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International Journal of Advanced Research in Medical, Nursing and Health Sciences

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International Journal of Advanced Research in Medical, Nursing and Health Sciences (IJARMNHS) aims to promote excellence in medical and nursing research, and healthcare with a vision to advance knowledge for practice, education, research and administration in healthcare. The journal intends to disseminate high quality research reviews, clinical and contemporary healthcare issues based articles for the advancement of evidence based healthcare.

The target audience for the journal includes medical and para - medical professionals in all domains and at all hierarchical levels, who are committed to advance practice and professional development on the basis of new knowledge and evidence.

The journal is peer reviewed and published bi-annually. The journal publishes articles related to healthcare of individuals, families and/or community to help them attain or recover health and improve quality of life. Quality articles in the field of education, administration, teaching and learning, are considered for publication.

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EDITORIAL

Dear Readers

I am delighted to serve as the Editor in chief of the International Journal of Advanced Research in Medical, Nursing and Health Sciences (IJARMNHS). It is deliberate to reflect to the new concept and direction of theoretical and clinical research and report of latest advances in health care field. I will do my best to expand the prestige of the journal.

Our journal may provide an ideal forum for exchange of information of scientific papers, innovations in health care facilities, nursing education and administration. Our journal will serve as a venue to explore future trends and applications and for the transmission of information on both theory and practice.

IJARMNHS will gain wide spread acclaim among professionals. Eight shortlisted articles addressing various issues in the field of nursing sciences have been published. I would like to express my gratitude to the eminent personalities, authors, editors, reviewers and all whom have contributed to the success of 2nd issue in 2023.

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A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE AND PRACTICE REGARDING COLOSTOMY CARE AMONG CAREGIVERS OF PATIENTS IN SELECTED HOSPITALS OF UTTAR PRADESH.

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2. Principal, DRIEMS School & College of Nursing, Tangi, Cuttack, Odisha.

Abstract

The primary objective of this study is to assess the efficacy of a structured teaching program in enhancing the knowledge and practice among care givers of colostomy patients regarding care in selected hospitals at Kanpur, Uttar Pradesh. The study employed a pre experimental research design. The samples were chosen using the simple random sampling technique using lottery method. This study included 100 care givers of colostomy patients. The interview method was employed to obtain the data pertaining the knowledge and practice regarding colostomy care among care givers of colostomy patients. The study conceived a test to evaluate the level of knowledge and practice had gained by care givers regarding care of colostomy patients. The data was analyzed with descriptive and inferential statistics by using Statistical Package for Social Sciences. The finding of the study indicates that pretest knowledge score was 25 % poor, 50 % average and 25 % good whereas in posttest 50 % good, 40 % average and 10 % poor with the level of significant at 0.05. Pretest practice score was 30 % good, 40 % and 30 % poor, whereas in posttest 60 % Good, 35 % average and 5 % poor with the level of significant at 0.05. therefore, structure teaching programme is effective in improving knowledge and practice among caregivers of colostomy patients, there was significant in household size in knowledge and living arrangement in practice and selected demographic variables at the level of 0.05.

Introduction:

Colostomy patients undergo a complex treatment with a wide range of adjustments affecting their social and psychological functioning. The formation of the abdominal stoma represents a significant change in the person's life and results in complex emotional, social, physical, and

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psychological concerns. These concerns influence persons' life satisfaction, happiness, and overall quality of life. Having a colostomy does not mean having a lifelong disability. Living well with a colostomy can be achieved through patient preparation, education, and planning. Nurses and other healthcare providers can play a key role in the perception and have a significant impact on how patients and their families adjust to colostomy. However, this role is successful only when nurses are supported by the required knowledge and skills.

Colostomy is a surgically created opening in the abdomen in which a part of the colon is brought outside the abdominal wall to create a stoma through which digested food (feces) passes out of the body into an external pouching system. The care of children with colostomy is a complex, challenging, and lengthy process, despite its temporary status in most children. After stoma formation, care has to be provided to the child by caregivers at home. Hence, caregivers need to be provided with ongoing education and support commencing from preoperative teaching to discharge from the hospital and home care.

Statement f the problem:

A study to assess the effectiveness of structured teaching program on knowledge and practice regarding colostomy care among caregivers of patients in selected hospitals of Uttar Pradesh.

Objectives:

- To assess pre-test knowledge regarding colostomy care among caregivers of patients.
- To assess pre-test practice regarding colostomy care among caregivers of patients.
- To assess the effectiveness of structured teaching program on knowledge and practice regarding colostomy care among caregivers of patients.
- To find the association of post-test knowledge regarding colostomy care among caregivers of patients with selected socio-demographic variables.
- To find the association of post-test practice regarding colostomy care among caregivers of patients with selected socio-demographic variables.

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Hypotheses:

- H1: There will be significant change in level of knowledge regarding colostomy care at statistical significance at p>0.05.
- H2: There will be significant change in level of practice regarding colostomy care at statistical significance at p>0.05

Research Methodology:

Research Approach: Quantitative research approach: Pre- experimental research approach

Research design: Pre-experimental one group pretest-posttest design

Research variables: Independent variables: STP

Dependent Variables: Knowledge and Practice

Setting: The study was conducted in Fortune hospital, Dhanvantri health care and Pratha hospital.

Population: Care givers of Colostomy Patients.

Sample and sample size: Care givers of Colostomy Patients who comes for inclusion criteria. The sample size of this study was 100.

Sampling technique: Simple random sampling technique using lottery method.

Tools: Demographic Variables, Knowledge Questionnaire, Practice Questionnaire, Structured Teaching Programme.

Description of the tool:

It consists of 10 items to collect socio-demographic variables, knowledge questionnaire which consists of 30 items to assess the level of knowledge and 30 items to assess the level of practice of the care givers of colostomy patients. Each question carries 4 mark and the total score was 120. Structured Teaching Programme was taught to increase knowledge and practice level

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among care givers of colostomy patients. The data will be analyzed using descriptive and inferential statistics on the basis of objectives of the study.

Results:

Section: I Demographic variables:

(n=100)

Sl.No.	Variables	Frequency (f)	Percentage (%)
1	Gender		
	Male	65	65
	Female	35	35
2	Age		
	18-24	15	15
	25-34	30	30
	35-44	25	25
	>45	30	30
3	Marital Status		
	Single	20	20
	Married	50	50
	Divorced	15	15
	Separated	15	15
4	No.of children		
	No child	30	30
	1-2	40	40
	>3	30	30
5	Transport mode		
	Personal vehicle	50	50
	Public	30	30
	Bicycle/walking	20	20

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6	Access of information		
	High	40	40
	Moderate	36	36
	Limited	24	24
7	Living Arrangement		
	Alone	15	15
	With partner	40	40
	With family	40	40
	With roommates	5	5
8	Education		
	Bachelor degree	45	45
	Master Degree	20	20
	Others	25	25
9	Religion		
	Hindu	40	40
	Muslim	30	30
	Christian	18	18
	Others	12	12
10	House hold size		
	1-2 members	25	25
	3-4	40	40
	5-6	25	25
	>7	10	10

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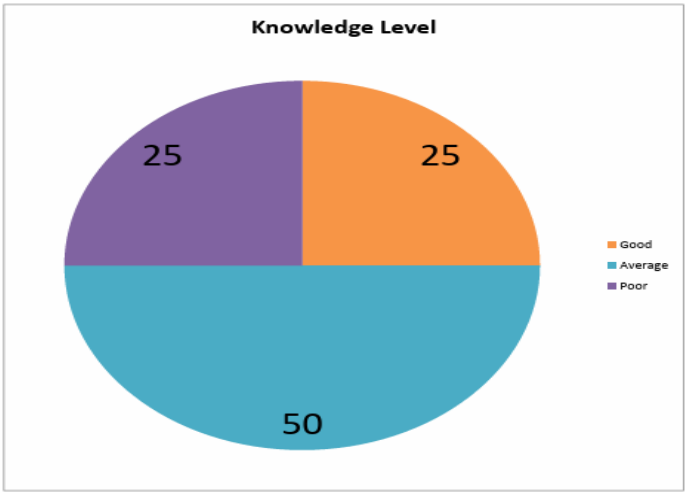
Section II: Distribution of pre test level of knowledge among care givers of colostomy patients.

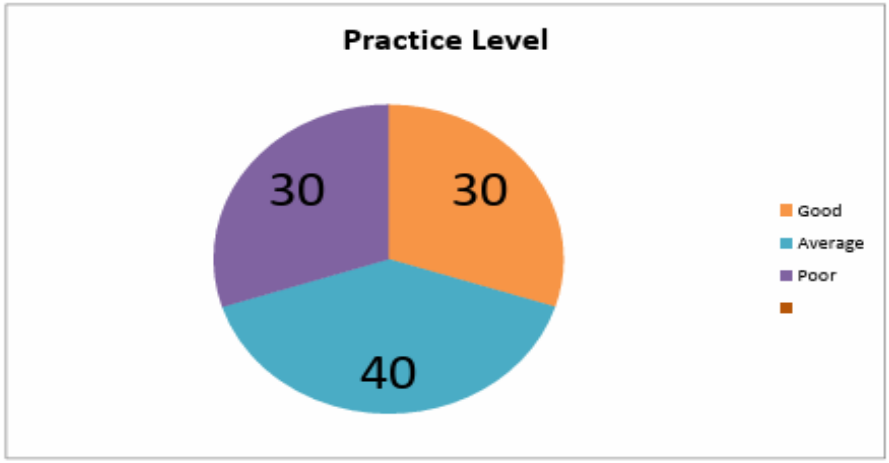
(n=100)



In terms of pretest, 25 % caregivers has good, 50 % caregivers has adequate and 25 % of care givers has poor level of knowledge regarding care of colostomy.

Section III: Distribution of pretest level of practice among care givers of colostomy patients.

(n=100)



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In terms of pretest, 30 % caregivers has good, 40 % caregivers has adequate and 30 % of care givers has poor level of practice regarding care of colostomy.

Section-IV Distribution of posttest level of knowledge among caregivers of colostomy patients

(n=100)

Knowledge score					
Knowledge level	**Percentage**	**Mean**	**SD**	**T value**	**Significant**
Good	**50**	**90**	**15**	**6**	*****
Average	**40**				
Poor	**10**				

In terms of posttest, 50 % caregivers has good, 40 % caregivers has adequate and 10 % of care givers has poor level of knowledge regarding care of colostomy with 0.05 level of significant. So it indicates that structured teaching programme is effective in care givers of colostomy patients.

Section- V Distribution of posttest level of practice among caregivers of colostomy patients

(n=100)

Practice score					
Practice level	**Percentage**	**Mean**	**SD**	**T value**	**Significant**
Good	**60**	**85**	**20**	**-3.125**	*****
Average	**35**				
Poor	**5**				

In terms of posttest, 60 % caregivers has good, 35 % caregivers has adequate and 5 % of care givers has poor level of practice regarding care of colostomy with 0.05 level of significant. So it indicates that structured teaching programme is effective in care givers of colostomy patients.

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Section VI: Association of the posttest level of knowledge with selected demographic variables

(n=100)

Demographic	Options	Post test knowledge score			Association with post test knowledge			
		Good	Average	Poor	Chi square	Critical X2	Degree of freedom	Significant level
Household size	1-2 members	9	1	5	18.933	12.592	6	0.05 *
	3-4	11	10	6				
	5-6	16	5	4				
	>7	13	15	5				

The above table shows that association between posttest knowledge and household size is significant at the level of 0.05. Other demographic variables are not associated.

Section VII: Association of the posttest level of practices with selected demographic variables

(n=100)

Demographic	Options	Post test practice score			Association with post test practice			
		Good	Average	Poor	Chi square	Critical X2	Degree of freedom	Significant level
Living arrangements	Alone	39	14	7	10.923	9.488	6	0.05 *
	With partner	11	13	6				
	With family	8	1	1				
	With roommates							

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The above table shows that association between posttest practice and living arrangement is significant at the level of 0.05. Other demographic variables are not associated.

