Original Research Article

A study to assess the effectiveness of structured teaching program on knowledge regarding blood donation among adults at selected urban area of Rewa (M.P)

Archna Prajapati[1]*, Suman Singh[2], Priyanka Kushwaha[3], Sangeeta Bamaniya[4]

[1]Dept. of Nursing, Government Nursing College, Rewa, Madhya Pradesh, India
[2]Dept. of Nursing, Saudamini Institute of Nursing and Research, Rewa, Madhya Pradesh, India
[3]Dept. of Nursing, SAM College of Nursing, Bhopal, Madhya Pradesh, India
[4]Dept. of Nursing, Govt College of Nursing, Bhopal, Madhya Pradesh, India

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ABSTRACT

Aim: The present study was aimed to assess the effectiveness of structured teaching programon knowledge regarding blood donation among adults at selected urban area of Rewa (M.P).

Background: Blood donation must be increased in half countries of world so that reliable supply of safe blood shall be available to dependent patients. Globally the collection of blood donations are around 108 million and most of them or nearly 50% of them are from prosperous countries. It is found that high income countries have nine times higher blood donation collection with respect to low-income countries. The reason for taking this study was to spread the knowledge regarding blood donation and also creating awareness.

Materials and Methods: On the basis of selected objective, the nature of the study and to accomplish the objectives of the study quantitative research approach was found to be appropriate and pre-experimental one group pre-test post-test design was used in this study. Sample consists of 60 adults from the selected urban area of Rewa, non-probability purposive sampling technique was used for the selection of subjects. In this study independent variable is the Structured Teaching programme on knowledge regarding blood donation and dependent variables is knowledge regarding blood donation. The instrument used for the study was sociodemographic variables and self-structured questionnaire. The knowledge of adults regarding blood donation was assessed before and after administration of the Structured Teaching Program and the data were analysed by using descriptive and inferential statistics.

Results: The calculated chi-square value obtained for age and pretest score 10.015 which is lower than the tabulated value at, p value <0.05, which is statistically non-significant. The calculated chi-square value obtained for educational status and pre-test was 13.015 which is higher than the tabulated value at, p value >0.05, which is statistically significant. The calculated chi-square value obtained for marital status is 19.0749 which is higher than the tabulated value at, p value >0.05, which is statistically highly significant. The calculated chi-square value obtained for dietary pattern and pretest is 5.0225 which is lower than the tabulated value at, p value <0.05, which is statistically non-significant. The calculated chi-square value obtained for employment status is 16.0288 which is higher than the tabulated value at, p value > 0.05, which is statistically highly significant. The calculated chi-square value obtained for source of information 11.0857 which is lower than the tabulated value at, p value < 0.05, which is statistically non-significant.

Conclusion: The conclusion was drawn from the finding of the study was the adults did not have adequate knowledge regarding blood donation. The required information regarding blood donation will definitely lead to promote awareness and build healthy society.

1. Introduction

India is a country with a population of around a hundred crores, so it's no surprise that it needs a lot of blood to help save lives. According to reports, the country needs around 8 million units every year.[1] This blood is needed to replace blood lost in accidents, shock, surgery, burn victims, patients with anemia, newborns, kids with thalassaemia, haemophilia, leukemia, and blood cancer, and more. In India, 60% of the population are eligible to give blood, but only 5% do so. Unfortunately, in developing countries, only 40% of the blood is donated, and 60% of it is collected from paid and replace donors.[2]

Blood transfusion is an essential and necessary component of any nation's health care system for life-saving interventions. The demand for blood and blood-based products is on the rise around the world.[3] Studies have revealed that approximately 25 million maternal deaths and 15% of child mortality worldwide could have been avoided if adequate and safe blood-transfusion services had been available during pregnancy.[4]

Blood is a life-saving fluid that can't be made in factories or replaced with the blood of any other living thing. It's also a great source of nutrients and oxygen for any organism, which can make it easy to get infected. If you give someone too much infected blood, it can spread all sorts of diseases like Hepatitis, Syphilis, Malaria and HIV.[5] A patient could be in critical condition, and whether they live or die depends on if they get the right type of blood from the blood bank at the right time. Unfortunately, India is always running out of blood, so people have to run from place to get a unit of blood for their loved ones. In some cases, people even die for lack of blood.[6]

