

A Study to Evaluate the Effectiveness of Telenursing Programme on Immunization among B.Sc. Nursing Students

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Abstract: Immunization triggers an immune system response by which the vaccine develops long-term protection (immunity) that would normally follow recovery from many naturally occurring infections. By the aims to protect children in the Kingdom of Saudi Arabia and all community groups from diseases, the Ministry of Health (MOH) published the approved version of the vaccination schedule on 01/01/2013 to remind parents of the dates of vaccinations and follow-up. Telehealth and telenursing has become the new reality in studying nursing. A quasi experimental study was done to evaluate the effectiveness of telenursing programme on creating awareness and knowledge regarding immunization and KSA vaccination schedule among B.Sc..nursing students at Applied Medical Science College , Alnamas.

Aim/objectives of the study:

- To assess the demographic variables of B.Sc. Nursing students
- To assess the pretest awareness regarding immunization and KSA vaccination schedule.
- To assess the pretest knowledge regarding immunization and KSA vaccination schedule.
- To assess the post test awareness regarding immunization and KSA vaccination schedule.
- To assess the post test knowledge regarding immunization and KSA vaccination schedule.
- To evaluate the effectiveness of telenursing programme on immunization and KSA vaccination schedule.
- To associate the post test knowledge regarding immunization and KSA vaccination schedule with selected demographic variables.

Hypothesis: Null Hypothesis

Methods: A Quasi Experimental approach is used in this study. 25 students were selected by simple random sampling method. The tool used for the study includes demographic data , Awareness and Knowledge Assessment Questionnaire, Power point presentation on immunization and KSA vaccination schedule. After collecting the data, data was analysed using descriptive and inferential statistics. Frequency and percentage were calculated for the demographic characteristics of B.Sc. Nursing students and percentage, mean, standard deviation, mean percentage were calculated for awareness and knowledge level. To see the effectiveness of telenursing programme, “z” test was used.

Result: Regarding the effectiveness of telenursing programme on immunization and KSA vaccination schedule is assessed by ‘z’ test. The study findings reveals that the post-test mean score was higher than the pre-test mean scores of both awareness and knowledge .The ‘z’ value for awareness is -24.29 and P value is < 0.00001 which was significant at 0.05 level. The ‘z’ value for knowledge is -7.6963 and P value is < 0.00001 which was significant at 0.05 level. Regarding the association there was association between post test knowledge score and age, year of study, available apps for video conference and area of residence. There was no association found between post test knowledge score when compared to previous schooling.

Recommendation: Based on the study, nursing students can utilize telenursing programme to give health education in the schools, hospitals, and community. Also they can utilize telenursing in both service and academic.

Conclusion: The study reveals that telenursingprogramme is effective in creating awareness and knowledge regarding immunization and KSA vaccination schedule among B.Sc. Nursing students at Applied Medical Science College, Alnamas.

Keywords: Quasi Experimental approach, telenursing, immunization, nursing students.

1. INTRODUCTION

"Prevention Is Better Than Cure"

Immunization is the process by which a person or animal becomes protected against a disease through an enhancement of their immune response. This term is different from vaccination which is a form of immunization where the body learns to recognize a particular foreign object (active immunization). Passive immunization can be provided by administering external antibodies that will temporarily help strengthen the body's response without inducing memory against a specific foreign object.

The World Health Organization monitors vaccination schedules across the world, noting what vaccines are included in each country's program, the coverage rates achieved and various auditing measures. The World Health Organization (WHO) initiated the Expanded Program on Immunization (EPI) in May 1974 with the objective to vaccinate children throughout the world.



The main vaccinations identified in the Vaccination Certificate, from birth to entering the first primary grade, aims to protect children in the Kingdom of Saudi Arabia and all community groups from diseases targeted by immunization, keep the Kingdom free of polio, as well as getting rid of measles, rubella, mumps, in addition to reducing the infection with any of these diseases targeted by immunization. Within the framework of the keen interest shown by the Ministry of Health (MOH) to achieve these goals, and to remind parents of the dates of vaccinations and follow-up, MOH KSA (Kingdom Of Saudi Arabia) published the approved version of **the vaccination schedule** on 01/01/2013.

Teaching the skills and continuing education which is basic to evidenced based nursing care can be carried out by videoconferencing. The delivery of nursing service with communication technology through distance is called as telenursing. Nurses' use technologies such as the Internet, computers, telephones, digital assessment tools, and telemonitoring equipment in their practice to assess, plan, intervene, and evaluate the outcomes of nursing care. This technique has expanded the scope of nursing practice across the states and international borders and it is also changing the face of standard nursing practice. This is now a upcoming carrier option for the nurses of 21st century. In America 40% home services are telehealth based. It is believed that in United States half of nurses home visits are replaced by telenursing. In this new era of computerized record keeping and the use or access to computers by the American public telenurses are going to be in great demand as more people begin to utilize telenursing resources. The use of telenursing is launching a new way for nurses to interrelate with clients and is rapidly becoming a key role in the way consumers are provided with nursing care (Rutledge, C. M., Haney, T., Bordelon, M., Renaud, M., & Fowler, C. 2014).

2. SIGNIFICANCE OF THE STUDY

Each year, vaccines prevent more than 2.5 million child deaths globally. An additional 2 million child deaths could be prevented each year through immunization with currently available vaccines. Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to avert between 2 and 3 million deaths each year. It is one of the most cost-effective health investments, with proven strategies that make it accessible to even the most hard-to-reach and vulnerable populations. It has clearly defined target groups; it can be delivered effectively through outreach activities; and vaccination does not require any major lifestyle change.

