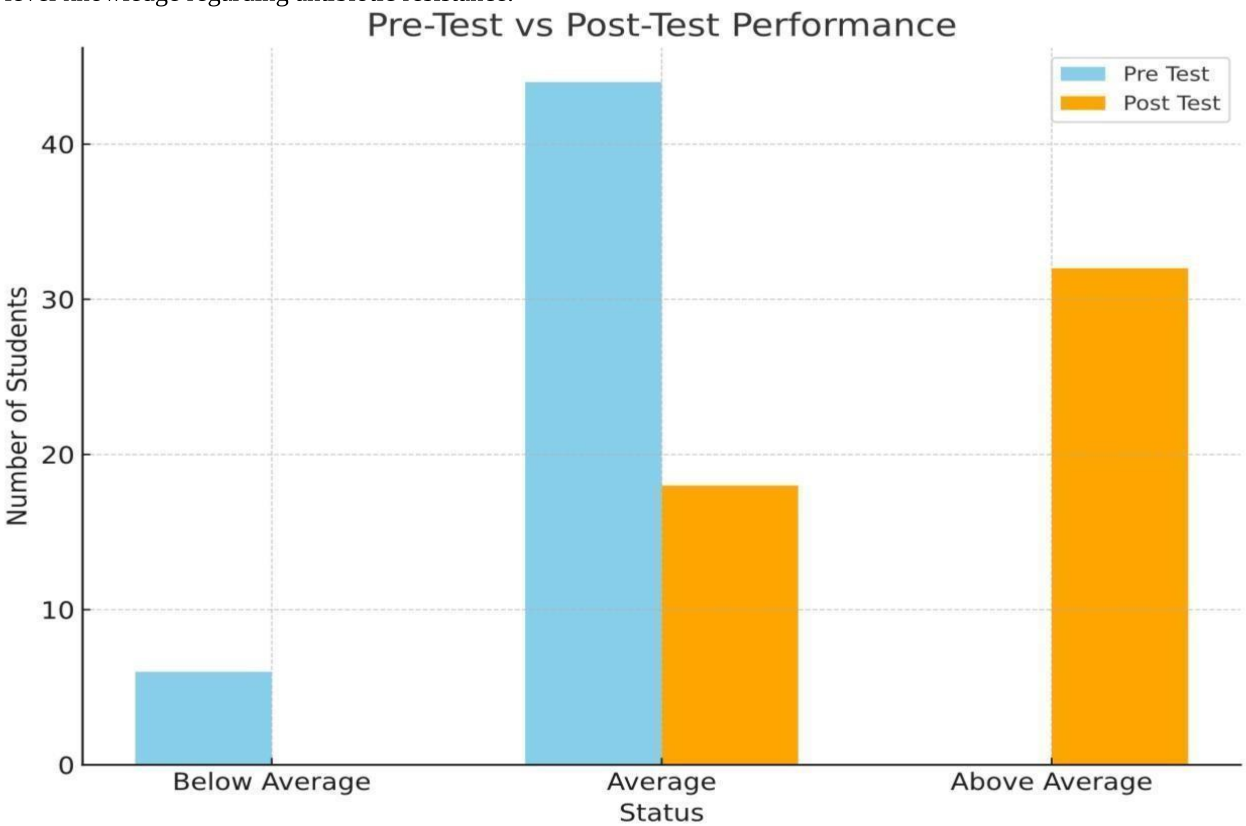
In this section the analysis of pre-test and posttest knowledge scores of students on antibiotic resistance in terms of frequency and percentage.

Table.8 Comparison of frequency and percentage distribution of students according to the pre test and post test knowledge level

Knowledge level	Pre Test		Post Test		Chi-square		df	Inference
	Frequency	Percentage	Frequency	Percentage	Calculated value	Tabled Value		
Below Average	6	12.0%	0	0%	47.05	5.99	2	S*
Average	44	88.0%	18	36.0%				
Above average	0	0%	32	64.0%				

Note: S* indicates significant value

Table 8 shows that comparison of pre and post level knowledge regarding antibiotic resistance. The Chi-square calculated value is 47.05 and tabled value is 5.99, so it suggests significant association between the pre and post level knowledge regarding antibiotic resistance.