Blood is a vital component of life that is provided to those who require it by those who possess the resources to meet the need. Emergency blood emergencies occur every minute, and each patient requiring blood is an emergency, and the patient may have set back their life if blood is unavailable. One donation from one person can benefit one or more patients, as whole blood is composed of several useful components that perform specific functions in the body and in the bodies of those who receive it.[7] The components of whole blood include Red Blood Cells (RBCs), White Blood Cells (WBCs), Platelets (Pleated Blood), and Plasma (Pleated Plasma Proteins). Each component can be separated from the volume of blood donated by a person and transfused to a specific patient who requires that particular component. Therefore, many people can benefit from a single unit of blood.[8]

This study evaluates the efficacy of a structured educational program on knowledge of blood donation among adults in a selected urban area of Rewa district, Madhya Pradesh, India. Indian blood donation centers are only able to collect approximately 3 million units annually, while the requirement is 6 million units per year. Patients in India suffer due to not receiving the correct type of blood as per the requirements. If only 3 percent of eligible individuals in India give blood regularly and intentionally, there would be no shortage of blood in donation centers.[9]

2. Objectives

1. To implement the structured teaching programme on knowledge regarding Blood donation among adults at selected urban area of district Rewa.
2. To compare the pre-test and post-test on the effectiveness of structured teaching programme on knowledge regarding blood donation among adults at selected urban area of district Rewa.
3. To find out the association between pre-test and post-test on knowledge regarding blood donation among adults at selected urban area of district Rewa.

2.1. Hypothesis

All hypotheses were tested with a $p < 0.05$ level of significance.

1. H1 – There will be significant difference between pre-test and post-test knowledge score regarding blood donation among adults at selected urban area of Rewa.
2. H2 – There will be significant association between pre-test and post-test knowledge regarding blood donation among adults at selected urban area of the Rewa.

3. Review of Literature

Vasanthi D. (2019) conducted a study to evaluate the efficacy of Structured Self-Policing (STP) on the knowledge of blood donation in arts and science students at a selected college in Vadalur. A pre-test assessment was conducted using a structured knowledge questionnaire, followed by the administration of STP. A post-test was taken after seven days of drinking to assess the patient's knowledge and attitude towards blood donation. The results of the post-test showed an improvement in the patient's level of knowledge when compared to the pre-test. It was concluded that STP was successful in improving the patient's knowledge of blood donation.[10]

Melku M (2018) conducted a cross-sectional study to evaluate the knowledge and attitudes of undergraduate health science majors at Gondar University in Northwest Ethiopia. The study used a pre-administered questionnaire to collect data, and stratified sampling technique to select 225 graduate study participants. The mean score was then used to classify the knowledge and attitudes, and a binary logistic regression was applied to identify factors related to knowledge attitude and blood donation practice.

* *Corresponding author.*
E-mail address: archu111992@gmail.com (A. Prajapati).

Out of the 255 participants, 123 had a positive attitude towards blood donation, while 12.5 percent had never donated blood before. Demographic variables such as age were significantly associated with blood donation practice. Despite this, the majority of students had a positive attitude toward blood donation, indicating a low level of blood donation practice.[11]

Dr Anand N (2018) conducted a cross-sectional study to evaluate the knowledge and attitudes of individuals aged 18-60 years in an Indian Urban community in Chennai. This study was conducted on the months of May-June, using a Table of Random Numbers to recruit a sample of 300 participants. The results of the study indicated that 45% of the study subjects had good knowledge, 44% had a good attitude towards donating blood, and 33% had good practices. However, when it came to practice, the prevalence was lower. The study concluded that a regular awareness-raising campaign should be implemented at the community level.[12]