The proposed study serves the nursing students with information and experience in telenursing to acquire knowledge regarding immunization and awareness on KSA vaccination schedule. It also foster the personal development of nursing students. The proposed study will benefits and help the future researcher as their guide.

In Kingdom Of Saudi Arabia the Ministry of Health (MOH) put efforts to maintain the health of children in the Kingdom, and protect them and the community groups of diseases, it established **Vaccinations Reminder Service(e-service)** to remind parents of the deadlines of the basic vaccinations against diseases targeted by immunization according to the

MOH new vaccinations schedule , in terms of sending a reminding message of the vaccination date on the mobile phone, e-mail by the vaccination child week, or via the smartphone apps on the page of MOH Apps for Smartphones.

There is a vast amount of research on the use of telenursing, especially in caring for homebound, chronically ill patients (Kamei et al., 2013, Lindberg et al., 2013 and McLean et al., 2011). There is less research, however, on telenursing training. Although the importance of integrating telenursing into nursing curricula has been repeatedly stressed (Gallagher-Lepak et al., 2009, Glinkowski et al., 2013, Grady, 2014 and Husson et al., 2013), few studies have examined telenursing training during undergraduate nursing education. In order to prevent the disturbance in the academic teaching schedule in the class room and lack of time in class room discussion among all different level of students at the same time, we planned to give teaching to the students regarding immunization and KSA vaccination schedule through videoconference-telenursing at home after the college timing. Also we hope that, teaching through videoconference - telenursing can create awareness and knowledge on immunization and vaccination schedule among the nursing students. Through telenursing, nurses can provide monitoring, education, follow-up, remote data collection and interventions, pain management, family support, and multidisciplinary care in an innovative way, so I select this research study under the title “a quasi experimental study to evaluate the effectiveness of telenursing on creating awareness and knowledge regarding immunization and KSA vaccination schedule among B.Sc. Nursing students at Applied Medical Science College , Alnamas”.

Statement of the problem:

A quasi experimental study to evaluate the effectiveness of telenursing programme on creating awareness and knowledge regarding immunization and KSA vaccination schedule among B.Sc. Nursing students at Applied Medical Science College, Alnamas.

3. AIMS

To evaluate the effectiveness of telenursing programme on creating awareness and knowledge regarding immunization and KSA vaccination schedule among B.Sc. Nursing students at Applied Medical Science College, Alnamas.

Objectives:

1. To assess the demographic variables of B.Sc. Nursing students
2. To assess the pretest awareness regarding immunization and KSA vaccination schedule.
3. To assess the pretest knowledge regarding immunization and KSA vaccination schedule.
4. To assess the post test awareness regarding immunization and KSA vaccination schedule.
5. To assess the post test knowledge regarding immunization and KSA vaccination schedule.
6. To evaluate the effectiveness of telenursing programme on immunization and KSA vaccination schedule.
7. To associate the post test knowledge regarding immunization and KSA vaccination schedule with selected demographic variables.

OPERATONAL DEFINITION:

Telenursing: In this study telenursing can be defined as a means of providing video conference teaching on immunization and KSA vaccination Schedule to the B.Sc. Nursing while at home, using telecommunication devices.

Immunization: Immunization can be defined as the process of protecting an individual from disease through the introduction of a live, killed or partial component of the invading organism into the individual's system

B. Sc. Nursing Students: B.Sc. Nursing students are the candidates who were doing undergraduate degree program in nursing and capable of rendering health care service in different settings, also utilize their skills in teaching , supervision and administration area

HYPOTHESIS:

Null Hypothesis:

Ho₁: There is no significant relationship between pretest and post test awareness regarding immunization and KSA vaccination schedule.

Ho₂: There is no significant relationship between pretest and post test knowledge regarding immunization and KSA vaccination schedule.

Ho₃: There is no significant association of post test knowledge regarding immunization and KSA vaccination schedule with selected demographic variables

ASSUMPTION:

1. B.Sc. Nursing students may have inadequate awareness regarding immunization and KSA vaccination schedule.
2. B.Sc. Nursing students may have inadequate knowledge regarding immunization and KSA vaccination schedule.

DELIMITATION:

- The data collection is delimited to two weeks
- The students who are willing to participate during data collection

PROJECTED OUTCOME:

1. The study will improve the B.Sc Nursing students awareness and knowledge about immunization and KSA vaccination schedule.
2. The telenursing programme will effective for the B.Sc Nursing students.

LIMITATION:

- The study was conducted among B.Sc Nursing students in Applied Medical Science College For Females Alnamas. So generalization can be done but with caution.