Discussion:

In this study, level of knowledge regarding colostomy care among caregivers in pretest 50% average, 25% good and 25% poor. Whereas in post test 50% good, 40% average and 10% poor. Statistical significance was confirmed by t test at the level o f 0.05.

H_1: There will be a significant change in the level of knowledge regarding colostomy care at statistical significance at P>0.05.

In this study, level of practice regarding colostomy care among caregivers in pretest 40% average, 30% good and 30% poor. Whereas in post test 60% good, 35% average and 5% poor. Statistical significance was confirmed by t test at the level o f 0.05.

H_2: There will a significant change in level of practice regarding colostomy care at statistical significance at P>0.05

To find the association of post-test knowledge regarding colostomy care among caregivers of patients with selected socio-demographic variables.

- House hold size was significant at the level of 0.05. Other demographic variables are not significant.
- To find the association of post-test practice regarding colostomy care among caregivers of patients with selected socio-demographic variables. In this study, living arrangement was significant at the level of 0.05.
- Other demographic variables are not significant.

Conclusion:

The caregivers had gained knowledge and practice about care of colostomy. In this study the investigator selected 100 samples according to criteria and gave structured teaching programme on care of colostomy. They gave free and frank response regarding care of

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colostomy. From the data analysis and findings of the present study is concluded that there was significant differences between pretest and posttest knowledge and practice scores.

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A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMMES ON THE KNOWLEDGE OF MOTHERS REGARDING THE GROWTH AND DEVELOPMENT OF TODDLERS FROM SELECTED ANGANWADIS S OF RATIA. HARYANA

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Abstract:

The primary objective of this study is to assess the efficacy of a structured instructional program in enhancing the understanding of mothers relevant to the growth and development of toddlers in certain Anganwadi centres located in Ratia, Haryana. The study employed a pre-experimental research design. The samples were chosen using the convenience sampling method. The study included a total of 60 moms who had toddlers as participants. The interview method was employed to obtain data pertaining to the growth and development of toddlers. The study devised a test to evaluate the level of information had by mothers pertaining to the growth and development of toddlers. The Statistical Package for Social Sciences, Version 20, was used to analyse the collected data. The findings of the study indicate that the average pre-test value was 1.32, whereas the average post-test value was 2.73. The calculated result for the mean difference was 1.41. There was a 0.469 standard deviation on the pre-test and a 0.446 standard deviation on the post-test. 't' was worth 17.737 and 'p' was worth 0.000. This proves the effectiveness. Demographic factors and pre-test information level did not show any statistically significant links.

Key Words: Evaluate, Effectiveness, Structured Teaching Programme, Knowledge, Mothers, Growth and Development, Toddler, Anganwadi.

Introduction:

Every new member of a family is a blessing from God. Adults lack the vitality, gentleness, joy, trust, curiosity, courage, and inventiveness of children. Children, on the other hand, have all of these qualities in abundance. The addition of children to a family both increases its level of satisfaction and completes it. The health of the family as a whole is greatly affected by the health

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of the children. It is dependent on the family's lifestyle, customs, culture, traditional practices, and mainly their understanding of child parenting, which includes knowledge regarding growth and development. Both the family's physical and social environments are important factors to consider. The health of the nation's children is a reflection of the nation's overall health and wealth. The youngsters of today will become the citizens of tomorrow. The contribution that a healthy, fully grown child makes to the general welfare of the nation is an irreplaceable national resource. Our hopes and goals for the future are embodied in our children. Children will be the next generation. The vulnerable members of society are they. On account of their delicate health indicators, children have garnered particular scientific attention. Physically and mentally healthy children typically develop into healthy individuals.

A person's growth and development can be defined as the aggregate of all the changes that occur throughout the course of their lifetime. As a person develops physically, their body and its organs swell in size; this phenomenon is known as growth. It happens as a result of an increase in intracellular material and cell proliferation. This is a measurable shift in bodily mass, expressed in units of inches or centimetres or kilogrammes. This phenomenon is both measurable and progressing.

The term "development" refers to the natural progression of an organism towards full physical and mental maturity. In other words, it's a steady improvement in competence and capability. It has something to do with the nervous system's maturity and mylenation. Emotional, social, and bodily changes are all a part of it. This part of growing up is hard to quantify since it is qualitative. It flows smoothly from one step to the next and is well-organized. Emotional, linguistic, visual-spatial, and gross-motor skills, as well as the ability to understand and solve complex problems, are all components of a well-rounded development.

A toddler is a young child who is of age of learning to walk between infancy and childhood. Toddling usually begins between the age of 12 months and 24 months. During the toddler stage, the child also learns a great deal about social roles, develops motor skills and first starts to use language.

The first three years of a child's existence are considered to be the most formative years of their lives. As a result, the care that a kid receives during these years has a significant impact on the child's subsequent growth and development. The majority of moms, especially those living in rural areas, lack knowledge regarding the fundamentals of proper child care, such as proper

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feeding and weaning procedures, healthcare, and dietary requirements. A person's entire life is impacted by feeding, especially in the early years of life. This is because it has been demonstrated that undernutrition and malnutrition can cause growth retardation in newborns and children to varying degrees. Since a nation's development and prosperity are reliant on the quality of care it provides for its children, the childcare developmental programme ought to be given top attention.

Parents with little understanding of child development tend to be neglectful and abusive. Knowledgeable parents exhibit high levels of competence and self-efficacy, which is crucial for pediatric treatment. When parents are aware of developmental milestones, interaction with physicians is more fruitful, and early treatment can be initiated. However, there is a dearth of information on parental awareness of developmental milestones, especially in nursing literature. The purpose of this study is to determine the awareness levels of parents in select areas of Haryana regarding children's developmental milestones.

Objectives:

1. To conduct a thorough assessment of mothers' knowledge regarding their toddlers' growth and development before and after administering a test.
2. To investigate the substantial impact of implementing a structured teaching program on the growth and development of toddlers.
3. To examine the association between mothers' pre-test knowledge of their toddlers' growth and development and selected socio-demographic factors.

Methodology:

A pre-experimental design was conducted on mothers of toddlers visiting the Anganwadi's of the Ratia. Haryana, India, for 4 weeks (23 -04-2018 to 30-04-2018).

Study Population and Criteria:

The target population of this investigation was mothers of toddlers. The study population consisted of mothers who brought their children to one of many area Anganwadi centers in and around Ratia, Haryana. Children between the ages of one and three were used in the study. Participants who can read and write in Hindi are readily available for the duration of the study. Non-participants and those who were absent from the Anganwadi during data collection were eliminated from the samples.

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Sample Size and Sampling Technique:

In this investigation, a convenience sampling technique was used. The study's sample was comprised of mothers of toddlers and those who met the sample criteria.

Study tools and technique:

The researcher made tools and sent them to four nursing experts and medical professionals to make sure the information was correct. Based on their suggestions and advice, the required changes were made. The changed tools were used to gather information. The following parts make it up.

Section - A: Demographic Variable It deals with demographic data which was used to collect the characteristics of the samples. Age, Educational Status, Occupational Status, Number of Children, Religion, Previous knowledge regarding growth and development. **Section - B: Structured Interview Schedules on Growth And Development** This questionnaire includes a total of thirty questions as well as possible answers. The structured interview schedule was divided into general growth and development information, physical development, cognitive development, fine motor development, social development, and linguistic development.

Section – C: Scoring and Interpretation

Level of Knowledge	Scores
Inadequate	0 - 10
Moderate	11 - 20
Adequate	21 - 30

Data collection Process and Data Analysis;

The pilot study was carried out in a similar context. Six samples that met the study's requirements were selected and data was gathered, followed by a structured teaching program and a post-test on the seventh day to evaluate the study's effectiveness and practicality. The researcher first received permission from the authority. The data was collected from 23-04-2018 to 30-04-2018 when the researcher visited the selected Anganwadi on day 1 and informed the samples about the study and obtained signed informed permission. A pre-test was then gathered from samples via interview. Data

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collection from each sample took 25–30 minutes. Later, audio-visual aids were used to teach the samples. A post-test was conducted on selected samples on the seventh day of intensive training. Standard deviation, mean, and percentage are examples of descriptive statistics that are used to organise and summarise sample numerical data. Using inferential statistics tests like the chi-square test, the hypothesis's level of significance and the relationship between sociodemographic factors and moms' understanding of toddler growth and development will be examined.

Results:

Table – I: Frequency and Percentage Distribution of Samples According to Socio–Demographic Variables.

(n = 60)

S. No	Demographic Variable	Frequency (f)	Percentage (%)
1.	**Age (Years)**		
	a. 25 – 27	27	45.00
	b. 28- 30	24	40.00
	c. Above 30	9	15.00
2.	**Education of Mother**		
	a. Illiterate	4	6.66
	b. Primary	15	25.00
	c. Secondary	24	40.00
	d. Senior – Secondary	11	18.34
	e. Degree / Diploma	6	10.00
3.	**Occupation of Mother**		
	a. House Wife	31	51.66
	b. Government Job	10	16.67
	c. Private Job	19	31.67
4.	**Number of Children**		
	a. One	12	20.00
	b. Two	36	60.00
	c. More than two	12	20.00
5.	**Previous Knowledge regarding growth and development of children.**		
	a. Yes	42	70.00
	b. No	18	30.00
6.	**Source of Information**		
	a. Family	11	18.33
	b. Friends	14	23.33
	c. Personnel	9	15.00
	d. TV/Radio/Newspapers	8	13.34
	e. No Source	18	30.00

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Table – I shows the frequency and percentage distribution of samples according to socio-demographic variables.

Most samples (45%) were 25–27 years old. Samples aged 28–30 were 24 (40.00%). Only 9 samples (15.00%) were over 30. Samples were mostly secondary level 24 (40.00%). 15 (25.00%) samples were primary schooled. Eleven (18.34%) samples were senior-secondary. The few degree/diploma samples were 6 (10%). Few samples were illiterate 4 (6.66%). For mother occupation, 56.66% of the participants were hose wives, whereas 19 (31.67%) worked in private. Ten (16.67%) government workers were sampled. Most samples have 36 children (60.00%). Twelve samples (20%) had one or more children. Samples' child growth and development knowledge shows majority 42 (70.00%) samples have prior knowledge, while 18 (30.00%) do not. Most samples (30.00%) have no sources for toddler growth and development information. Friends informed samples 14 (23.33%). Family provided information for 11 (18.33%). The 9 (15.00%) samples obtained information from other personnel. Few samples (8/13.34) used TV/Radio/News-Paper.

Table – II: Frequency and percentage distribution of samples pre-test and post-test knowledge.

(n = 60)

Level of Knowledge	Pre-Test		Post-Test	
	Frequency	Percentage	Frequency	Percentage
Inadequate	41	68.33	0	0.00
Moderate	19	31.67	16	26.66
Adequate	0	0.00	44	73.34

The table displays the frequency and percentage distribution of pre-test and post-test knowledge levels.

In terms of the pre-test, 41 (68.33%) of the sample has an inadequate level of knowledge. There were 19 (31.67%) samples with a moderate degree of understanding. None of the samples had a sufficient level of knowledge. In terms of the post-test, 44 (73.34%) of the sample has a sufficient level of knowledge. There were 16 (26.66%) samples with a moderate degree of understanding. None of the samples had an insufficient level of expertise.

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Table – III: Mean, Mean Difference, Standard Deviation, 't' test score, and 'P' Value of samples in Pre-Test and Post-Test

(n=60)

Test	Mean	Mean Difference	Standard Deviation	't' Value	'P' Value
Pre-Test	1.32	1.41	0.469	17.737*	0.001*
Post-Test	2.73		0.446		

***-Significant at 'P' level < than 0.05**

The table above displays the average pre-test and post-test values, the average difference between them, the standard deviation values, and the 't' test values.