A study conducted a cross-sectional analysis of the knowledge and understanding of blood donation amongst 341 medical students at Patiala's Government Medical College in India. A predefined questionnaire and scoring mechanism were used to measure the level of knowledge. The data was analyzed in percentage terms, and the overall knowledge of blood donation was considered to be average. The majority of students, 88.9%, had not donated blood before, and the knowledge level was higher among the old final students, 70.3%, and second-year medical students, 48.7%. The majority of the students, 89.8%, were aware of the appropriate age group to donate blood, 72.5%, and that a minimum gap of 3 months was necessary for donation. However, only 25.5% of the students were aware of the ideal weight required for donation. The results of the study suggest that the practice of donating blood can be improved by improving the knowledge of college students.[13]

Jasim N. al-Asadi (2017) conducted a qualitative cross-section study to assess the knowledge and attitudes of students at Basrah University regarding blood donation. The study was conducted between January and April 2017 and used a Non-Probability Purposive sampling methodology. A structured self-administered questionnaire was collected from a sample of 422 students, of which 393 completed. Only 51% of the total respondents had no prior blood donation experience, while 64% had only donated once. The most common reasons for not donating were not being asked (24%), inconsiderateness (11%), and fear (8%). Adequate knowledge was observed in 66% of the students, while a positive attitude was observed in 68% of the students. The results of the study indicated that students at College of Medicine are younger, more informed, and donated more than those at Administration and Economics, and that a significant proportion of university students have inadequate knowledge of blood donation. They suggested that the education programs and motivational campaigns should be enhanced.[14]

4. Research Methodology

4.1. Research approach

Quantitative research approach involves the judgment about the success of a program, practice, procedure or policies.[15] In view of the nature of the problem under the study and to accomplish the objectives of the study. Quantitative research approach was found to be appropriate to assess an effectiveness of structured teaching program on knowledge regarding blood donation among adults at the selected urban area of Rewa district.

4.2. Research design

The selection of the design depends upon the purpose of the study, research approach and variables to be studied. Quasi experimental research design with one group pre-test post-test.[16] Experimental group was selected for the present study. In quasi experimental research design with one group pre-test post-test, the study subjects are selected through non provability purposive sampling.

4.3. Instruments

In the process of development of tool, the investigator reviewed the research and non- research literature and discussion with experts in the nursing field. This helped in the selection of the content for development of the tool. Self-Structured Knowledge questionnaire is the tool selected for the study. It is considered to be as the most appropriate instrument to elicit the responses from the subject. In this way, there were two tools used.

1. Socio-demographic Questionnaire
2. Self-Structured Knowledge Questionnaire

4.4. Data collection

The written permission was obtained from the selected urban of Rewa prior to the data collection.

1. Informed consent, aim, objective and nature of the study were explained to the adults. Confidentiality was assured to all the subjects to get their co-operation throughout the process of data collection.
2. Sample was selected as per the sampling criteria, the 60 sample were in experimental group.

4.5. Pre-test

The investigator collected data by using the Self Structured Knowledge questionnaire from each respondent, which require Knowledge regarding Blood Donation.

4.6. Implementation of structured teaching program

After pre-test structured teaching program (STP) was administered regarding Blood Donation to those who belong to experimental group.

4.7. Post-test

After five days of administration of structured teaching program post-test was carried out by the investigator by using the same Self Structured Knowledge questionnaire.

The assessment of level of knowledge of adults regarding Blood Donation before and after administering STP.

Table 1: Pre-test and post-test knowledge of adults regarding blood donation

Test	Mean	SD	t value	Df	P value
Pre-test	12.6667	1.94559	33.669	59	.002
Post-test	26.0333	2.38617			

Value significant at P<0 05

The data represented in Table 1 shows that the Pre-test and Post-test Knowledge score of adults regarding Blood Donation. The overall pre-test mean score of the adults was 12.667. The paired t – test' analysis was used to find out the statistical significance on the effectiveness of STP regarding blood donation among adults.

The statistical paired t-test indicates the difference between the pre-tests and post-test knowledge score. Further the mean enhancement score was 26.0333 with S.D value 2.38617. The paired t-test analysis shows that there was a significant increase in knowledge regarding blood donation among adults at selected urban area of Rewa district.

In pre-test only 2 (3.33%) adults had good knowledge, 8 (13.33%) had average knowledge and 50 (83.33%) had poor knowledge regarding blood donation. In post-test 13 (21.66%) adults had good knowledge, 46 (76.66%) had average knowledge and only 1 (1.66%) of them had poor knowledge regarding blood donation.