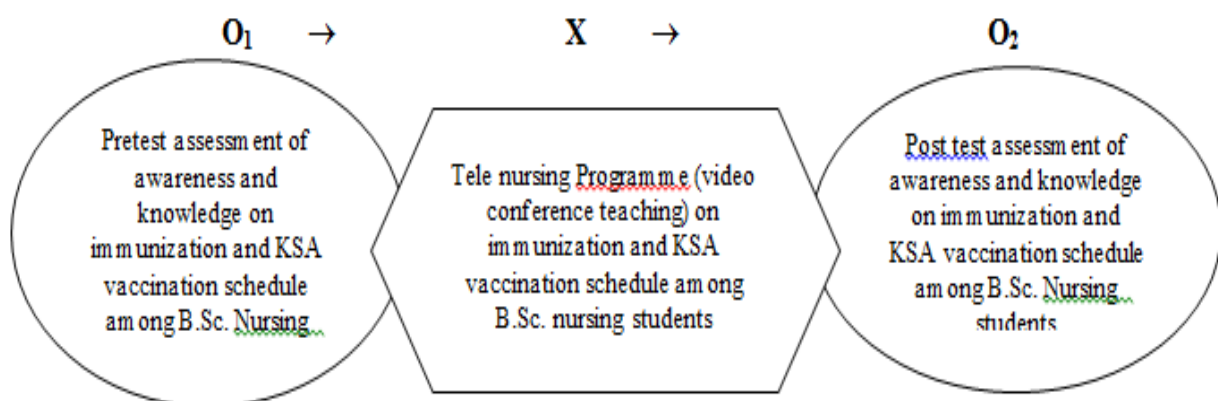
4. METHODOLOGY

This chapter includes research design, the setting of the study, the sample size, the criteria for sample selection, the methods of sample selection the instruments and tools for data collection, the technique of data analysis and protection of human subjects.

Research Approach:

The research approach used for this study was a Quasi Experimental approach. **Research Design:**

One Group Pre Test And Post Test Quasi Experimental Research Design Was Adopted In This Study..



The diagrammatic representation design given below

Setting of the studyL:

The study was conducted in Applied Medical Science College For Females Alnamas. This setting was selected because of the availability of participants and feasibility of conducting the study. Researcher's convenience and familiarity with settings were added reason.

Population:

The target population for this study is students from level 1 to level 8 and between 17 to 21 years old B.Sc. Nursing students from Applied Medical Science College For Females Alnamas.

Sample:

Sample consisted of 25B.Sc.Nursing students of Applied Medical Science College For Females Alnamas.

Sampling Technique:

Among 200 students ,25B.Sc.Nursing students were selected by simple random sampling method.

Criteria for sample selection:

Inclusion Criteria:

- I. The Students who are willing to participate in the study.
- II. The Students who are having video conference facility in their electronic device like computer, smart phone etc for administering telenursing programme.

Exclusion Criteria:

- I. The students who are not willing to utilize the leisure time by answering the tools.
- II. The Students who are not allowed by the parents to participate skype video conference teaching(tele nursing programme).

Research tool and technique:

The tool used for the research study was demographic data , awareness & knowledge questionnaire to assess the awareness & knowledge regarding immunization and KSA vaccination schedule and power point presentation through vedio conference (tele nursing) programme to improve the awareness & knowledge of B.Sc Nursing students.

Description of the tool:

The tool used for the study includes two section that is section I section II and section III.

Section I

Section I had items related to demographic data consists of age, year of study, previous schooling, Available Apps for videoconference (Telenursing programme), area of residence.

Section II

This comprised of Part A :10 awareness questions to assess the awareness and Part B: 10 multiple choice questions to assess the knowledge regarding immunization and KSA vaccination schedule among B.Sc..nursing students at Applied Medical Science College, Alnamas

Section III

Power point presentation on immunization and KSA vaccination schedule through video conference (tele nursing) programme.

Scoring Procedure:

The subjects were classified into three categories based on their awareness .The score for the level of awareness is calculated by awareness questionnaire. The students are classified according to the range as follows.

Between (8-10 Score) 80 and 100% - Good

Between (4-7.5 Score) 40 and 75% - Fair

Below (0-3.5Score) 0 and 35 % - Inadequate

The subjects were classified into three categories based on their knowledge. The score for the level of knowledge is calculated by knowledge questionnaire. The students are classified according to the range as follows.

Between (8-10 Score) 80 and 100% - Good

Between (4-7.5 Score) 40 and 75% - Average

Below (0-3.5Score) 0 and 35 % - Inadequate

Data Collection Procedure:

Before conducting the study, formal permission was obtained. The period of data collection was done for two weeks. The researcher introduced self to each subject and explained the purpose of the study. Informed consent from the participants also was obtained. Pre-test of awareness & knowledge was assessed by using the validated questionnaire. Planned power point presentation video conference (tele nursing) programme on Immunization And KSA vaccination Schedule was administered in one session following the pre-test. A post-test on awareness & knowledge regarding Immunization And KSA vaccination Schedule was conducted one week after the pre-test. The total time duration taken by respondents to complete the questionnaire was thirty minutes.

Plan for data analysis:

The collected data was organized, tabulated and analyzed based on the objectives of the study.

S. No	Date analysis	Methods	Remarks
1.	Descriptive statistics	Frequency percentage	To assure the demographic variables of B.Sc. Nursing students
		Mean, standard deviation.	To assess the pre and post-test awareness & knowledge score
2.	Inferential statistics	“Z” test	To evaluate the effectiveness of telenursing programme on immunization and KSA vaccination schedule.
		Chi-square test	To associate the post test knowledge regarding immunization and KSA vaccination schedule with selected demographic variables.

Protection of human subjects:

Formal permission was obtained before starting the study. The informed consent was obtained from each participants of the study before starting the data collection. Assurance was given to the subject that the anonymity of each individual would be obtained.

5. RESULTS

This section shows the result findings of the study which is based on data analysis and interpretation of data collected from the participants. The data collected during the present study were analysed based on the objectives formulated for the study.