The average pre-test value was recorded as 1.32, whereas the average post-test value was seen to be 2.73. The calculated result for the mean difference was 1.41. The standard deviation number for the pre-test was 0.469, whereas for the post-test it was 0.446. The calculated t-value was 17.737. The p-value obtained from the statistical analysis was determined to be 0.000. This demonstrates the efficacy.

Table – IV: Level of Association between Pre-Test Level of Knowledge and Selected Socio-Demographic Variables

(n=60)

S. No	Demographic Variables	Level of Knowledge		χ^2 Value	Level of Significance
		Inadequate	Moderate		
1	**Age (Years)**				
	a. 25 – 35	18	9		
	b. 36 – 45	17	7	0.116^{NS}	0.944
	c. 46 - 55	6	3		
2	**Education of Mother**				
	a. Illiterate	4	0		
	b. Primary	12	3		
	c. Secondary	18	6	9.418^{NS}	0.51
	d. Senior – Secondary	4	7		
	e. Degree / Diploma	3	3		
3	**Occupation of Mother**				
	a. House Wife	25	6		
	b. Government Job	4	6	6.117^{NS}	0.47
	c. Private Job	12	7		

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4	**Number of Children** a. One b. Two **c.** More than Two	 7 25 9	 5 11 3	 0.822^{NS}	 0.663
5	**Previous Knowledge regarding Growth and Development** a. Yes b. No	 30 11	 12 7	 0.620^{NS}	 0.310
6	**Source of Information** a. Family b. Friends c. Personnel d. TV/Radio/Newspaper **e.** No Sources	 10 11 3 6 11	 1 3 6 2 7	 8.962^{NS}	 .386

NS = Not Significant at 0.05 level of significance

Table – V: Shows the level of association between pre-test knowledge and selected socio-demographic variables.

To test the association between pre-test knowledge and age the null hypothesis can be stated as follows.

Ho: There will be no significant association between pre-test knowledge and socio-demographic variables.

In the above we could find that none of the socio-demographic variables are associated with pre-test knowledge. So we accept null hypothesis in this case.

Discussion:

The point of this study was to find out how well an organized teaching program helped mothers learn about the growth and development of toddlers.

Based on the ages of the samples, most of them were between the ages of 25 and 27 (45.00%). Based on the education levels of the samples, most of them (40.00%) were from the middle school level.

In terms of what their mother did for a living, just over half of the samples (56.66%) were wives. The number of children in the samples shows that most of them had 36 (60.00%). Knowing about the growth and development of toddlers before the sample shows that most of the people

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(42/70.00%) already knew this. The samples' sources of information show that most of them (30.00%) did not have any means for getting information about the growth and development of toddlers. Friends were the ones who told the samples 14 (23.33%) the information. Other studies have come to the same conclusions as this one.

Ertem I.O. et al. (2017) did a study to find out how much mothers in a developing country knew about how young children grow and learn. The study's results showed that there were 1,200 mothers of children younger than 3 years old. Most of the moms had kids between the ages of 25 and 36 months, which is 258 (24.5%). Most of the mothers (574 of them) were having more than two children. The mother had most of her schooling up to elementary school level 462 (43.8%). A huge majority of the mothers (935, or 88.6%) do not have jobs.

The study aimed to evaluate the knowledge of toddler growth and development before and after the test.

Most sample 41 (68.33%) lacks pre-test knowledge. There were 19 (31.67%) moderately knowledgeable samples. No sample had enough knowledge. Most of the sample had adequate post-test knowledge 44 (73.34%). There were 16 (26.66%) somewhat knowledgeable samples. None of the samples were ignorant.The following studies supported the conclusions.

Meshram K, Maurya A., and Kumari D. (2017) evaluated a structured education program on mile stine development among infant mothers in rural Wardha District. The study found that pre-test knowledge scores were bad, average, good, and exceptional. Pre-test knowledge scores were bad for 8.33% of baby moms, average for 71.67%, and good for 20%. The mean knowledge score was 6.93±1.83. Post-test knowledge scores for baby mothers were 26.67% good and 73.33% outstanding.

Deepika D, Khushlata J, Toppo, and Saini K (2014) assessed Ludhiana mothers' understanding of child milestone development. The survey found that 53% of moms had good toddler milestone development knowledge.

The objective of the study was to assess the effectiveness of a structured teaching program on the growth and development of children.

According to Table – III, the mean value before the test was 1.32, whereas the mean value after the test was 2.73. 1.41 was the value that represented the mean difference. The value of the

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standard deviation for the pre-test was 0.469, whereas the value for the post-test was 0.446. 17.737 was the value of the letter 't' The value of 'P' was found to be 0.000. It demonstrates the usefulness of the method.

Studies supporting the above results are below.

Betageri K and Tata S (2013) examined the effectiveness of structured toddler milestone development training. Pre-test mean knowledge score and standard deviation of mothers regarding ICDS program was 14.3 1.78, which rose post-test to 23.3 2.03. Pre- and post-test scores show considerable improvement in mothers' knowledge (paired 't' value = 38.684 & p value <0.0001). **B Shams, S Golshiri, A Najmi (2013)** This study assessed the Isfahan Mothers' Participation Project after two years. The study found significant differences between the two groups in maternal self-esteem, training performance, weekly study time, education program participation, knowledge of growth monitoring cards, ability to draw growth curves, and knowledge of growth curve types ($P < 0.001$).

Conclusion:

The primary insights gained from this investigation led the researchers to arrive at the following conclusions. Before participating in a structured training program, the vast majority of moms lacked insufficient understanding regarding their children's growth and development. Following participation in the structured training program, there was an increase in the mothers' level of knowledge regarding child development and growth.

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STUDY ON NOSOCOMIAL INFECTION KNOWLEDGE AMONG FIRST-YEAR B.SC. NURSING STUDENTS AT MADURAI MEDICAL COLLEGE.

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Abstract: The objective of this research was to assess the knowledge of first-year B.Sc. nursing students at Madurai Medical College's College of Nursing on nosocomial diseases and to correlate this knowledge with selected sociodemographic characteristics of hospital-acquired infections. The study used a descriptive non-experimental design based on Bertalanffy and J.W. Kenny's General System Theory. The sample included 35 first-year B.Sc. nursing students who met the study's inclusion criteria. Non-probability purposive sampling was used to select participants. The data was collected using a standardized sociodemographic questionnaire and analyzed using descriptive and inferential statistics. Results showed that 68.57% of participants had strong knowledge of nosocomial infections, 22.86% had average knowledge, and 8.57% had below-average knowledge. The study found that gender and kind of school knowledge of nosocomial diseases, as well as selected sociodemographic characteristics, were statistically significant among first-year B.Sc. nursing students. The study concluded that the majority of first-year B.Sc. nursing students had a good level of knowledge about nosocomial infections.

Keywords: Assess, Knowledge, Nosocomial infections, I year B.Sc. Nursing students

Introduction

Nosocomial infection, also known as hospital-acquired infection, affects millions of people annually and is defined as the occurrence of the infection within 48 hours of hospital admission, 3 days after discharge, or 30 days after an operation. These types of infections are prevalent in hospital settings (acquired in a medical facility). Typically, the transmission route includes healthcare workers to patients, medical and surgical instruments to patients, the environment to patients, and health care workers to patients. Nosocomial infections commonly manifest in patients who are in need of medical attention. These infections are reported to affect 7% of the population

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in developed countries and 10% of the population in developing countries. They are not exclusive to developing nations. As suggested by a number of cross-sectional studies, nurses' understanding of nosocomial infections is inadequate and substandard.

Certain infections are caused by bacteria, viruses, or fungi, including Salmonella typhimurium (1.7%), Escherichia coli (11.9%), Staphylococcus aureus (6.8%), Pseudomonas aeruginosa (5.1%), Shigella (5.1%), and Pseudomonas aeruginosa (6.1%). These pathogens are responsible for catheter-associated urinary tract infections (CAUTI), surgical site infections (SS), and ventilator-associated pneumonia (VAP). Hospitals have been observed administering antibiotics to patients less than forty-eight hours after their admission. Length of hospital stay, age, gender, reason for admission, surgical history, type of disease condition, insertion of any type of catheter, invasive procedure, mechanical ventilators, and so forth are all risk factors associated with the infection.

Nosocomial infections can lead to significant cost overruns for the health care system in the long and short term. These complications include prolonged hospital stays, chronic diseases, mortality, morbidity, transitory and permanent dysfunction, and excessive therapeutic activity. By preventing nosocomial infections, infection control can contribute to the reduction of medical expenses. The series of infection control guidelines has enabled medical professionals to provide superior patient care. Several studies have reached the conclusion that health care workers lack sufficient knowledge, attitude, and practice concerning nosocomial infections. The significance of nosocomial infection prevention should be underscored among healthcare professionals.

Need for the study:

Patients receiving medical care are at risk of contracting nosocomial infections, which occur in both developed and poor nations worldwide. Developed nations have a 7% incidence rate while poor nations have a 10% incidence rate. In intensive care units, the incidence rate can be as high as 51%, as reported by EPIC II. After conducting thorough investigations, the incidence rate of healthcare-associated infections ranged from 13.0 to 20.3 incidents per thousand patients in the US and Europe.

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Bacteria, viruses, and fungi are nosocomial pathogens. WHO estimates 15% of hospitalized patients have these illnesses. Studies in India estimate 11%–60% nosocomial infections in ICUs. Hospitalized individuals are exposed to germs from the environment, healthcare staff, and other diseased patients. These infections should be prevented by limiting transmission. Hospital trash might include pathogens, and 20%–25% is dangerous.

The International Nosocomial Infection Control Consortium reports 9.06 HCAI infections per 1,000 intensive care unit (ICU) patient days in India, which is higher than other wealthy countries. Hospitals in India have HCAI infection rates ranging from 4.4 to 83.09 percent. Total HAI prevalence in India was 3.76 percent. The surgical ICU (25%), medical ICU (20%), burns ward (20%), and pediatric ward (12.17%) were associated with HAI.

Catheter-related infections caused over 100 cases at Rajiv Gandhi Government General Hospital (RGGGH) in 2018, and 43 cases as of March 2019. More than 50 ventilator-associated infections and dialysis unit cases were recorded from 2018 to March 2019, up from 32 in 2017. Influenza remains a prevalent RGGGH infection. The above reference and the researcher's clinical experience prompted this investigation. Students working in clinicals must understand nosocomial infections and their treatment. Students in B.Sc. Nursing already study nosocomial infections. Thus, this study assesses student knowledge. Therefore, the researcher can choose to learn utilizing alternative instructional approaches in the future.

OBJECTIVES:

- To determine the extent to which first-year basic B.Sc. (N) students enrolled in the College of Nursing at Madurai Medical College, Madurai, are knowledgeable regarding hospital-acquired infections.
- To examine the association between the knowledge level of hospital acquired infections and the socio-demographic characteristics of first-year Basic B.Sc. (N) students enrolled in the College of Nursing at Madurai Medical College, Madurai.

Materials and Methods:

Research approach - Quantitative evaluative research approach.

Research design - Non experimental (descriptive research) design.

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Setting of the study - College of Nursing, Madurai Medical College, Madurai.

Population of the study

Target population **-** B.Sc. Nursing students.

Accessible population **-** I-year B.Sc. Nursing students are studying at College of Nursing, Madurai Medical College, Madurai.

Sample - I-year B.Sc. Nursing students at College of Nursing. Madurai Medical College, Madurai and those who met the inclusion criteria.

Sample size - The sample size is 35

Sampling technique - Non probability (purposive) sampling technique.

Criteria for sample selection

Inclusion criteria

- ✓ The students who is studying in I year B.Sc. Nursing.
- ✓ Students who is willing to participate in the study.