Comparison of frequency and percentage distribution of students according to the pre test and post test knowledge level

Section-3

Effectiveness of structured teaching programme on antibiotic resistance

This section evaluates the effectiveness of structured teaching programmes on antibiotic resistance among GNM 2nd year students by testing research hypothesis using paired t-test.

Table.9 The mean, standard deviation of the knowledge score of the pre test and post test

Sl No.	Knowledge score	Mean	Standard Deviation	Paired t-test		Inference
				Calculated value	Tabled Value	
1	Pre test	13.92	2.73	18.12	2.01	S*
2	Post test	21.24	3.49			

Note: S* indicates significant value

Table 9 indicates that the mean pretest score of knowledge regarding antibiotic resistance among GNM 2nd year students was 13.92 with a standard deviation of 2.73. It is increased to 21.24 with standard deviation of 3.49 which was a measure of spread of scores within a set of data.

The large standard deviation indicates greater variability in the data whereas smaller standard deviation indicates lesser variability in the data. The mean of the post test knowledge scores were higher than the mean pre test knowledge scores regarding antibiotic resistance.

The calculated paired (t) value of 18.12 of GNM 2nd year students was significantly higher than table value (2.01). Hence research hypothesis (H1) was accepted. It indicates that the structured teaching program was effective in increasing the knowledge among the GNM 2nd year students.

Section-4

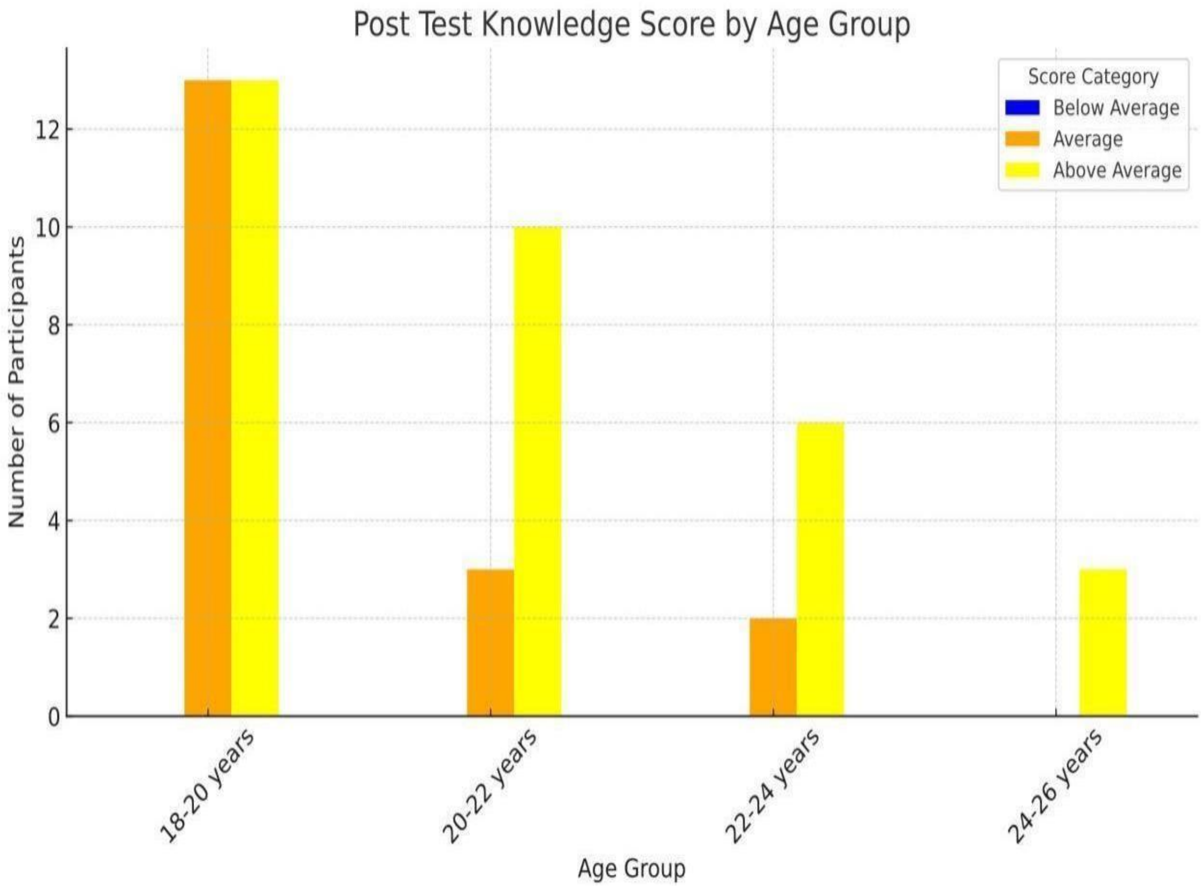
Section 4 deals with the relationship between the knowledge of the students regarding antibiotic resistance with selected demographic variables of students such as age, community, family, history, previous knowledge and experience. Non parametric tests such as Chi-square applied for testing the association between the post test knowledge scores and selected demographic variables.