Organization of the Findings:

The data has been tabulated and organized as follows:

- **Section A :** Distribution of demographic variables.
- **Section B:** Assess the pretest awareness of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.
- **Section C:** Assess the pretest knowledge of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.
- **Section D:** Assess the post test awareness of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.
- **Section E:** Assess the post test knowledge of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.
- **Section F:** Determine the effectiveness of telenursing programme on immunization and KSA vaccination schedule.

➤ **Section G:** Association of post-test knowledge regarding immunization and KSA vaccination schedule with selected demographic variables.

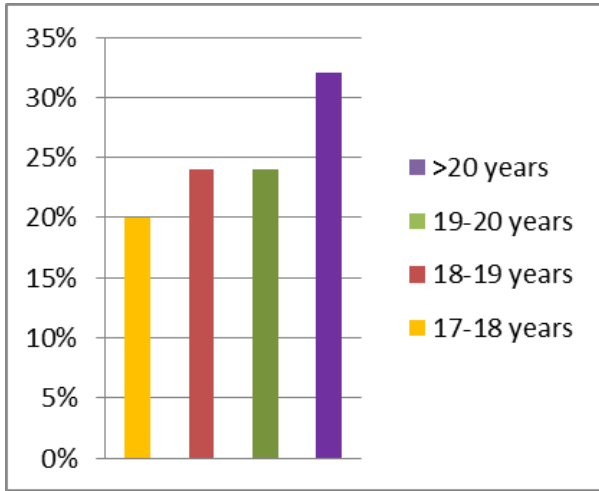
SECTION A: Distribution of demographical variables

A sample of 25 B.Sc. Nursing students were selected for the study. The demographic data collected include of age, year of study, previous schooling, Available Apps for videoconference (Tele nursing programme), area of residence.

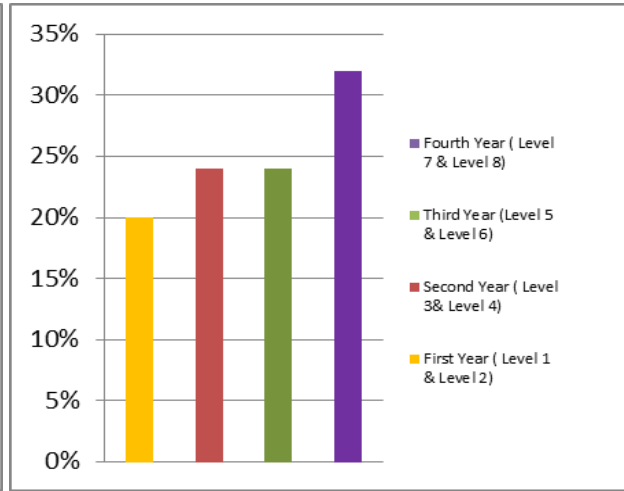
Table 1: Frequency and percentage distribution of demographic variables of B.Sc. Nursing Students N=25

S.No	Demographic Data	Group (f)	Percentage (%)
1.	Age		
	17-18 years	5	20%
	18-19 years	6	24%
	19-20years	6	24%
	>20 years	8	32%
2.	Year of study		
	First year(Level 1& Level 2)	5	20%
	Second year (Level 3& Level 4)	6	24%
	Third year(Level 5& Level 6)	6	24%
	Fourth year(Level 7& Level 8)	8	32%
3.	Previous schooling		
	Government school	12	48%
	Private school	8	32%
	International school	5	20%
4.	Available Apps for videoconference (Telenursing programme)		
	Face book video messenger	8	32%
	Skype Id	9	36%
	IMO	4	16%
	Talkery	4	16%
5.	Area Of Residence		
	Urban	11	44%
	Rural	14	56%

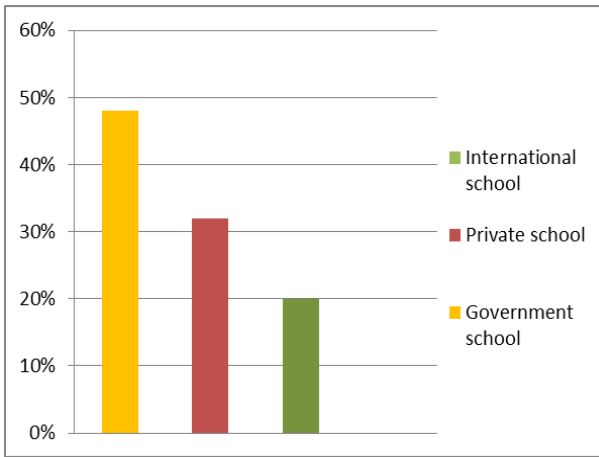
The data presented in table 1 shows that 20% of the participants were between the age of 17-18 years, 24% of the participants were between the age of 18-19 years, 24% of participants were between the age of 19-20 years, and 32% of the participants were above 20 years. Regarding to year of study 20% of the students were from first year(Level 1& Level 2), 24% of the students were from second year(Level 3& Level 4), 24% of the students were from third year(Level 5& Level 6) and 32% of the students were from fourth year(Level 7& Level 8). Regarding to the previous schooling, 48% of the students had education from Government school, 32% of the students had education from private school and 20% of the students had education from International school. Regarding the Available Apps for videoconference (Telenursingprogramme), 32% were having Face book video messenger, 36% were having Skype Id, 16% were having IMO and 16% were having Talkery. Regarding the area of residence, 44% of the students are living is urban area, remaining 56% are living is rural area.