Exclusion criteria

- ✓ The students who is not available at the time of data collection.
- ✓ The students who attended in-service education programme, ward teaching programme, bedside clinic and previous clinical experiences regarding Nosocomial infections.

Research Tool - The tool in question comprises two distinct sections: Socio Demographic Data and a Self-administered Structured knowledge Questionnaire pertaining to Nosocomial infections. The scoring procedure for the latter involves the use of 25 questions, each of which is assigned a score of one for each correct answer. It is worth noting that the language used throughout this questionnaire is designed to be formal and precise, to ensure that the resulting data is both accurate and reliable.

Level of Knowledge	Score
Below average	1-12
Average	13-17
Good	18-25

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Data collection procedure:

The researchers started to collect data from the samples after getting permission from the college to do the study. The time frame for gathering the data was one week. The self-reporting questionnaire method was used to get information from the participants every day.

Procedure for data analysis - Research data was analyzed to make it interpretable and manageable. Statistics were used to organize and interpret the data. Investigators created a master sheet to compare data. Analysts employ descriptive and inferential statistics. Socio demographic factors were described by frequency and proportion. Chi-square test was performed to determine the association between sociodemographic characteristics and nosocomial infection knowledge among first-year B.Sc. Nursing students at College of Nursing, Madurai Medical College.

Results and Interpretations:

Table – I: Frequency and Percentage distribution of I Year B.Sc. Nursing students according to their socio demographic variables.

(n=35)

S. No.	Socio-demographic variables		f	%
1.	Age	Less than 20	35	100%
		More than 20	0	0%
2.	Gender	Male	3	8.6%
		Female	32	91.4%
3.	Type of school	Government	9	25.7%
		Private	25	71.4%
		CBSE	1	2.9%
4.	Medium of study	Tamil medium	23	65.7%
		English medium	12	34.3%

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		Others	0	0%
5.	**Type of family**	Nuclear family	30	85.7%
		Joint family	5	14.3%
		Extended family	0	0%
6.	**Place of domicile**	Rural	27	77.1%
		Sub urban	1	2.9%
		Urban	7	20%
7.	**Occupation of the mother**	Health care professional	0	0%
		Government employee	0	0%
		Private employee	6	17.1%
		Self-employee	29	82.9%
8.	**Occupation of the father**	Health care professional	1	2.9%
		Government employee	1	2.9%
		Private employee	6	17.1%
		Self-employee	27	77.14%
9.	**Source of information**	Books	19	54.3%
		Medical professional	1	2.9%
		Media	4	11.4%
		Others	11	31.4%

The above table – 1 shows the frequency and percentage distribution of I year B.Sc. Nursing students with their selected socio-demographic variables.

When age was taken into account, all 35 subjects were younger than 20 years old. When looking at gender, 32 of the subjects (91.4%) were women and only 3 (8.6%) were men. Based on the type of school, most of the subjects were studied in private schools (89.7%), government schools (25.7%), and CBSE schools (2.9%). When looking at the language used for study, 23 subjects (65.7%) were taught in Tamil, while 12 subjects (34.3%) were taught in English. When it came to the type of family, 30 of the subjects (85.7%) were nuclear families and 5 (14.3%) were mixed families. When it came to where most of the subjects lived, 27 (77.1%) were from rural areas, 7 (20%) were from cities, and 1 (2.9%) was from the suburbs. When looking at what most of the subjects did for a living, 29 (82.9%) were self-employed and 6 (17.1%) worked for private

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companies. Out of the subjects who were asked what their father did for a living, 27 (77.14%) were private employees, 6 (17.1%) were government employees, and 1 (2.9%) was a health care worker. Most of the people who answered (54.3%) got their information about nosocomial infections from books, while 11 (31.4%) got their information from other sources, 4 (11.4%) got their information from the media, and 1 (2.9%) got their information from medical workers.

Table – II: Frequency and percentage distribution of subjects according to their level of knowledge regarding Nosocomial infections among I Year B.Sc. Nursing students.

(n = 35)

Level of knowledge	(f)	(%)	Mean with standard deviation
Below average	3	8.57%	17.54 ± 2.749
Average	8	22.86%	
Good	24	68.57%	

Table shows % distribution of knowledge levels regarding Nosocomial infections among 1st-year B.Sc. Nursing students at College of Nursing, Madurai Med. College.

Majority of the subjects 24 (68.57%) were having good knowledge, 8 (22.86%) were having average knowledge and 3 (8.57%) were having below average knowledge regarding Nosocomial infections among I Year B.Sc. Nursing students. The Mean score with Standard deviation of knowledge regarding Nosocomial infections is 17.54 ± 2.749

III - Association between the level of knowledge regarding Nosocomial infections among I Year B.Sc. Nursing students with their selected socio demographic variables

(n=35)

S. No	Socio-demographic variables	LEVEL OF KNOWLEDGE						χ^2	df	't'value
		Below average		Average		Good				
		f	%	F	%	f	%			
1.	Age									
	Less than 20	3	8.57%	8	22.86%	24	68.57%	0.125	2	5.99NS

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	More than 20	0	0%	0	0%	0	0%			
2.	**Gender**							14.264	2	5.99**S***
	Male	2	5.71%	0	0%	1	2.86%			
	Female	1	2.86%	8	22.86%	23	65.71%			
3.	**Type of school**							12.289	4	9.49 **S***
	Government	1	2.86%	3	8.57%	5	14.28%			
	Private	1	2.86%	5	14.28%	19	54.29%			
	CBSE	1	2.86%	0	0%	0	0%			
4.	**Medium of Study**							8.554	4	9.49 **NS**
	Tamil	0	0%	4	11.43%	19	54.29%			
	English	3	8.57%	4	11.43%	5	14.28%			
	Others	0	0%	0	0%	0	0%			
5.	**Type of family**							2.33	4	9.49 **NS**
	Nuclear family	2	5.71%	8	22.86%	20	57.14%			
	Joint family	1	2.86%	0	0%	4	11.43%			
	Extended family	0	0%	0	0%	0	0%			
6.	**Place of domicile**							2.33	4	9.49 **NS**
	Rural	1	2.86%	5	14.29%	21	60%			
	Sub urban	0	0%	0	0%	1	2.86%			
	Urban	2	5.71%	2	5.71%	3	8.57%			
7.	**Occupation of the Mother**							3.319	6	12.59 **NS**
	Health Care Professional	0	0%	0	0%	0	0%			
	Government employee	0	0%	0	0%	0	0%			
	Private employee	0	0%	0	0%	6	17.14%			
	Self- employee	3	8.57%	8	22.86%	18	51.43%			
8.	**Occupation of the Father**							11.886	6	12.59 **NS**
	Health Care Professional	0	0%	0	0%	1	2.86%			
	Government employee	1	2.86%	0	0%	0	0%			

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	Private employee	0	0%	2	5.71%	4	11.43%			
	Self- employee	2	5.71%	7	20%	18	51.43%			
9.	**Source of information regarding Nosocomial infections**									
	Books	2	5.71 %	3	8.57%	14	40%	7.375	6	12.59 **NS**
	Medical professional	0	0%	0	0%	1	2.86%			
	Media	0	0%	3	8.57%	1	2.86%			
	Others	1	2.86%	2	5.71%	8	22.86%			

S*–significant, NS – not significant

Chi- Square analysis reveals that, there was a statistically significant association between the level of knowledge regarding Nosocomial infections among I Year B.Sc. Nursing students with their selected socio-demographic variables such as **gender (χ^2 = 14.264,'t' value= 5.599) and type of school (χ^2 = 12.289,'t' value= 9.49) were associated** other variables age, medium of study, type of family, place of domicile, occupation of the mother, occupation of the father and source of information regarding Nosocomial infections among I Year B.Sc. Nursing students were not associated with their selected socio-demographic variables.

DISCUSSION:

The objective of the study was to assess nursing students' knowledge of Nosocomial infections at College of Nursing, Madurai Medical College.

The majority of the participants, specifically 24 (68.57%), shown a high level of knowledge. Additionally, 8 subjects (22.86%) exhibited a medium level of knowledge, while 3 subjects (8.57%) had below average knowledge.

The results of this study exhibited similarities to the findings reported in a study conducted by **Gadade et al. (2018).** The purpose of this study was to evaluate the level of knowledge pertaining to nosocomial infections among Bachelor of Science in Nursing students at certain nursing institutes located in Pune city. Based on a comprehensive analysis, this study concludes that approximately 64% of B.Sc. nursing students possess an average level of knowledge regarding

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nosocomial infection, while approximately 33% of B.Sc. nursing students demonstrate a good level of knowledge in this area.

The study's second objective was to correlate the level of knowledge of Nosocomial infections among I year B.Sc. (Nursing) students at the College of Nursing, Madurai Medical College, Madurai, with their selected socio-demographic variables.

To determine the association between the level of knowledge of Nosocomial infections and the students' socio-demographic variables, the Chi-square test showed a significant association with gender ($\chi 2 = 14.264$, 't' value = 5.99), $p = 0.05$ level, and type of school ($\chi 2 = 12.289$, 't' value = 9.49), $p = 0.05$ level.

Thus, the research hypothesis (H1), which states that there is a statistically significant association between the level of knowledge of Nosocomial infections and the students' socio-demographic variables, is accepted, while the null hypothesis is rejected.

The results of the current investigation were found to be incongruent with the findings of previous studies. The primary objective of the study conducted by Muhasin and Dr. S. N. Nanjunde Gowda (2021) was to investigate the existence of a significant correlation between the degree of knowledge and certain socio-demographic factors among fourth-year B.Sc. Nursing students at SCPM College of Nursing and Paramedical Sciences in Gonda. Based on the findings from the chi-square table 3, it can be concluded that there is no statistically significant relationship between the knowledge level and the selected socio-demographic characteristics. This conclusion is drawn based on the comparison of the chi-square value, which is lower than the critical value from the table at a significance level of 0.05. Consequently, the null hypothesis (H1) was rejected at a significance level of 0.05.

CONCLUSION:

The study's findings indicated that the majority of the 24 subjects (68.57%) possessed a decent understanding of nosocomial infections among first-year B.Sc. nursing students; 8 subjects (22.86%) had average knowledge; and 3 subjects (8.57%) had below-average knowledge. The average score for knowledge pertaining to nosocomial infections, accompanied by its standard deviation, is 17.54 ± 2.749. Knowledge of nosocomial infections and infection control measures was deemed adequate by the majority of nursing undergraduates attending colleges in Madurai,

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according to the findings of the study. The research findings underscored the necessity for additional advancements in the establishment of authoritative information sources regarding NIs. To facilitate a deeper understanding of nosocomial infection prevention among nursing undergraduates, it is recommended that infection control be introduced as an early college-level course. In addition, it is imperative that patients receive proper guidance on infection control protocols before beginning their clinical training in hospitals. Additionally, seminars, workshops, and programs of continuing education should be organized to ensure that knowledge is regularly updated.

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`A DESCRIPTIVE STUDY TO ASSESS COVID-19 RELATED DEPRESSION, ANXIETY AND STRESS AMONG STAFF NURSES WORKING IN SCPM MULTI-SPECIALTY HOSPITAL, GONDA UP.

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ABSTRACT

Objectives of the study

1. To assess COVID-19-related Depression, Anxiety, and stress among staff nurses working in SCPM multi-specialty Hospital, Gonda
2. To find out the association between COVID-19 related Depression, Anxiety, and stress among staff nurses with their selected demographic variables.

Methods of the study

A Nonexperimental descriptive research design was adopted. Socio-demographic data consists of 10 items and The DASS -21 scale consists of 21 items was used for data collection. Formal written permission was obtained from the authority followed by the data collected from 40 staff nurses who were selected by using a non-probability convenient sampling technique.