Table.10 Chi-square test for testing the association between the post test knowledge score and demographic variable age

Sl No.	Demographic data	Knowledge			Chi-square		df	Inference
		Below Average	Average	Above Average	Calculated Value	Tabled Value		
1	18-20 years	0	13	13	9.43	0.024	3	S*
2	20-22 years	0	3	10				
3	22-24 years	0	2	6				
4	24- 28 years	0	0	3				

Table 10 shows that result of association between pretest and post test with the selected demographic variable age. The Chi-square was carried out to determine the association between knowledge about the antibiotic resistance (Chi-square value are calculated value is 9.43 were significantly associated to tabled value

0.024)



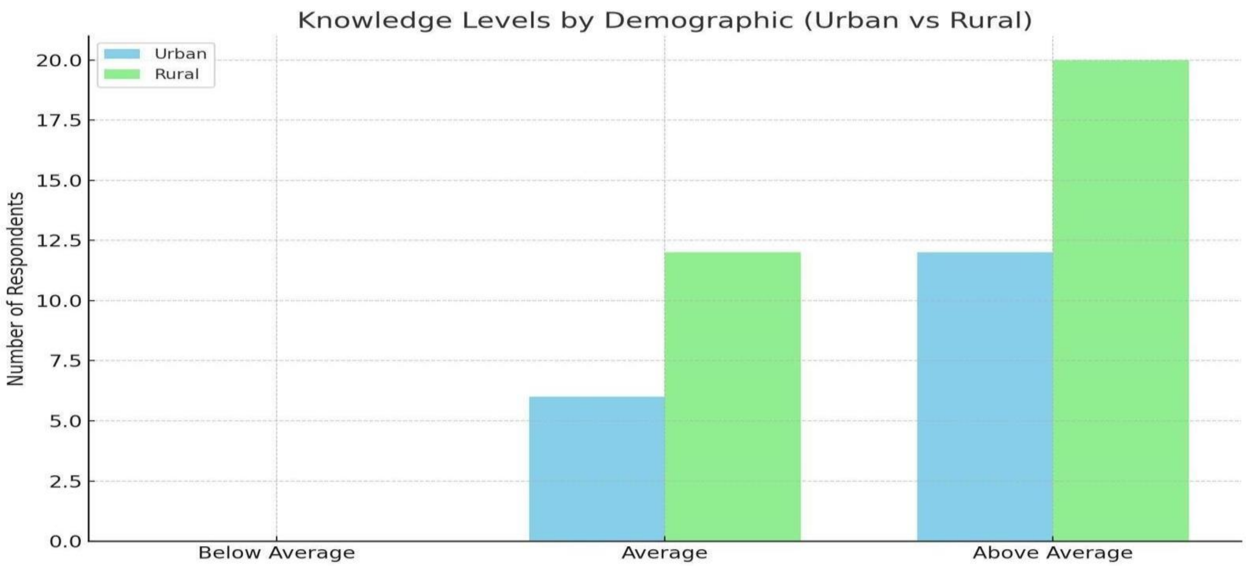
Association between the post test knowledge score and demographic variable age

Table.11 Chi- square test for testing the association between the post test knowledge score and demographic variable community.