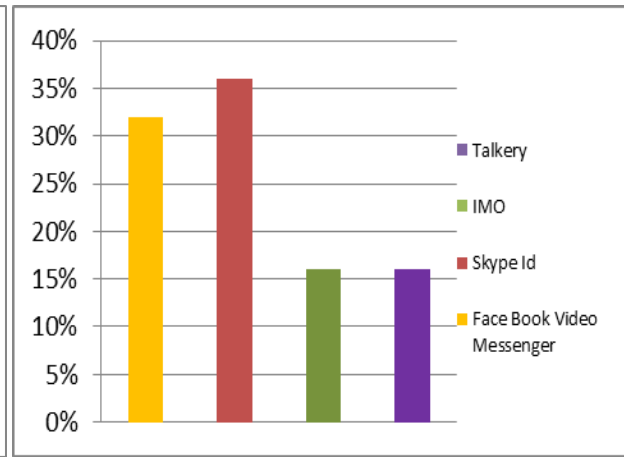
Distribution Of Participants According To Their Age



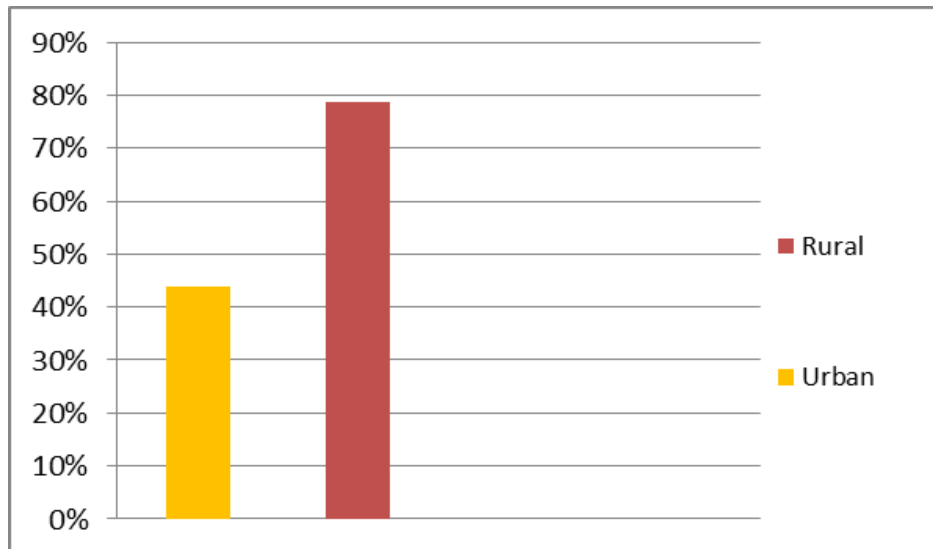
Distribution Of Participants According To Their Year Of Study



Distribution Of Participants According To Their Previous Schooling



Distribution of Participants according To Their Availability of Apps for videoconference (Telenursingprogramme)



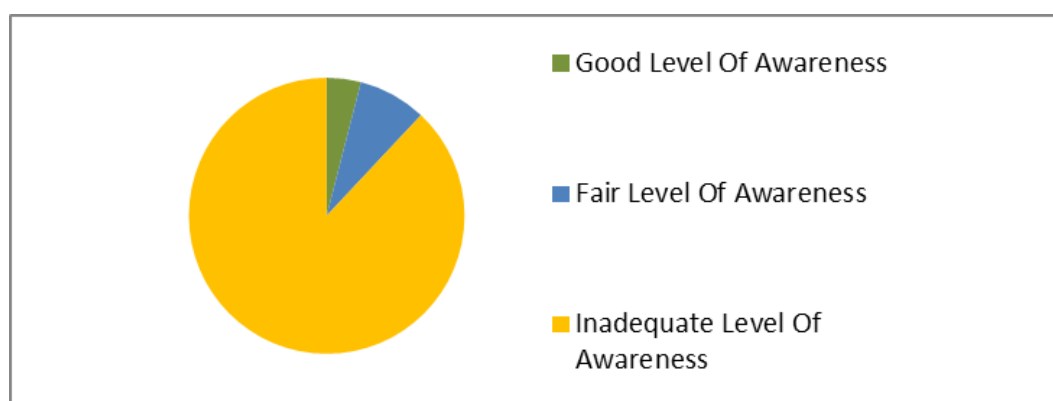
Distribution Of Participants According To Their Area Of Residence

Section B: Assess the pretest awareness of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.

Table 2. Distribution of respondents according to their immunization and KSA Vaccination schedule awareness score in pre-test, N = 25

Sl.No	Level of Awareness	Frequency (F)	Percentage (%)
1.	Good(8-10 Score) 80 and 100%	1	4%
2.	Fair(4-7.5 Score) 40 and 75%	2	8%
3.	Inadequate(0-3.5Score) 0 and 35 %	22	88%
Total		25	100%

The data presented in table 2 reveals that 1 participants (4%) are having good level of awareness, 2 participants (8%) are having fair level of awareness, and 22 participants (88%) are having inadequate level of awareness.