Result of the study

The result of the study found that 75% of the nurses belonged to 20-25 years, 85% were Hindu, 50% qualified with BSc nursing, 75% were living in a joint family, 75% were unmarried, 60% were getting monthly income between 5000 -10000, 87.5% were staff nurses, and 92.5% had posted on COVID-19 duty, 72.5% had work experience between 2 to 5 years. 32.5% of staff nurses were not having COVID-19-related depression, 12.5% had mild, 25% had moderate, 15% had severe and 15% had extremely severe depression. With regards to Anxiety 7.7% were

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not having anxiety whereas 22.5% had mild anxiety, 17.5% had moderate, 2.5% had severe and 50% had extremely severe anxiety. With regards to stress, 40% of staff nurses do not experience stress whereas 20% had mild stress, 15% had moderate, 22.5% had severe and 2.5% had extremely severe levels of stress. For depression, the mean value was 14.83±1.99, for Anxiety 17.25±1.79, and for stress 17.90±1.75 with a mean percentage of 35.31% for depression, 41.07% for anxiety and 42.61% for stress. There was a significant association between type of residence, monthly income, and COVID-19-related depression. There was a significant association between type of residence, monthly income, and COVID-19-related anxiety. There was no significant association between the socio-demographic variable and COVID-19-related stress among staff Nurses.

Conclusion of the study

The present study suggests that all the parameters ranging from depression, anxiety, and stress after the covid 19 pandemic were significantly high among staff nurses. The results emphasize a need for preparedness to counter any future pandemics on mental beings. The policymakers should consider the nurse's well-being while making healthcare policies and promote their mental health by establishing wellness clinics for the nurses.

INTRODUCTION

Several fearsome epidemics of infectious diseases have always affected the history of humanity. [1] The world in 2020 has seen a distinctive type of coronavirus with an acute respiratory syndrome called COVID-19 which appeared in Wuhan, China, and rapidly extended to other countries. [2,3] The World Health Organization (WHO) declared COVID-19 to be a pandemic on March 11, 2020.[4] More importantly, the COVID-19 pandemic can also significantly affect the mental health of the workers in the healthcare sector (HCWs), who directly struggle with this crisis. The HCWs who provide frontline healthcare to struggle with infectious diseases will have higher mental health problems in the short and long terms. [5] The effect of this unexpected condition on the mental health of frontline HCWs i.e. mental problems such as anger fear anxiety, and depression was shown in the obtained from Wuhan city, China. [6] Coronaviruses are enveloped single-stranded RNA viruses of a zoonotic nature that cause symptoms ranging from those like the common cold to more severe respiratory, enteric, hepatic, and neurological symptoms. [7] On 30 January 2020, the World Health Organisation (WHO) declared a new coronavirus pandemic and classified it as a PHEM (Public Health Emergency) of International Concern, according to the WHO's International Health Regulation. On 11 February 2020, the WHO officially declared the new coronavirus to be the

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coronavirus (COVID-19) and declared the pandemic a global public health emergency. The new coronavirus has not only increased the number of people dying from viral infections, but it has also had a significant impact on the psychological and mental health of people around the world.[9] According to the latest statistics released by WHO, about 226 million confirmed cases of COVID-19 have been identified worldwide and more than 4654,000 people have died until September 16, 2021.[10]

NEED FOR THE STUDY In December 2019, a new viral outbreak of severe acute respiratory syndrome, coronavirus-2 infection, occurred in Wuhan City, which later spread throughout China and other countries. [11] In late January 2020, the World Health Organization (WHO) declared the novel coronavirus (nCoV), later renamed coronavirus disease-2019 (Covid-19), to be an outbreak public health emergency of international concern (PHEIC).[12] Amid the COVID-19 episode, healthcare laborers have created mental issues such as discouragement, uneasiness, push, posttraumatic stretch clutter (PTSD), and destitute rest quality.[13] According to an Italian study, the outbreak of COVID-19 affects the productive state, the state of attachment and the human psyche, which indicates the severity of the mental health burden.[14] All members of the community are vulnerable to the adverse effects of COVID-19, but health workers should receive more attention because they are on the front line of the fight against this disease and play an important role in the health system. [15] Most people are uncovered to an phenomenal unpleasant circumstance for an obscure period, which may increment stretch, uneasiness, and misery levels, as well as disturb rest.[16] Currently, Iran has one of the highest rates of infection and death. Since the outbreak of the epidemic in Iran, there have been five waves of COVID-19. According to official reports, more than 5 million cases and approximately 116,000 deaths from COVID-19 have been reported in Iran as of September 16, 2021.[17] An unknown pneumonia outbreak in China in late 2019 brought a new type of coronavirus that caused a new respiratory disease. The rapid spread of the disease in China and other countries was caused by a new coronavirus, scientifically known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the resulting disease called Coronavirus Disease 2019 (COVID-19). concern among people around the world.[18] The COVID-19 pandemic has brought many challenges and obstacles to a growing but unprepared health care system, with health care workers already under increased workload. These factors have led to a significant association between acute stress syndrome, posttraumatic stress disorder (PTSD), and burnout among health care providers, especially physicians.[19] Corona virus 19 initially appeared in the Chinese city of Hubei in December 2019 as a flurry of respiratory infections. Widespread epidemics are known to cause emotional distress and mental

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health problems.[20]

OBJECTIVES

1. To assess COVID-19-related Depression, Anxiety, and stress among staff nurses working in SCPM multi-specialty Hospital, Gonda
2. To explore the relationship between COVID-19-related depression, anxiety and stress among nurses using selected demographic variables.

HYPOTHESIS

1. There is a significant association between COVID-19-related depression among staff nurses with selected Demographic variables.
2. There is a significant association between nurses' anxiety about COVID-19 and some demographic variables.
3. There is a significant association between nurses' stress about the COVID-19 virus and some demographic variables.

Research Approach

The research approach used in this study is a quantitative approach.

Research Design

A non-experimental descriptive research design was adopted in this study.

The setting of the study

The study was conducted in SCPM multi-specialty hospital in Gonda Uttar Pradesh.

Variable

Dependent variable: Covid-19 related Depression, Anxiety, and Stress.

Socio-demographic variables

Age, type of residence, type of family, monthly income, marital status, designation, year of experience, and education.

Population

In this study, the Target population is referred to as staff nurses, and the accessible population is referred to as staff nurses who work in SCPM Multi-specialty hospital in Gonda, India

Sample

The sample includes 40 staff nurses who meet the criteria for participation in the study.

Sampling technique

The samples are selected by using a non-probability-convenient sampling technique.

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Sampling criteria

Inclusive criteria:

- Staff nurse who has at least 2 years of experience in clinical.
- Female staff nurses.
- The staff nurses who are available at the time of data collection.

Exclusion criteria:

- Those staff nurses who are not willing to participate in the study.

Description of the tool

A socio-demographic data and DASS -21 scale was used by the investigator which contains items in the following aspects.

Section -A

A socio-demographic data consists of 10 items: Age, religion, education, type of family, type of resident, marital status, monthly income, designation, posted on COVID-19 duty, and year of experience.

Section -B

The DASS -21 scale comprises of 21 things 3-point self-reported scale that incorporates Misery, Uneasiness, and Push. (DASS-21) could be a set of three self-report scales planned to degree the enthusiastic states of discouragement, uneasiness, and stretch. Each of the three DASS-21 scales contains 7 things, isolated into subscales with comparative substance.

Content validity

The legitimacy of the device was built up in interview with guides and specialists from the field of Mental wellbeing (psychiatry) Nursing. The suggestions and recommendations were considered, and the instrument was changed appropriately.

Reliability

The reliability of the tool was checked using the DASS 21 Scale Test-Retest method. Using the obtained values, the coefficients were correlated using the Karl Pearson formula. The resulting reliability score was r = andquot; 0.82. which showed that the DASS-21 scale was highly reliable. Therefore, this tool was considered statistically reliable in the main study.

Data collection method

A formal written permission was obtained from the authority of SCPM Multi-specialty Hospital. The data was collected from 5/11/2022 to 15/11/22 from 40 staff nurses who fulfilled the inclusion criteria. The socio-demographic data and the Dass-21 scale were administered to collect the information. The data collection took 20-30 minutes, before conducting the study

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consent was taken from samples by explaining the purpose of the study.

Descriptive statistics

Frequency and percentage distribution, mean, and standard deviation were used to analyze the demographic variables of staff nurses and the level of Depression, Anxiety, and Stress of staff nurses.

Inferential statistics

Chi-square to work out the significant association between socio-demographic Variables and Depression, Anxiety, and Stress of the samples.

Result of the Study

Table 1: Frequency and percentage distribution based on socio-demographic variables.

S.no.	Variables.	Frequency	Percentage
1	**Age in year**		
	20 to 25	30	75 %
	26 to 30	10	25%
2	**Religion**		
	Hindu.	34	85%
	Muslim	5	12.5%
	Christian.	1	2.5%
3	**Education**		
	ANM	17	42.5%
	GNM	3	7.5%
	BSc Nursing	20	50%
4	**Type of family**		
	Nuclear family	10	25%
	Joint family	30	75%
5	**Type of Resident**		
	Urban	15	37.5%
	Semi-urban	6	15%
	Rural	19	47.5%
6	**Marital status**		
	Married	9	22.5%
	Unmarried	30	75%
	Divorce	1	2.5%
7	**Monthly Income**		
	5000-10000	24	60%
	10001-20000	15	37.5%
	above 20000	1	2.5%
8	**Designation**		
	Floor In charge	1	2.5%
	ward in charge	4	10%
	staff nurse	35	87.5%
9	**Have you been posted on COVID-19 duty?**		
	Yes	37	92.5%

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	No	3	7.5%
10	**year of experience**		
	2-5 years	29	72.5%
	6-10 years	10	25%
	11-15 years	1	2.5%

Table 2. Level of Covid-19 related Depression, Anxiety, and Stress among Staff Nurses

Level	Depression		Anxiety		Stress	
	Number	Percentage	Number	Percentage	Number	Percentage
Normal	13	32.5	3	7.5	16	40
Mild	5	12.5	9	22.5	8	20
Moderate	10	25	7	17.5	6	15
Severe	6	15	1	2.5	9	22.5
Extremely Severe	6	15	20	50	1	2.5

Table 3. Mean and Standard deviation of Covid-19 related Depression, Anxiety, and stress among staff nurses

Variables	No of items	Max score	Mean	SD	Mean percentage
Depression	7	42	14.83	1.99	35.31%
Anxiety	7	42	17.25	1.79	41.07%
Stress	7	42	17.9	1.75	42.61%

Table 4: Association between Covid-19 related Depression with selected socio-demographic variable

n=40

S.no.	Variables.	≤ Median	≥Median	Total	χ^2 Test	Inference
1	**Age in year**				Cal value=0.0332 Table value=3.84	p≥0.05 NS
	20 to 25	14	16	30		
	26 to 30	5	5	10		
2	**Religion**				Cal value=0.7 Table value=5.99	p≥0.05 NS
	Hindu.	17	17	34		
	Muslim	2	3	5		
	Christian.	1	0	1		
3	**Education**				Cal value=5.169 Table value=5.99	p≥0.05 NS
	ANM	0	3	3		
	GNM	6	11	17		
	BSc Nursing	13	7	20		
4	**Type of family**				Cal value=2.1332	p≥0.05 NS
	Nuclear family	3	7	10		

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	Joint family	17	13	30	Table value=3.84	
5	**Type of Resident**				**Cal value=7.0** Table value=5.99	**p≥0.05 *S**
	Urban	10	6	16		
	Semi-urban	5	1	6		
	Rural	5	13	18		
6	**Marital status**				Cal value=2.2402 Table value=5.99	p≥0.05 NS
	Married	3	5	8		
	Unmarried	15	16	31		
	Divorce	1	0	1		
7	**Monthly Income**				**Cal value=10.1935** Table value=5.99	**p≥0.05 *S**
	5000-10000	7	16	23		
	10001-20000	13	3	16		
	above 20000	1	0	1		
8	**Designation**				Cal value=0.5284 Table value=5.99	p≥0.05 NS
	Floor In charge	0	1	1		
	ward in charge	2	2	4		
	staff nurse	18	17	35		
9	**Have you been posted on COVID-19 duty?**				Cal value=2.4444 Table value=3.84	p≥0.05 NS
	Yes	20	16	36		
	No	0	4	4		
10	**year of experience**				Cal value=5.7896 Table value=5.99	p≥0.05 NS
	2-5 years	18	11	29		
	6-10 years	2	8	10		
	11-15 years	0	1	1		