Sl No.	Demographic Variable	Knowledge			Chi-Square		dt	Inference
		Below Average	Average	Above Average	Calculated value	Tabled Value		
1	Urban	0	6	12	0.04	3.84	1	NS*
2	Rural	0	12	20				

Note: NS* indicates non-significant value

Table 11 shows that results of association between post test with the selected demographic variable community. The chi-square value are calculated value is 0.04 and tabled value is 3.84, so this suggests no significant association between the demographic variable and the post test.



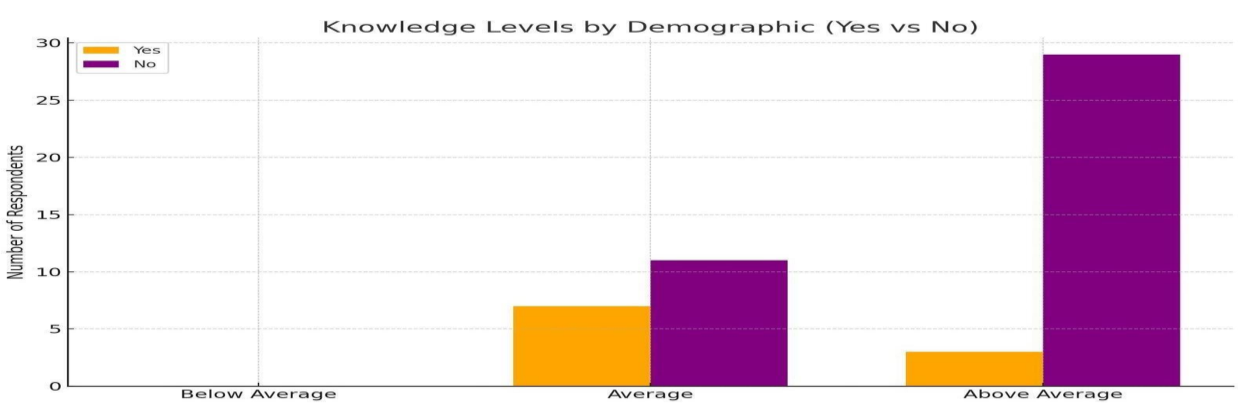
Association between the post test knowledge score and demographic variable community

Table.12 Chi-square test for testing the association between the post test knowledge score and demographic variable family history.

Sl No.	Demographic Variable	Knowledge			Chi-Square		df	Inference
		Below Average	Average	Above Average	Calculated value	Tabled Value		
1	Yes	0	7	3	6.27	3.841	2	S*
2	No	0	11	29				

Note: S* indicates significant value

Table 12 shows the result of association between post tests with the selected demographic variable family history. The Chi-square value calculated is 6.27 and tabled value is 3.841. So this suggests significant association between the demographic variable and the post test.



Association between the post test knowledge score and demographic variable family history

Table.13 Chi-square test for testing the association between the post test knowledge score and demographic variable previous

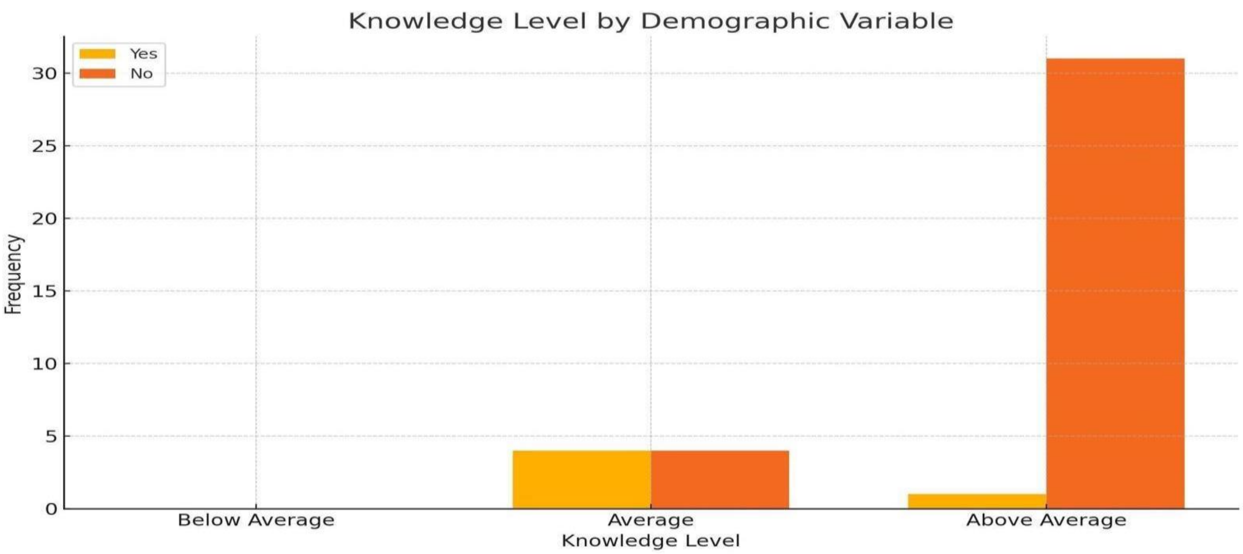
Sl No.	Demographic Variable	Knowledge			Chi-Square		df	Inference
		Below Average	Average	Above Average	Calculated value	Tabled Value		
1	Yes	0	4	1	4.667	3.841	1	NS*
2	No	0	4	31				