Distribution Of Participants According To Their Pre- Test Level Of Awareness

Table 3: Pre Test response to selected questions on awareness regarding immunization and KSA vaccination schedule

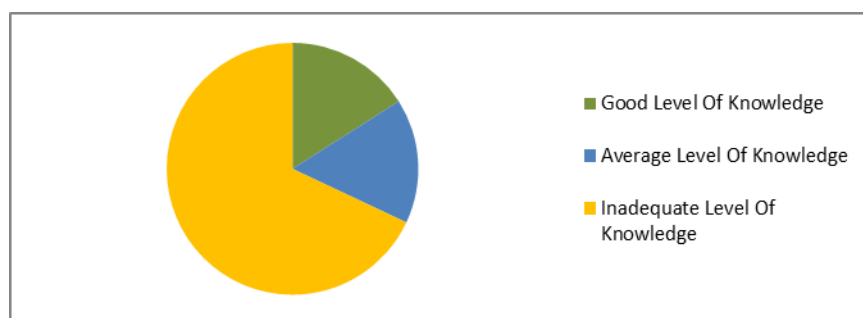
Sl.No	Question	Yes		No	
		Frequency	Percentage	Frequency	Percentage
1.	Have you heard about immunization and vaccination schedule before?	13	52%	12	48%
2.	Does vaccination available for all communicable and non-communicable disease?	17	68%	8	32%
3.	Have you heard about e-service (Vaccinations Reminder service) of MOH Kingdom of Saudi Arabia ?	7	28%	18	72%
4.	Does immunization harmful to children?	15	60%	10	40%
5.	Do you know the theme of world immunization week of the year 2015-2016?	8	32%	17	68%
6.	Do you know when we celebrate the world immunization day ?	7	28%	18	72%
7.	Have you participated in immunization programme before?	5	20%	20	80%
8.	Have you heard about vaccine preventable diseases before?	4	16%	21	84%
9.	Do you know the types of immunization ?	3	12%	22	88%
10.	Do you know about the hazards of immunization ?	2	8%	23	92%

Section C: Assess the pretest knowledge of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.

Table 4. Frequency and percentage distribution of knowledge regarding immunization and KSA Vaccination schedule in pre-test, N = 25

Sl.No	Level of Knowledge	Frequency (F)	Percentage (%)
1.	Good(8-10 Score) 80 and 100%	4	16%
2.	Average (4-7.5 Score) 40 and 75%	4	16%
3.	Inadequate(0-3.5Score) 0 and 35 %	17	68%
	Total	25	100%

The data presented in table 4 reveals that 4 participants (16%) are having good level of knowledge , 4 participants (16%) are having average level of knowledge, and 17 participants (68%) are having inadequate level of knowledge.



Distribution Of Participants According To Their Pre Test Level Of Knowledge

Section D: Assess the post test awareness of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.

Table 5. Distribution of respondents according to their immunization and KSA Vaccination schedule awareness score in post-test, N = 25

Sl.No	Level of Awareness	Frequency (F)	Percentage (%)
1.	Good(8-10 Score) 80 and 100%	25	100%
2.	Fair(4-7.5 Score) 40 and 75%	0	0 %
3.	Inadequate(0-3.5Score) 0 and 35 %	0	0 %
	Total		

The data presented in table 5 reveals that all 25 participants (100%) are having good level of awareness,.

Table 6: Response to selected questions on awareness regarding immunization and KSA vaccination schedule

Sl.No	Question	Yes		No	
		Frequency	Percentage	Frequency	Percentage
1.	Have you heard about immunization and vaccination schedule before?	25	100%	-	-
2.	Does vaccination available for all communicable and non-communicable disease?	-	-	25	100%
3.	Have you heard about e-service (Vaccinations Reminder service) of MOH Kingdom of Saudi Arabia ?	25		-	-
4.	Does immunization harmful to children?	-	-	25	100%
5.	Do you know the theme of world immunization week of the year 2015-2016?	25	100%	-	-
6.	Do you know when we celebrate the world immunization day ?	25	100%	-	-
7.	Have you participated in immunization programme before?	5	20%	20	80%
8.	Have you heard about vaccine preventable diseases before?	4	16%	21	84%
9.	Do you know the types of immunization ?	25	100%	-	-
10.	Do you know about the hazards of immunization ?	25	100%	-	-

Section E: Assess the post test knowledge of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.

Table 7. Frequency and percentage distribution of knowledge regarding immunization and KSA Vaccination schedule in post-test, N = 25

Sl.No	Level of Knowledge	Frequency (F)	Percentage (%)
1.	Good(8-10 Score) 80 and 100%	15	60%
2.	Average (4-7.5 Score) 40 and 75%	10	40%
3.	Inadequate(0-3.5Score) 0 and 35 %	0	0%
	Total	25	100%

The data presented in table 7 reveals that 15 participants (60%) are having good level of knowledge , 10 participants (40%) are having average level of knowledge, and there is no participants under inadequate level of knowledge.

Table 8: Mean and Standard deviation of pre-test and post-test awareness regarding immunization and KSA Vaccination schedule, N=25

Variable	Mean	Standard Deviation
Pre test	2.54	1.383
Post test	9.64	0.480

Table 8 reveals that the mean, standard deviation of pre-test and post-test awareness regarding immunization and KSA vaccination schedule . It shows that the mean value of pretest is 2.54 and standard deviation is (SD + 1.38) and the mean value of post-test is 9.64 and standard deviation is (SD + 0.48)

Table 9: Mean and Standard deviation of pre-test and post-test knowledge regarding immunization and KSA Vaccination schedule, N=25

Variable	Mean	Standard Deviation
Pre test	3.84	2.19
Post test	7.8 5	1.35

Table 9 reveals that the mean, standard deviation of pre-test and post-test knowledge regarding immunization and KSA vaccination schedule . It shows that the meanvalue of pretest is 3.84 and standard deviation is (SD + 2.19) and the mean value of post-test is 7.85 and standard deviation is (SD + 1.35)

Section F: Determine the effectiveness of telenursingprogramme on immunization and KSA vaccination schedule.