The mean knowledge score of pre-test of adults is 7.08 with standard deviation 4.49, the mean knowledge score of post-test is17.49 and standard deviation is 4.42. Table 2 reveals that there is gain in knowledge score after the administration of intervention that is structured teaching program.

4.8. Association between pre-test knowledge with selected demographic variables

Table 3 shows the association of demographic variable age of the samples with pre-test knowledge score. The calculated chi-square value obtained 10.015 which is lower than the tabulated value at p value <0.05, which is
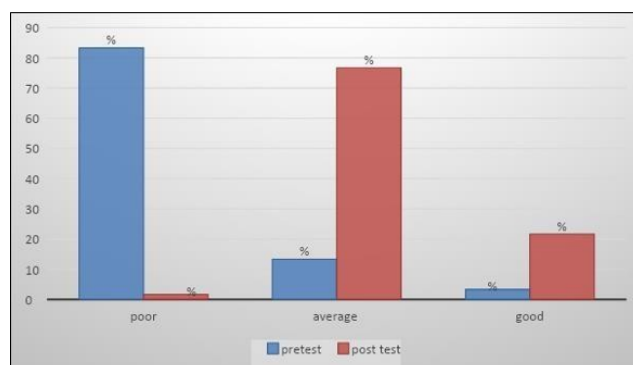
Figure 2: Bardiagram showing distribution of pre and post-test knowledge scores.

statistically non-significant. Thus, it is interpreted that the demographic variable age is not associated with pre-test knowledge score.

Table 4 shows the association of demographic variable educational status of the samples with pre-test knowledge score. The calculated chi-square value obtained 13.015 which is higher than the tabulated value at, p value >0.05, which is statistically significant. Thus, it is interpreted that the demographic variable educational status is significantly associated with pre-test knowledge score.

Table 5 shows the association of demographic variable marital status of the samples with pre- test knowledge score. The calculated chi-square value obtained 19.0749 which is higher than the tabulated value at, p value >0.05, which is statistically highly significant. Thus, it is interpreted that the demographic variable marital status is highly significantly associated with pre-test knowledge score.

Table 6 shows the association of demographic variable dietary pattern of the adults with pret- test knowledge score. The calculated chi-square value obtained 5. 0225 which is lower than the tabulated value at, p value <0.05, which is statistically non-significant. Thus, it is interpreted that the demographic variable dietary pattern is non significantly associated with pre-test knowledge score.

Table 7 shows the association of demographic variable employment status of the adults with pre - test knowledge score. The calculated chi-square value obtained 16.0288 which is higher than the tabulated value at, p value >0.05, which is statistically highly significant. Thus, it is interpreted that the demographic variable employment status is highly significantly associated with pre-test knowledge score.