Table 5: Association between Covid-19 related anxiety with selected socio-demographic variable

n=40

S.no.	Variables.	≤ Median	≥Median	Total	χ^2 Test	Inference
1	**Age in year**				Cal Value=0.299 Tab value=3.84	p≥0.05 NS
	20 to 25	15	15	30		
	26 to 30	6	4	10		
2	**Religion**				Cal Value=2.416 Tab value=5.99	p≥0.05 NS
	Hindu.	18	16	34		
	Muslim	1	4	5		
	Christian.	1	0	1		
3	**Education**				Cal Value=4.758 Tab value=5.99	p≥0.05 NS
	ANM	0	3	3		
	GNM	6	11	17		
	BSc Nursing	13	7	20		
4	**Type of family**				Cal Value=1.64 Tab value=3.84	p≥0.05 NS
	Nuclear family	3	7	10		
	Joint family	16	14	30		
5	**Type of Resident**				**Cal Value=10.67**	**p≥0.05 *S**
	Urban	9	6	15		

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	Semi-urban	5	1	6	Tab value=5.99	
	Rural	6	13	19		
6	**Marital status**				Cal Value=1.17 Tab value=5.99	p≥0.05 NS
	Married	3	5	8		
	Unmarried	16	15	31		
	Divorce	1	0	1		
7	**Monthly Income**				**Cal Value=8.566** Tab value=5.99	**p≥0.05 *S**
	5000-10000	8	16	24		
	10001-20000	12	3	15		
	above 20000	0	1	1		
8	**Designation**				Cal Value=0.528 Tab value=5.99	p≥0.05 NS
	Floor In charge	0	1	1		
	ward in charge	2	2	4		
	staff nurse	18	17	35		
9	**Have you been posted on COVID-19 duty?**				Cal Value=1.11 Tab value=3.84	p≥0.05 NS
	Yes	19	17	36		
	No	1	3	4		
10	**year of experience**				Cal Value=5.788 Tab value=5.99	p≥0.05 NS
	2-5 years	18	11	29		
	6-10 years	2	8	10		
	11-15 years	0	1	1		

Table 6: Association between Covid-19 related Stress with selected socio-demographic variable

n=40

S.no.	Variables.	≤ Median	≥Median	Total	χ^2 Test	Inference
1	**Age in year**				Calculated value 0.11 Table value 3.84	p≥0.05 NS
	20 to 25	14	16	30		
	26 to 30	4	6	10		
2	**Religion**				Calculated value 0.7332 Table value 5.99	p≥0.05 NS
	Hindu.	15	19	34		
	Muslim	2	3	5		
	Christian.	1	0	1		
3	**Education**				Calculated value 1.488 Tablet value 5.99	p≥0.05 NS
	ANM	1	2	3		
	GNM	6	11	17		
	BSc Nursing	11	9	20		
4	**Type of family**				Calculated value 2.595 Table value 3.84	p≥0.05 NS
	Nuclear family	2	8	10		
	Joint family	16	14	30		
5	**Type of Resident**				Calculated value 5.1814	p≥0.05 NS
	Urban	9	6	15		
	Semi-urban	4	2	6		

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	Rural	5	14	19	Table value 5.99	
6	**Marital status**				Calculated value 2.4143 Table value 5.99	p≥0.05 NS
	Married	2	6	8		
	Unmarried	16	15	31		
	Divorce	1	0	1		
7	**Monthly Income**				Calculated value 2.1122 Table value 5.99	p≥0.05 NS
	5000-10000	8	15	23		
	10001-20000	9	7	16		
	above 20000	0	1	1		
8	**Designation**				Calculated value 2.7029 Table value 5.99	p≥0.05 NS
	Floor In charge	0	1	1		
	ward in charge	3	1	4		
	staff nurse	15	20	35		
9	**Have you been posted on COVID-19 duty?**				Calculated value 1.8363 Table value 3.84	p≥0.05 NS
	Yes	18	18	36		
	No	0	4	4		
10	**year of experience**				Calculated value 0.5946 Table value 5.99	p≥0.05 NS
	2-5 years	14	15	29		
	6-10 years	4	6	10		
	11-15 years	0	1	1		

DISCUSSION

This study was conducted to assess depression anxiety and stress among nurses of selected SCPM hospitals in Gonda. The research results were discussed based on the concept and hypotheses presented in this study. The results of the study were discussed in terms of frequency and percentage distribution based on social variables, the level of depression, anxiety and stress in nurses affected by COVID-19 and the relationship between depression, anxiety and stress related to COVID-19 in nurses . With specified variables

OBJECTIVES

1. To assess COVID-19 related Depression, Anxiety, and stress among staff nurses working in SCPM multi-specialty Hospital, Gonda
2. To explore the relationship between COVID-19-related depression, anxiety and stress among nurses using selected demographic variables.

Section 1: Frequency and percentage distribution based on socio-demographic variable.

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Most of the samples (75%) were 20-25 years old, most of the samples (85%) were Hindu, many of the nurses (50%) qualified with BSc nursing, and most of the nurses (75%) were living in a joint family. Most nurses (75%) were unmarried, and most of the nurses (60%) were getting monthly income between 5000 -10000. Most nurses (87.5%) designated were staff nurses, and most of the nurses (92.5%) had posted on COVID-19 duty. Most nurses (72.5%) had work experience between 2 to 5 years.

Section-2: To assess covid-19 related Depression, Anxiety, and stress among staff nurses working in SCPM multi-specialty Hospital, Gonda

The result of the study shows that 32.5% of staff nurses were not having COVID-19-related depression, 12.5% had mild, 25% had moderate, 15% had severe and 15% had extremely severe depression. With regards to Anxiety, 7.7% were not having anxiety whereas 22.5% of staff nurses have mild anxiety, 17.5% have moderate, 2.5% have severe and 50% of nurses are having extremely severe anxiety. With regards to stress, 40% of staff nurses do not experience stress whereas 20% have mild stress, 15% have moderate, 22.5% have severe and 2.5% nurses have extremely severe levels of stress. For depression, the mean value is 14.83±1.99, for Anxiety 17.25±1.79, and for stress 17.90±1.75 with a mean percentage of 35.31% for depression, 41.07% for anxiety and 42.61% for stress.

Section 3: Association between Covid-19 related Depression, Anxiety, and stress with selected socio-demographic variable

There's a noteworthy affiliation between sort of home, month to month salary, and COVID-19-related sadness among staff nurses. Hence H1: There's a noteworthy affiliation between COVID-19-related misery with selected demographic factors is accepted.There could be a critical affiliation between type of home, month to month wage, and COVID-19-related uneasiness among staff medical attendants. Consequently H2: There's a noteworthy affiliation between COVID-19-related uneasiness with chosen statistic factors is accepted.There is no significant affiliation between the chosen socio-demographic variable and COVID-19-related stretch among staff Medical attendants Consequently H3: There's a critical affiliation between COVID-19-related stretch and with chosen Statistic variable is rejected.

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"KNOWLEDGE REGARDING FOOD SAFETY AMONG SCHOOL-GOING CHILDREN AT SELECTED SCHOOLS OF KURALI (PUNJAB)"

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ABSTRACT

Food safety is scientific discipline which describes handling, preparation and storage of food in a way that prevent food borne illness. Contaminated food can transmit the diseases from person to person as well serve as the growth medium for micro-organisms that can cause food poisoning. The study's objective was to evaluate how well school-age children understood food safety after receiving a health education package. The study method employed was quasi-experimental. The current investigation employed a non-equivalent pre-test post-comparison group design. Total 300 participants were selected using simple random sampling 150 for experimental group and 150 for control group. Structure knowledge questionnaire was used to assess the effectiveness of health education package on knowledge regarding food safety. The study found that the experimental group had a mean± SD knowledge score of 8.94±3.71 and 18.37±4.62 for pre-test and post-test food safety, while the control group had a mean± SD of 9.10± 3.80 and 9.65± 4.17. Using a t-test, the experimental group showed significant differences in food safety knowledge scores ($p<0.05$) compared to the control group ($p>0.05$). Comparing the experimental group to the control group, the study found that the former had higher food safety knowledge scores.

Keywords: - Food safety, food safety knowledge, school children.

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INTRODUCTION

The scientific field of food safety describes how to handle, prepare, and store food in a way that minimizes the risk of contracting a food-borne illness. This covers several practices that ought to be adhered to in order to prevent potentially serious health risks. In this sense, there is frequently overlap between food safety and food defense to shield consumers from harm. Food that has been contaminated can spread illnesses from person to person and act as a breeding ground for microorganisms that can produce food poisoning.

Children are the most vulnerable population group to foodborne diseases due to their increased susceptibility to illness when exposed to foodborne agents. The primary cause of this issue is from inadequate safety measures in school canteens. Hence, it is imperative to have an accurate and dependable tool that can evaluate the level of food safety among food handlers in the school canteen, specifically in terms of their understanding and implementation of personal hygiene, food hygiene, food storage, and environmental cleanliness.

Young children have a lower body weight, a less developed immune system, and less control over the preparation of their meals, which puts them at a greater risk of contracting a foodborne disease than adults have during the same age. Especially in young children, those who contract foodborne illnesses are at a greater risk of experiencing long-term health repercussions and even death. Approximately one half of reported foodborne illness occurs in children. Children are disproportionately affected by these foodborne microorganisms; Campylobacter, Escherichia coli, Salmonella, and Shigella.

The study's objectives

1. To evaluate school-age children's pre- and post-test knowledge of food safety.
2. To create and implement a health teaching package for children in school that focuses on food safety.
3. To evaluate the impact of a health education program on food safety for students enrolled in school.

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4. To ascertain the association between pre-test food safety knowledge and selected demographic characteristics.

HYPOTHESIS

- With regard to food safety, the post-test knowledge score of school-aged children will be considerably greater than their pretest knowledge score.
- Pre-test knowledge scores will be significantly associated with certain demographic characteristics.

MATERIAL AND METHODS

For this study, a quantitative research approach was utilised, and a quasi-experimental design, also known as a non-equivalent pre-test post-comparative group plan, was utilised. The children who were attending school were the target audience, and the group that was accessible was comprised of children who were attending school (10–15 years old) from a selection of schools in Kurali (Punjab). Both the experimental group and the control group consisted of 150 school-going children from chosen schools in Kurali. The experimental group consisted of 150 children, while the control group consisted of exactly the same number of school-going children. In order to choose the samples, a straightforward random sampling method was utilised.

TOOL: The tool consisted of two sections:

Section A: ***Socio-Demographic Variables*** **-** Socio-demographic data includes age, gender, class, religion, type of family, number of children in family, residence, dietary pattern and food habits data includes source of drinking water, did you filter the water before drinking, source of information, type of home, did you wash the vegetables and utensils before cooking, education of mother, education of father, occupation of father, occupation of mother, family income per month and source of information.

Section B: ***Structured Knowledge Questionnaire*** **-** A structural knowledge questionnaire was included. This instrument comprised of 30 questions designed to measure school-age children's understanding of food safety. Each item has one correct answer out of four

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alternatives, and each correct response is worth one mark. The following aspects were addressed in the questions:

- ✓ Hygiene.
- ✓ Food hygiene.
- ✓ Food safety and its principles.
- ✓ Importance of food safety and basics for handling food safely.
- ✓ Foodborne diseases.
- ✓ Causes and clinical manifestation of food borne disease.
- ✓ Treatment of foodborne diseases.
- ✓ Preventions of food borne disease.