knowledge

Note: NS* indicates non-significant value

Table 13 shows the results of association between the post test with the selected demographic variables previous knowledge.

The Chi-square value calculated is 4.667 and tabled value is 3.841. So this suggests the significant association between the demographic variable previous knowledge and post test.



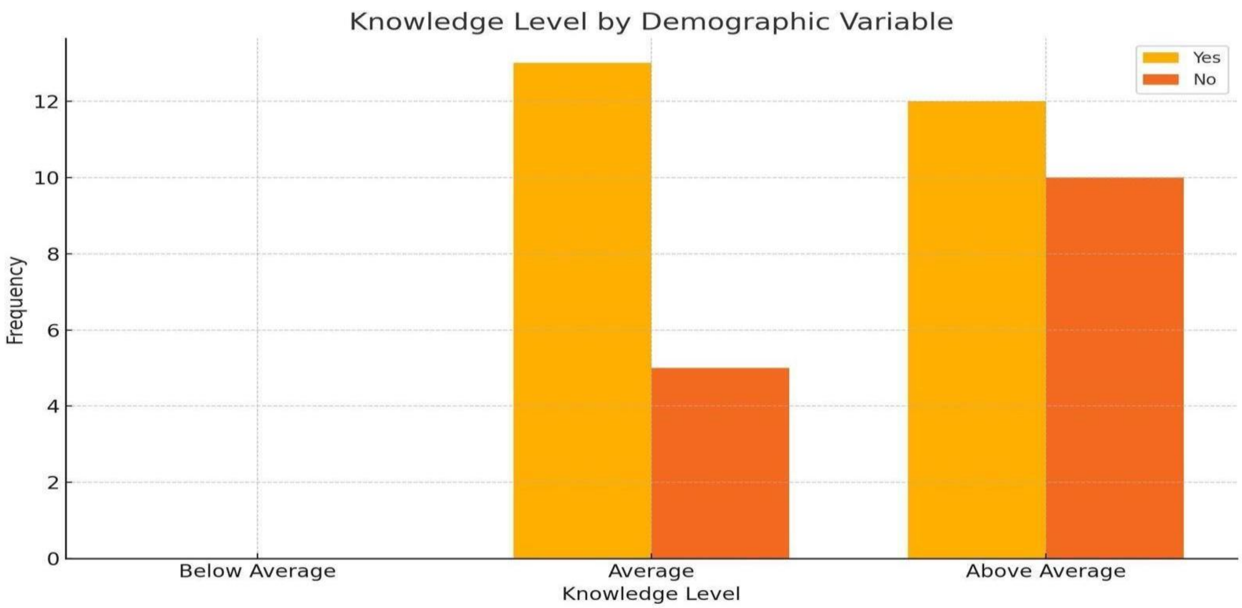
Association between the post test knowledge score and demographic variable previous knowledge

Table.14 Chi-square test for testing the association between the post test knowledge score and demographic variable experience

Sl No.	Demographic Variable	Knowledge			Chi-Square		df	Inference
		Below Average	Average	Above Average	Calculated value	Tabled Value		
1	Yes	0	13	12	0.66	0.797	1	NS*
2	No	0	5	10				

Note: NS* indicates non-significant value

Table 14 shows the results of association between the post test with selected demographic variable experience.
The chi-square value is calculated value is 0.66 and tabled value is 0.797. So this suggests the no significant association between the demographic variable and the post test



Association between the post test knowledge score and demographic variable experience

VIII. SUMMARY, FINDINGS, CONCLUSIONS, DISCUSSION, IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

FINDING OFTHE STUDY

The findings show that their was a significant difference in the pre-test and post-test knowledge scores as area and item wise.