Table 8 shows the association of demographic variable source of the samples with pre-test knowledge score. The calculated chi-square value obtained 11.0857 which is lower than the tabulated value at, p value <0.05, which is statistically non-significant. Thus, it is interpreted that the demographic variable source of information is non significantly associated with pre-test knowledge score.
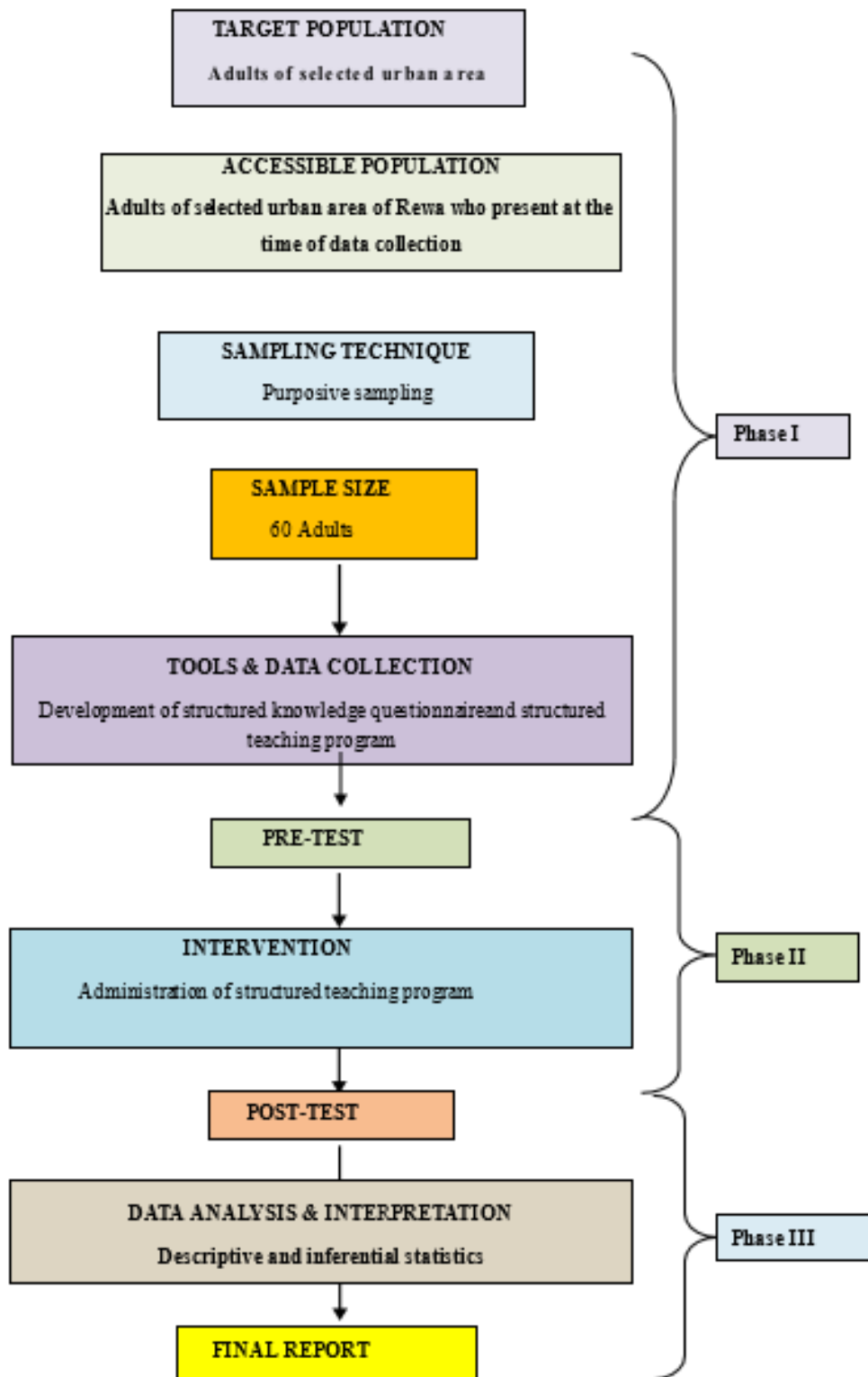
Figure 1: Schematic representation of study design

Table 2: Depicts grade wise distribution of pre and post- test knowledge score of adults regarding blood donation N=60

S.N.	Test	Grade	Range	F	%	Mean	S.D
		Poor	0-10	50	83.33		
1	Pre-test	Average	11-20	8	13.33	7.08	4.94
		Good	21-30	2	3.33		
		Poor	0-10	1	1.66		
2	Post-test	Average	11-20	46	76.66	17.49	4.42
		good	21-30	13	21.66		

Table 3: Associations between pre-test knowledge score and age of the samples (N=60)

Age	Poor	Average	Good	Total	Chi square	Significance
2O-25yrs	13	4	1	18		x2=10.015
26-30yrs	1O	4	1	15		P<0.05non
31-35yrs	12	0	0	12	10.015	Significant
>36yrs	15	0	0	15		At DF 6 P=12.59
Total				60		

Table 4: Association between pre-test knowledge score and educational status of the samples (N=60)

Educational Status	Poor	Average	Good	Total	Chi square	Significance
Higher Secondary	27	2	0	29		x2=13.015 P >0.05
Graduate	7	2	0	19	10.015	Significant At DF 6
Post Graduate	2	4	2	8		P=12.59
Illiterate	14	0	0	4		
Total				60		