Table 10: Comparison of mean, standard deviation and ‘z’ value scores of B.Sc. Nursing Students awareness in pre-and post-test. N= 25

S. No	Variable	Mean	SD	‘z’	Table value
1.	Pre test	2.54	1.383	-24.29	0.0078
2.	Post test	9.64	0.480	P-Value is < 0.00001 The result is significant at p < 0.05	

Table 11: Comparison of mean, standard deviation and ‘z’ value scores of B.Sc. Nursing Students knowledge in pre-and post-test. N= 25

S. No	Variable	Mean	SD	‘z’	Table value
1.	Pre test	4.92	2.49	-7.6963	0.2451
2.	Post test	7.8	1.35	P-Value is < 0.00001 The result is significant at p < 0.05	

Table 10 & 11 showed that mean score of pre-test and post-test score of B.Sc. Nursing students awareness & knowledge regarding immunization and KSA vaccination schedule. Post-test mean score was higher than the pre-test mean scores of both awareness and knowledge .The ‘z’ value for awareness is -24.29 and P value is< 0.00001 which was significant at 0.05 level. The ‘z’ value for knowledge is-7.6963 and P value is < 0.00001 which was significant at 0.05 level.

Section G: Association of post-test knowledge regarding immunization and KSA vaccination schedule with selected demographic variables.

Table 12 : Association of post-test knowledge scores regarding immunization & KSA vaccination schedule among B.Sc. Nursing students with their demographic variable

S.No	Demographic Variables	Pre Test- Level of knowledge						χ^2 Value	Table value
		Good		Average		Inadequate			
		No	%	No	%	No	%		
1.	<i>Age</i> 17-18 years	3	12%	2	8%	-	-	6.25	0.012. The result is significant at $p \leq 0.05$.
	18-19 years	4	16%	2	8%	-	-		
	19-20 years	3	12%	3	12%	-	-		
	>20 years	5	20%	3	12%	-	-		
2.	<i>Year of study</i> First year(Level 1& Level 2)	3	12%	2	8%	-	-	6.25	0.012. The result is significant at $p \leq 0.05$.
	Second year (Level 3& Level 4)	4	16%	2	8%	-	-		
	Third year(Level 5& Level 6)	3	12%	3	12%	-	-		
	Fourth year(Level 7& Level 8)	5	20%	3	12%	-	-		
3.	<i>Previous schooling</i> Government school	7	28%	5	20%	-	-	0.167	0.683. The result is <i>not</i> significant at $p \leq 0.05$.
	Private school	6	24%	2	8%	-	-		
	International school	3	12%	2	8%	-	-		
4.	<i>Available Apps for videoconference (Telenursingprogramme)</i> Face book video messenger	5	20%	3	12%	-	-	6.0	0.014. The result is significant at $p \leq 0.05$.
	Skype Id	6	24%	3	12%	-	-		
	IMO	3	12%	1	4%	-	-		
	Talkery	2	8%	2	8%	-	-		
5.	<i>Area Of Residence</i> Urban	7	8%	4	8%	-	-	4.006.	0.045. The result is significant at $p \leq 0.05$.
	Rural	11	8%	3	8%	-	-		

The Chi square values were calculated to find out the association (table 12) between post- test knowledge of B.Sc. Nursing students with selected demographic variables. There was association between post test knowledge score and age, year of study, available apps for video conference and area of residence. There was no association found between post test knowledge score when compared to previous schooling.

6. DISCUSSION

This chapter attempts to discuss the findings of the study as per objectives. These findings are discussed under the following headings.

➤ The first objective of the study was to assess the Distribution of demographical variables

❖ The data shows that 20% of the participants were between the age of 17-18 years, 24% of the participants were between the age of 18-19 years, 24% of participants were between the age of 19-20 years, and 32% of the participants were above 20 years.

❖ Regarding to year of study 20% of the students were from first year(Level 1& Level 2), 24% of the students were from second year(Level 3& Level 4), 24% of the students were from third year(Level 5& Level 6) and 32% of the students were from fourth year(Level 7& Level 8).

❖ Regarding to the previous schooling, 48% of the students had education from Government school, 32% of the students had education from private school and 20% of the students had education from International school.

❖ Regarding the Available Apps for videoconference (Telenursing programme), 32% were having Face book video messenger, 36% were having Skype Id, 16% were having IMO and 16% were having Talkery.

❖ Regarding the area of residence, 44% of the students are living is urban area, remaining 56% are living is rural area.

➤ **The second objective of the study was to assess the pretest awareness of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.**

❖ An in-depth investigation into pre test assessment of awareness reveals that 1 participants (4%) are having good level of awareness, 2 participants (8%) are having fair level of awareness, and 22 participants (88%) are having inadequate level of awareness.

➤ **Third objective of the study was assess the pretest knowledge of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.**

❖ The pre test assessment of knowledge score reveals that 4 participants (16%) are having good level of knowledge , 4 participants (16%) are having average level of knowledge, and 17 participants (68%) are having inadequate level of knowledge.

➤ **Fourth objective of the study was to assess the post test awareness of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.**

❖ The post test assessment of awareness reveals that all 25 participants (100%) are having good level of awareness,.