The first objective of the study was to asses the effectiveness of structured teaching programme by conducting pre and post test on knowledge of GNM 2 nd years students at Yashoda College of Nursing, Gowdavally on antibiotic resistance. In order to assess the knowledge of students before structured teaching programme investigators conducted pre test.

SECTION-A

This section deals with the percentage distribution according to the demographic variables. Out of the 50 samples, 52.0% of students belonged to 18-20 years of age, 26.0% of students belonged to 20 -22 years of age, 16.0% of students belonged to 22-24 years of age, 6.0% of students belonged to 24-26 years of age.

Regarding the community 36.0% of students who participated in the study were belongs to urban, 64.0% of students were belongs to rural area.

Regarding family history 28.0% of students who participated in the study having family history, 72.0% of students having no family history of antibiotic resistance.

Regarding previous knowledge 10.0% of the students having previous knowledge and 90.0% of students having no previous knowledge regarding antibiotic resistance.

Regarding the experience 70.0% of the students having clinical experience and 30.0% of
students having no clinical experience regarding antibiotic resistance.

SECTION-B

This section was to evaluate the effectiveness of structured teaching programme of antibiotic resistance among GNM 2 nd year students at Yashoda College of Nursing, Gowdavally.

The table shows that the main score of the knowledge of students on antibiotic resistance before administering structured teaching was 13.92 with standard deviation 2.73 and post test mean score was 21.24 with standard deviation 3. 49. This clearly indicates the significant difference between the knowledge score on antibiotic resistance pretest and post test. The calculated65 paired (t) value 18.12 of student nurses was significantly higher than tabulated value(2.01) . Hence research hypothesis (H1) was accepted. It indicates that structured teaching programme was effective in increasing the knowledge of students.

The chi-square was carried out to determine the association between knowledge scores with age, community, family history, previous knowledge, experience about antibiotic resistance (chi- square value is 2.48 were significantly associated at 0.05 level of significance. However, community, experience was found to be non-significant. Hence the research hypothesis was accepted for association of knowledge scores with age, family history, previous knowledge. The research hypothesis was rejected for community, experience.

IX. SUMMARY

A pre-experimental study was conducted to assess the effectiveness of structured teaching programme regarding antibiotic resistance among GNM 2 nd year students. The study was conducted at Yashoda College of Nursing, Gowdavally with a total of 50 samples were selected by convenient sampling the data was analysed and findings were in the form of tables. This includes the information regarding the demographic variables of the students pre and post test assessment of level of knowledge, mean of knowledge level and testing the hypothesis. Out of 50 samples 52.0% of students belonged to 18-20 years of age, 26.0% of students belonged to 20-22 years of age, 16.0% of students belonged to 22-24 years of age, 6.0% of students belonged to 24-26 years of age.

Regarding community 36.0% of students participated in the study were belongs to urban area and 64.0% of students were belong to rural area. Regarding family history 28.0% of students who participated in the study having family history of antibiotic resistance, 72.0% of students having no family history of antibiotic resistance. Regarding previous knowledge 10.0% of students who participated in the study having previous knowledge, 90.0% students having no previous knowledge regarding antibiotic resistance. Regarding experience, 70.0% of students who participated in the study having clinical experience, 30.0% of students having no clinical experience regarding antibiotic resistance. Result showed that percentage distribution of pre test knowledge level of students. Among 50 samples 12.0% of students were having below average knowledge, 88.0% of students having average level of knowledge.

In the post test knowledge level, 36.0% of students having average knowledge, 64.0% of students having above average knowledge. The table (no.9) shows that the main score of knowledge of students on antibiotic resistance before administering structured teaching was 13.92 with 2.73 standard deviation and post test mean 21.24 with standard deviation 3.49. This clearly indicates the significant difference between the knowledge score on antibiotic resistance pre test and post test.
The hypothesis: - There will be a significant difference between pre test and post test score of students after the structured teaching programme is proved by using test.