Table 5: Associations betweenpre-test knowledge score and maritalstatus of the samples(N=60)

Marital Status	Poor	Average	Good	Total	Chi square	Significance
Single	3	4	0	7		x2=19.0749
Married	42	2	2	46	10.015	P>0.05 Highly
Divorced	3	0	0	3		Significant At
Widow/widower	2	2	0	4		DF 6 P=12.59
Total				60		

Table 6: Association between pre-test knowledge score and dietary pattern of the samples (N=60)

Dietary pattern	Poor	Average	Good	Total	Chi square	Significance
Veg	38	4	2	44		x2=5.0225 P<0.05
Non-veg	12	4	0	16	5. 0225	Non Significant At DF 6 P=5.991
Total				60		

Table 7: Association between pre-test knowledge score and employment status of the samples (N=60)

Employment Status	Poor	Average	Good	Total	Chi square	Significance
Unemployed	14	4	0	18		x2=16.0288
Govt Job	9	4	2	13	10.015	P>0.05 Highly
Private Job	17	0	0	17		Significant At
Other	12	0	0	12		DF 6 P=12.59
Total				60		

Table 8: Association between pre-test knowledge score and source of information of the samples (N=60)

Source of information	Poor	Average	Good	Total	Chi square	Significance
Television	11	4	2	17		x2=11.08357
Radio	10	0	0	10	11.08357	P>0.05
Newspaper	8	4	0	12		Non-Significant
Other	21	0	0	21		At DF 6 P=12.59
Total				60		

5. Result

In pre-test only 2 (3.33%) adults had good knowledge, 8 (13.33%) had average knowledge and 50(83.33%) had poor knowledge regarding blood donation. In post-test 13(21.66%) adults had good knowledge, 46(76.66%) had average knowledge and only 1(1.66%) of them had poor knowledge regarding blood donation.

The mean knowledge score of pre-test of adults is 7.08 with standard deviation 4.49, the mean knowledge score of post-test is17.49 and standard deviation is 4.42. The results reveals that there is gain in knowledge score after the administration of intervention that is structured teaching program mean score of pre-test knowledge score was 12.6667, S.D was 1.94559 whereas mean score of post-test knowledge score was 26.0333 and S.D was 2.38617. The mean enhancement score was 26.0333 with SD value 2.38617.

The calculated chi-square value obtained for age and pretest score 10.015 which is lower than the tabulated value at, p value <0.05, which is statistically non- significant. The calculated chi-square value obtained for educational status and pre-test was 13.015 which is higher than the tabulated value at, p value >0.05, which is statistically significant. The calculated chi-square value obtained for marital status is 19.0749 which is higher than the tabulated value at, p value >0.05, which is statistically highly significant. The calculated chi-square value obtained for dietary pattern and pretest is 5. 0225 which is lower than the tabulated value at, p value <0.05, which is statistically non-significant. The calculated chi-square value obtained for employment status is 16.0288 which is higher than the tabulated value at, p value >0.05, which is statistically highly significant. The calculated chi-square value obtained for source of information 11.0857 which is lower than the tabulated value at, p value <0.05, which is statistically non-significant.

6. Conclusion

The aim of the study was to assess the effectiveness of structured teaching program on knowledge regarding Blood Donation among adults at selected urban area of Rewa (M.P.), The study also spread the knowledge regarding knowledge regarding blood donation which somewhere moulds the attitude also. The reason for taking this study was to spread the knowledge regarding blood donation and also creating awareness. Pre experimental Study was carried out on at selected urban area of Rewa (M.P.) In this study independent variable is the Structured Teaching programme on knowledge regarding blood donation and dependent variables is Knowledge regarding blood donation. The following conclusion were drawn from the finding of the study. The adults did not have adequate knowledge regarding blood donation. The required information regarding blood donation will definitely lead to promote awareness and build healthy society.

7. Source of Funding

None.

8. Conflict of Interest

None.

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Author biography

Archna Prajapati, Nursing Tutor

Suman Singh, Principal

Priyanka Kushwaha, Assistant Professor

Sangeeta Bamaniya, Assistant Professor