RESULTS AND INTERVENTION

The acquired data were initially coded and summarised in a master data sheet before being analysed using SPSS, version 21, in accordance with the study's objectives.

TABLE 1 Frequency and Percentage Distribution of Subjects as Per Their Demographic Variables (Child Profile)

N=300

Demographic variables		Experimental group N=150		Control group N=150	
		N	%	N	%
Age in years	10	17	11.3	37	24.7
	11	21	14.0	32	21.3
	12	31	20.7	30	20.0
	13	27	18.0	21	14.0
	14	29	19.3	16	10.7
	15	25	16.7	14	9.3
Gender	Male	76	50.7	80	53.3
	Female	74	49.3	70	46.6
Class	5^{th}	27	18.0	66	44.0
	6^{th}	24	16.0	18	12.0
	7^{th}	42	28.0	34	22.7
	8^{th}	24	16.0	20	13.3
	9^{th}	33	22.0	12	8.0

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Religion	Hindu Muslim Sikh Christian	73 04 71 02	48.7 2.7 47.3 1.3	80 05 61 04	53.3 3.3 40.7 2.7
Type of Family	Nuclear Joint Extended	05 93 03	36.0 62.0 2.0	64 81 05	42.7 54.0 3.3
Number of children in family	One Two Three More than three	20 46 54 30	13.3 30.7 36.0 20.0	25 38 47 40	16.7 25.3 31.3 26.7
Residence	Rural Urban	64 86	42.7 57.3	67 83	44.7 53.3

TABLE-1 (b) - Frequency and Percentage Distribution of Subjects as Per Their Food Habits

N=300

Demographic variables		**Experimental group N=150**		**Control group N=150**	
		N	**%**	**N**	**%**
Dietary pattern	Vegetarian Non- vegetarian	115 035	076.7 023.3	108 042	072.0 028.0
Source of drinking water	Open well Bore well Hand pump Tap water	005 023 013 109	003.3 015.3 008.7 072.7	007 018 019 106	004.7 012.0 012.7 070.7
Did You Filter the Water before drinking	Yes No	099 051	066.0 034.0	102 048	068.0 032.0
Source of Information	Mass media Peer group Printed-media	087 031 032	058.0 020.7 021.3	085 035 030	056.7 023.3 020.0

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Type of Home	Kachaa Pakka	014 136	009.3 090.7	000 150	000.0 100.0
Did you wash the vegetables and utensils before cooking	Yes No	150 000	100.0% 000.0%	150 000	100.0% 000.0%

TABLE-2 - Comparison of Pre-Test and Post-Test Knowledge Scores Regarding Food Safety of The Subjects

N=300

Group	Test	Mean ±SD	Mean difference	t-test
Experimental	Pre-test Post-test	8.94±3.71 18.37±4.62	9.43	17.14**
Control	Pre-test Post-test	9.10±3.80 9.65±4.17	0.55	00.36

*(p<0.05)

TABLE – 3: Associations Between Demographic Variables and Pre-Test Level Of Knowledge of the Subjects

N=300

Demographic variables		Subjects Knowledge						
		Poor		Average		Good		χ^2
	Category	n	%	N	%	n	%	
Age	5	035	64.8	19	35.2	0	0.0	2.845
	6	038	71.7	15	28.3	0	0.0	
	7	043	70.5	18	29.5	0	0.0	
	8	031	64.6	17	35.4	0	0.0	
	9	035	77.8	10	22.2	0	0.0	
	10	026	66.7	13	33.3	0	0.0	

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Gender	Male Female	101 107	67.3 71.3	49 43	32.7 28.7	0 0	0.0 0.0	.564
Class	5th 6th 7th 8th 9th	062 033 054 029 030	66.7 78.6 71.1 65.9 66.7	31 09 22 15 15	33.3 21.4 28.9 34.1 33.3	0 0 0 0 0	0.0 0.0 0.0 0.0 0.0	2.496
Religion	Hindu Muslim Sikh Christian	110 005 089 004	71.9 55.6 67.4 66.7	43 04 43 02	28.1 44.4 32.6 33.3	0 0 0 0	0.0 0.0 0.0 0.0	1.522
Type of Family	Nuclear Joint Extended	078 126 004	66.1 72.4 50.0	40 48 04	33.9 27.6 50.0	0 0 0	0.0 0.0 0.0	
Number of children in family	One Two Three More than three	033 061 073 041	73.3 72.6 72.3 58.6	12 23 28 29	26.7 27.4 27.7 41.4	0 0 0 0	0.0 0.0 0.0 0.0	4.990
Residence	Rural Urban	084 124	64.1 73.4	47 45	35.9 26.6	0 0	0.0 0.0	2.970
Dietary Pattern	Vegetarian Non vegetarian	160 048	71.7 62.3	63 29	28.3 37.7	0 0	0.0 0.0	2.384
Source of Drinking Water	Open-Well Bore- Well Hand-Pump Tap- Water	007 027 028 146	58.3 65.9 87.5 67.9	05 14 04 69	41.7 34.1 12.5 32.1	0 0 0 0	0.0 0.0 0.0 0.0	6.089
Did You Filter the Water before drinking	Yes No	137 071	68.2 71.7	64 28	31.8 28.3	0 0	0.0 0.0	.136

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Source of Information	Mass media Peer group Printed media	122 044 042	70.9 66.7 67.7	50 22 20	29.1 33.3 32.3	0 0 0	0.0 0.0 0.0	.330
Type of Home	Kuchaa Pukka	011 197	78.6 68.9	03 89	21.4 31.1	0 0	0.0 0.0	14.68**
Did you wash vegetables and utensils before cooking	Yes No	208 000	69.3 00.0	92 00	30.7 00.0	0 0	0.0 0.0	

(P>0.05)

DISCUSSION:

The study's results showed that there was a difference between the experimental group (8.94±3.71) and the control group (9.10±3.80) in the mean score of the pre-test knowledge score about food safety among school-going children. After the pre-test, the experimental group was given a health information package. After getting a health education package, there was a big difference between the experimental group's mean post-test score (18.37±4.62) and the control group's mean score (9.65±4.17) on a test of how much they knew about food safety.The experimental group does better on the post-test than the control group when it comes to how much they know about food safety among school-aged kids. The test showed a difference in mean knowledge scores that was statistically significant ($p<0.05$).

A similar study conducted by Shen Metal (2015) conducted a quasi-experimental study to assess knowledge, attitude and behaviour on nutrition and food safety health education for primary school students in two poverty stricken countries. The study aimed to assess the knowledge, attitude and behaviour with respect to nutrition and food safety. Twelve primary schools are randomly selected and then six geographically dispersed schools were assigned to the intervention group in a non-random way. A questionnaire was introduced to participants. Student's participants in intervention group received targeted

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nutrition and food safety lecture 0.5 hour per week for two semesters. Item response theory was applied for assessment of questionnaire. A study concluded that health education improved 95% in term of knowledge and behavior but had no effects on attitude.

Conclusion

The investigation found a substantial difference between the experimental group's and the control group's knowledge. The experimental group exhibits a significantly higher level of expertise in food safety compared to the control group. There was no notable correlation between the pre-test knowledge score and the demographic characteristics they selected.

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INNOVATIVE METHODS OF TEACHING PRACTICAL SKILLS FOR NURSING STUDENTS – A REVIEW

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Introduction:

Education shines a bright light on the path humanity should take in order to progress. Education's goals go beyond teaching reading and writing to include developing students' critical thinking skills, subject mastery, and independence. There is always room for improvement when people are open to new ideas and methods. Students and educators alike can reap the rewards of cultivating and encouraging creative thought and action.[1] Education guides humanity forward. Students' failure to learn self-discipline and achievement is not their fault. We must make education a sport and engage children so they stay in school rather than leave. Education should excite them rather than dull them. It's crucial to their development and citizenship.[2]

Due to the rapid pace of scientific development, nursing personnel are continually challenged to expand their knowledge base. The choice of a suitable teaching approach is inextricably tied to advancements in technology, population growth, economic issues, regional disparities, demands for higher education, and people's propensity for self-motivation and self-learning.[3]

Nurses are expected to use modern technologies in everyday situations more than ever, so nurse educators must train appropriately. Learning innovations like virtual learning and adaptive technologies assist nurse educators improve student outcomes including certification and credentialing exam scores and real-world practice readiness. Many of these tech-driven nursing education changes are routine. Virtual conferencing, smartphones, and apps are so ingrained in students' lives that using them in a nurse educator's curriculum is easy.[4]

Over time, nursing education has changed, and now students spend more and more time in classes that are not directly caring for patients. Despite having a higher academic background, students are generally less clinically experienced and confident than prior generations of trainees. Reforms to the curriculum were partially implemented for ethical and risk-reduction purposes when exposing students to patients. Clinical skills facilities have been built up to address this, but they are insufficient to close the theory/practice break up. Herein lies the "new" approach to simulation education. More lately, education has undergone a significant

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transformation toward a student-cantered approach, even if certain technology has been around for decades or even longer. By adopting modern teaching techniques, a beginner's desire for nursing education in this day and age is to help lessen student competitiveness, foster cooperation, and increase a good study atmosphere. In contemporary teaching methods, the student is the primary focus. These ways of teaching are based on activities and put the learner at the center, which makes them fully involved in the process of learning. From inert listeners to active participants, students progress. In the curriculum implementation of nursing academic institutions, a cocktail of all the different teaching methodologies should be employed.[5]

Current Trends in Teaching Methodology

The development of technology has made education simple and accessible. Online learning, open learning, web-based learning, computer-mediated learning, blended learning, and m-learning provide the opportunity to learn from any location, at any time, and through any means. The positive outlook in the education industry has been shown by new ways of teaching and learning and quick changes in how they are delivered. Currently, the real-time classrooms and interaction have been supplanted by online chatrooms and virtual classrooms. Using platforms such as video conferencing (Google meet, Google presentation, Webinar jam, Microsoft Team, Zoom, Slack, Cisco WebEx) and a custom cloud-based learning management system (ELIAS/ MOODLE), virtual classrooms are being designed.Before lectures begin, the reversed classroom provides online study materials, pre-recorded videos, and a link to the lecture. The adaptability of online learning for participation and interaction engendered confidence and a sense of security. In addition, the more the nation becomes digitally connected, the more opportunities there are for producing digital natives, who find it easy to expose themselves online and manage their lives on virtual platforms.[6]

The degree to which a lecturer or clinical instructor employs novel methods of education is directly proportional to the degree to which their students learn something new. Evidence-based innovation is essential for applications. In order to prepare for class, a teacher must

1. A nurse educator must recognize the importance of selecting new methods for implementing technology as a teaching instrument.
2. A nurse educator needs to research ways to connect with students who don't want to go to college.
3. Educators in the nursing field should pay close attention to the unique challenges of reaching students from low-income backgrounds.

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4. It is important for nurse educators to learn how to work with students in places that are open to everyone, such as labs, rooms, community areas, and so on.
5. Research needs to be done on how to teach students to think critically and creatively, and educators of nurses need to conduct this research.

The nursing profession necessitates the integration of both theoretical and practical training. Several educational initiatives have been employed to enhance students' psychomotor and communicative abilities. These tactics are outlined below:

Simulation Method

Nursing students benefit greatly from simulation because it gives them the opportunity to hone their clinical abilities in a risk-free setting before applying them to actual patients. Here is a rundown of what you may expect from the nurse simulation approach to education:

Types of Simulation:

There are different types of simulations used in nursing education:

- ***High-fidelity simulation:*** Incorporates the use of sophisticated manikins or computer-based simulations, whose physiology and reactions are quite similar to those of actual patients.
- ***Medium-fidelity simulation:*** Utilizes simplified manikins or task trainers that are designed to target specific skills or procedures.
- **Low-fidelity simulation:** Uses low-tech tools to imitate clinical settings, such as role-playing, paper scenarios, or simple props.