X. CONCLUSION

The study results revealed that there was a significant need in the knowledge regarding antibiotic resistance among students which ensures the prevention of antibiotic resistance. It also shows that there is a significant increase in the knowledge of students after the administration of structured teaching programme and also there was about 80% increase in gaining knowledge. The study concluded that administration of structured teaching programme increased the knowledge of students on antibiotic resistance. Hence the knowledge gained by the students may be utilise for appropriate use of antibiotics and prevent antibiotic resistance so that they can maintain good quality of life.

IMPLICATIONS

IMPLICATIONS FOR NURSING RESEARCH

- The findings of the study revealed that the structured teaching could improve the
knowledge of antibiotic resistance among students. The study is the reference for the
coming investigator the field on antibiotic resistance among students.
- The study will encourage the nurse researcher to take up similar studies in the field of
medical surgical nursing.
- The study will encourage the nurse researchers to take qualitative studies in the field of
medical surgical nursing.

IMPLICATIONS FOR NURSING EDUCATION

- The findings the study revealed that the structured teaching programme was effective
when is planned properly and provided in a conductive environment with appropriate
presentations.
- The nurses are the vital persons in meeting changing needs of the society. Now the
nurses are in demand for updating knowledge through in service education and
continuing nursing education regarding the various benefits of prevention of antibiotic
resistance in order to improve the health status.

XI. RECOMMENDATIONS

- The study can be replicated on a large sample to validate the findings of the present
study.
- An experimental study might be conducted on students to evaluate the effectiveness of
structured questioner.

REFERENCES

REFERENCESBOOKS:

[1] Dr. C P Baveja, Textbook of Microbiology for Nursing, 5th edition published by Arya publishing company.

[2] Brunner and Suddarth’s Textbook of Medical Surgical Nursing volume 1, South Asian edition, published by Suresh k Sharma, S Madhavi.

[3] K. Park, Parks Textbook of Preventive and Social Medicine, 26th edition published by M/s Banarsidas Bhanot.

[4] Boyan B.Bonev, Textbook of Bacterial Resistance to Antibiotics from molecules to man, 1st edition, published by Wiley Blackwell

[5] Kateryna Kon and Mahendra Rai, Textbook of Antibiotic Resistance 1st edition, published by Academic press inc:

JOURNALS:

[1] Oyindamola Jaja, public attitude towards antibiotic use and antibiotic resistance.2017 November 29.

[2] World Health Organisation (2015) Antibiotic resistance:multi- country public awareness survey.

[3] Mary Jo Trepka, Edward A. Belongia, Po-Huang Chyou, Jeffrey P Davis and Benjamin Schwartz. The effect of Community intervention trial on parental

[4] knowledge and awareness of antibiotic resistance and appropriate antibiotic use in children. Paediatrics 2001;107;06

[5] Andrea Rabano-Blanco, Eva.M.D.M, Diego Gabriel, Manuel, Freire-Garabal, Silvia Novio. Nursing students’ knowledge and awareness of antibiotic use, resistance and stewardship. A Descriptive Cross- sectional study 2019 October 30;8(4):203

[6] Huemer M, Mairpady Shambat S, Brugger SD, Zinkernagel AS. Antibiotic resistance and persistence-Implications for human health and treatment perspectives. EMBO Rep. 2020 December 3;21(12)

NET SOURCE:

[1] https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance

[2] https://academic.oup.com/emph/article/11/1/1/6991286

[3] https://my.clevelandclinic.org/health/articles/21655-antibiotic-resistance

[4] https://my.clevelandclinic.org/health/articles/21655-antibiotic-resistance

[5] https://nyulangone.org/conditions/antibiotic-resistant-infections/diagnosis

[6] https://www.slideshare.net/slideshow/antibiotic-resistance-mechanisms/250048231

[7] https://pmc.ncbi.nlm.nih.gov/articles/PMC5262496/

[8] https://apps.who.int/iris/bitstream/handle/10665/194460/9789241509817_eng.pdf