➤ **Fifth objective of the study was to assess the post test knowledge of B.Sc. Nursing students regarding immunization and KSA vaccination schedule.**

❖ The post test assessment of knowledge reveals that 15 participants (60%) are having good level of knowledge , 10 participants (40%) are having average level of knowledge, and there is no participants under inadequate level of knowledge.

➤ **Sixth objective of the study was to determine the effectiveness of telenursingprogramme on immunization and KSA vaccination schedule.**

❖ By comparing the mean, standard deviation and 'z' value scores of B.Sc. Nursing Students awareness & knowledge in pre-and post-test. Post-test mean score was higher than the pre-test mean scores of both awareness and knowledge .The 'z' value for awareness is -24.29 and P value is < 0.00001 which was significant at 0.05 level. The 'z' value for knowledge is -7.6963 and P value is < 0.00001 which was significant at 0.05 level.

➤ **Seventh objective of the study was to association of post-test knowledge regarding immunization and KSA vaccination schedule with selected demographic variables.**

❖ The Chi square values were calculated to find out the association between post- test knowledge of B.Sc. Nursing students with selected demographic variables. There was association between post test knowledge score and age, year of study, available apps for video conference and area of residence. There was no association found between post test knowledge score when compared to previous schooling.

MAJOR FINDINGS OF THE STUDY: The study findings shows that 20% of the participants were between the age of 17-18 years, 24% of the participants were between the age of 18-19 years, 24% of participants were between the age of 19-20 years, and 32% of the participants were above 20 years. 20% of the students were from first year(Level 1& Level 2), 24% of the students were from second year(Level 3& Level 4), 24% of the students were from third year(Level 5& Level 6) and 32% of the students were from fourth year(Level 7& Level 8). 48% of the students had education from Government school, 32% of the students had education from private school and 20% of the students had education from International school. 32% were having Face book video messenger, 36% were having Skype Id, 16% were having IMO and 16% were having Talkery. 44% of the students are living is urban area, remaining 56% are living is rural area.The pre test assessment of awareness reveals that 1 participants (4%) are having good level of awareness, 2 participants (8%) are having fair level of awareness, and 22 participants (88%) are having inadequate level of awareness.The pre test

assessment of knowledge score reveals that 4 participants (16%) are having good level of knowledge , 4 participants (16%) are having average level of knowledge, and 17 participants (68%) are having inadequate level of knowledge. The post test assessment of awareness reveals that all 25 participants (100%) are having good level of awareness,. The post test assessment of knowledge reveals that 15 participants (60%) are having good level of knowledge , 10 participants (40%) are having average level of knowledge, and there is no participants under inadequate level of knowledge. To determine the effectiveness of telenursing programme on immunization and KSA vaccination schedule 'z' test is administered .Post-test mean score was higher than the pre-test mean scores of both awareness and knowledge .The 'z' value for awareness is -24.29 and P value is < 0.00001 which was significant at 0.05 level. The 'z' value for knowledge is -7.6963 and P value is < 0.00001 which was significant at 0.05 level.The Chi square values were calculated to find out the association between post- test knowledge of B.Sc. Nursing students with selected demographic variables. There was association between post test knowledge score and age, year of study, available apps for video conference and area of residence. There was no association found between post test knowledge score when compared to previous schooling. The study reveals that telenursingprogramme is effective in creating awareness and knowledge regarding immunization and KSA vaccination schedule among B.Sc. Nursing students at Applied Medical Science College, Alnamas .

7. RECOMMENDATION

Based on the study, the investigator proposed following recommendations:

Nursing service

- ✦ Mothers must be encouraged to attend the immunization programme in primary health centers.
- ✦ Nurse as the change agent, can introduce telenursing in immunization programme to create awareness & impart knowledge also act as a reminder regarding the vaccination date.

Nursing education

- ✦ Imparting the concepts of telenursing to nursing students.
- ✦ Nursing students can utilize telenursing to give health education in the schools, hospitals, and community. Also they can utilize telenursing in both service and academic .

Nursing administration

- ✦ Nursing personnel can organize continuing nursing education programme through telenursing in all health sectors.

8. SUMMARY

A quasi experimental study was carried out to evaluate the effectiveness of telenursing programme on creating awareness and knowledge regarding immunization and KSA vaccination schedule among B.Sc. Nursing students at Applied Medical Science College , Alnamas, The total number of students in the college is around 200. Among this 25 students were selected for the study by simple random sampling techniques. After getting the formal permission , the effectiveness of telenursing programme on creating awareness and knowledge regarding immunization and KSA vaccination schedule among B.Sc. Nursing students were assessed by using the tool consist of demographic data, awareness & knowledge questionnaire to assess the awareness & knowledge regarding immunization and KSA vaccination schedule and power point presentation through vedio conference (tele nursing) programme on immunization and KSA vaccination schedule to improve the awareness & knowledge regarding immunization and KSA vaccination schedule . After collecting the data a detailed data analysis was done according to the objectives of the study using descriptive statistics and inferential statistics.Regarding the effectiveness of telenursing programme on immunization and KSA vaccination schedule 'z' test is administered .Post-test mean score was higher than the pre-test mean scores of both awareness and knowledge .The 'z' value for awareness is -24.29 and P value is < 0.00001 which was significant at 0.05 level. The 'z' value for knowledge is -7.6963 and P value is < 0.00001 which was significant at 0.05 level. Regarding the association there was association between post test knowledge score and age, year of study, available apps for video conference and area of residence. There was no association found between post test knowledge score when compared to previous schooling.

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