Key Components of Nursing Simulation:

- ***Scenario development:*** Educators construct realistic scenarios that mirror clinical circumstances that nursing students may encounter.
- ***Debriefing:*** Students participate in a debriefing session following the simulation to evaluate their performance, identify areas for refinement, and gain insight from their experiences.
- ***Assessment:*** Through simulation-based assessments, nursing teachers can evaluate the knowledge and abilities of their students.
- ***Standardized patients:*** In order to increase the realism of simulations, sometimes actual patients or trained actors assume the role of patients.

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Case base learning:

A popular teaching strategy in a variety of industries, including business, law, health, and education, is case-based learning (CBL). When applied to education, case-based learning (CBL) entails giving students hypothetical or real-world cases or scenarios and guiding them through an organized process of analysis, discussion, and problem-solving. In the field of medical and healthcare education, this method is especially popular and is referred to as "case-based learning" or "case-based teaching."

Key Components of Case base learning:

- **Real or Hypothetical Cases:** Case-based learning (CBL) often starts with the presentation of a complex, real-world case study or scenario. Real-life patient stories, historical events, or made-up scenarios could all serve as inspiration for these cases. Patient histories, symptoms, and diagnostic conundrums are common case topics in medical teaching.
- **Active Learning:** CBL puts a lot of weight on active learning, which means that students are involved in the process of learning. They have to look at the case, figure out what the problems are, and suggest ways to fix them. This helps people learn how to think critically, solve problems, and make decisions.
- **Group Discussion:** In case-based learning, students typically participate in groups where they analyze and debate cases together. As students discuss ideas, challenge one another's presumptions, and exchange opinions, this fosters collaboration and communication skills.

Problem Based Learning:

Problem-Based Learning (PBL) is an instructional strategy utilized in nursing and healthcare education to cultivate clinical reasoning, critical thinking, and problem-solving abilities in nursing students. PBL is a learner-centered strategy that requires students to actively participate in solving complicated, real-world healthcare problems.

Problem-Based Learning (PBL) is a structured and learner-centered approach to education. While there can be variations in the process, a common framework for PBL often consists of seven steps:

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- ***Introduction to the Problem:***

  In this phase, a case, scenario, or problem—real or imagined—is given to the pupils. The goal of this introduction is to pique students' interest and curiosity. Since there may not be an obvious solution and the situation is frequently complex, inquiry and critical thinking are encouraged.

- ***Defining the Problem:***

  Students collaborate to identify the problem's central issues and uncertainties. They determine what they know and what they need to learn to effectively resolve the problem. This step encourages critical analysis and the identification of problems.

- ***Brainstorming and Hypothesis Generation:***

  Students participate in brainstorming sessions in which they produce ideas, possible explanations, or solutions to problems that have been discovered. This step promotes creativity and the investigation of various points of view.

- ***Structured Self-Directed Learning:***

  Students learn independently after brainstorming. They use textbooks, scientific literature, online resources, and other sources to learn how to solve the problem. This phase encourages independent learning, research, and information synthesis.

- ***Sharing Knowledge and Collaborative Learning:***

  After self-directed learning, students meet in small groups to discuss and share their knowledge. The group works together to understand the issue, discuss their ideas, and consolidate their expertise.

- ***Synthesis and Problem-Solving:***

  Here, students use what they learned from self-directed learning and group discussions to create a logical solution. To find a rational solution, they use knowledge, reasoning, and critical thinking.

- ***Presentation and Reflection:***

  Students share their results, theories, and solutions with the class. Presentations enable for peer discussion, feedback, and learning. Students evaluate their learning, discoveries, and knowledge.

Videoconferencing and web-based conferencing

By utilizing this method and technology, students and teachers are able to connect, clarify their questions, and present a live demonstration from a distance. Videoconferencing and web-based chatting are useful tools for teaching nursing that have many benefits for both teachers and

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students. These tools make it possible to learn from afar, improve teamwork, and open the door to more interactive and interesting ways of teaching.

E – learning:

Delivering nursing education and training through electronic learning, or e-learning, has grown in popularity and effectiveness. A few benefits of e-learning for nurses include its adaptability, accessibility, and capacity to customize courses to meet specific needs. A dependable internet connection, student isolation, and worries about clinical experiences in remote or virtual environments are challenges in nursing e-learning. Nursing educators and institutions must also ensure e-learning programs are accredited and licensed. E-learning in nursing now offers high-quality education to a wider and more diverse student population and promotes lifelong learning for nursing practitioners.

Conclusion:

A mix of technologies and social media is very important for this because it encourages the integration of technologies, making virtual relationships more human, and making learning more personalized. As time goes on, new tools keep coming out that could change and improve the way higher education works. There have been calls around the world for a change in nursing education from focusing on the teacher to focusing on the students. There isn't much research to back up the claims that some of these new and innovative technologies can help students learn and do better in school (for example, Active Learning Classrooms and Simulation Technology). Also, most of them haven't been fully tested yet and will probably need to be improved over time as flaws are found and new problems arise. Also, teachers need to be fully trained and given incentives to use new tools. Still, these tools and/or others that haven't even been thought of yet will definitely be used in health care education as it changes to meet the many challenges of learning in the 21st century.

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LEVEL OF KNOWLEDGE ON INDEPENDENT NURSE PRACTITIONER AMONG I YEAR M.Sc. NURSING STUDENTS AT COLLEGE OF NURSING, MADURAI MEDICAL COLLEGE, MADURAI.

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ABSTRACT

Title: Assess the level of knowledge on Independent Nurse Practitioner among I year M Sc Nursing students at the College of Nursing, Madurai medical college, Madurai. **Objectives:** To determine the degree to which first-year M.Sc. in nursing students at Madurai Medical College, Madurai, are knowledgeable about Independent Nurse Practitioners and to correlate this level of knowledge with the selected sociodemographic variables of those students. This study's conceptual framework was the Modified Ludwig von Bertalanffy System Model. The study used a non-experimental descriptive design and a sample of twenty first-year M.S. in Nursing students to achieve its goal. A structured questionnaire was used, and descriptive and inferential statistics were used to analyze the data. Of the 20 subjects, 9 (45 percent) had a level of knowledge that was above average, 11 (55 percent) had a level of knowledge that was above average, and none of them had a level of knowledge that was below average about Independent Nurse Practitioner. The knowledge of Independent Nurse Practitioners was found to have a mean score of 9.45, with a standard deviation of 0.12. According to the findings of this study, there was no statistically significant correlation found between the selected sociodemographic variables and the student's knowledge of Independent Nurse Practitioners in their first year of M.Sc. Nursing.

Key Notes: Independent Nurse Practitioner, level of knowledge, purposive sampling

INTRODUCTION

"Innovative nurse entrepreneurs" are nurse practitioners (NPs) that use advanced knowledge and specialized abilities to provide services that are in demand.1. By filling up the gaps in services and knowledge, these nurse practitioners improve accessibility, cost, and quality of healthcare. On the other hand, little is known about nurse practitioners' real-world experience working in private practise.

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Consequently, the goal of this research was to identify the specific obstacles that nurse practitioners encounter while moving from group practise to solo practise and to explain how these obstacles are addressed. This information can help educate nurse practitioners worldwide about evidence-based care and is helpful in raising awareness of the expanding role of nurse practitioners.

The demand for primary care professionals is unbalanced due to the growing scarcity of primary care physicians. This need has been continuously addressed by nurse practitioners. In addition, health care organisations are seeing a shift towards fee-for-value services due to financial limitations, a lack of healthcare providers, the expansion of Medicaid, and the establishment of new insurance exchanges. This trend fosters the inclusion of nurse practitioners in the medical field and offers business prospects for enhancing hospital services.

The "Nurse Practitioner in Critical Care Programme" (NPCC), India's first postgraduate nursing residency programme, was launched by the Indian Nursing Council. The programme was announced on the INC website in 2017 after being approved by the Indian government and launched by the health minister. Since 2017, the NPCC programme has been implemented successfully by Manipal College of Nursing. Our graduates greatly enhance the critical care by being placed in prestigious healthcare facilities.

Graduates of the programme will be qualified for "advanced practise roles, such as clinical experts, managers, educators, and consultants," in emergency departments, specialised care units, and critical care units. They are equipped to give people receiving advanced nursing care at tertiary care facilities' critical care units. Graduates are equipped to take ownership and accountability of the treatment of patients in their care who are in critical condition.

NEED FOR THE STUDY

An Independent Nurse Practitioner (INP) is a registered nurse with advanced nursing training (usually a master's or doctoral degree, B.sc. or GNM) in diagnosing and treating common and complex medical diseases.

Independent Practitioner courses are offered at 31 colleges in India, with 10-25 students per year.In Tamil Nadu, Sri Ramachandra Institute of Higher Education and Research, Sree Balaji College of Nursing, Saveetha Institute of Medical and Technical Sciences, and SRM Institute of Science and Technology established Independent Nurse Practitioners in Critical Care.Sri Ramachandra Institute of

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Higher Education and Research (Deemed university) began offering a 20-student Independent Nurse Practitioner course in 2019. In 2022–2023, Sree Balaji College of Nursing, Saveetha Institute of Medical and Technical Sciences (University), and SRM Institute of Science and Technology began offering the Independent Nurse Practitioner in Critical Care course.

Indian Nursing Council believes a postgraduate programme called Nurse Practitioner in Critical Care is needed to meet the challenges and demands of tertiary health care in India, as reflected in the National Health Policy (NHP draught document 2015) to provide quality care to critically ill patients and families. INC believes that postgraduates from a residency programme with a strong clinical component and competency-based training must demonstrate clinical competence based on theoretical and evidence-based knowledge. Preceptors/mentors must upgrade their expertise and practises. Medical faculty/preceptors are encouraged to participate more in the early training. INC believes a number of clinical teaching initiatives can alleviate the critical care nursing faculty shortage. It should help build licensure policies and provide cadre posts for postgraduate critical care Nurse Practitioners in tertiary care facilities.

Objectives of the study:

1- To evaluate the degree of knowledge on Independent Nurse Practitioner among first-year M.Sc Nursing students at Madurai Medical College's College of Nursing.
2- Associating the amount of knowledge about Independent Nurse Practitioner among first-year M.Sc. nursing students at College of Nursing, Madurai Medical College, Madurai with certain sociodemographic factors.

Methodology:

Research approach - Quantitative evaluative approach

Research design - Non-experimental (descriptive) research design.

Research variables - Knowledge of Independent nurse practitioner

Settings of the study - College of Nursing, Madurai Medical College, Madurai

Population of the study

Target Population - I year M. Sc Nursing students

Accessible Population - I-year M. Sc Nursing students at College of Nursing, Madurai Medical College,Madurai.

Sample - I-year M. Sc Nursing students at College of Nursing, Madurai Medical CollegeMadurai, those who met the inclusion criteria.

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Sample size - The sample size is 20.

Sampling technique - Non probability (Purposive) sampling technique.

Research tool and technique - The technique to be used for this study is structured administered questionnaire.

Description of the tool - The tool consists of two sections

Section A: Socio-demographic variables

Section B: Structured Administered questionnaire-Knowledge regarding Independent nurse practitioner

Section A: It consists of socio demographic variables of the subjects, such as gender, area of residence, medium of instruction in schooling, occupation of the father, mother, Family income, it a place of domicile, Type of Family, Source of information regarding Independent Nurse Practitioner, type of UG in nursing, Type of Service, Duration of Nursing service, Nursing undergraduate studied government and private college

Section B: Structured Administered questionnaire consisting of information regarding Independent nurse practitioner

Scoring procedure - It consists of 18 questions. The score 1 mark is awarded for each correct answers and0 for wrong answers

Scoring is calculated as follows:

Scores	Levels of Knowledge
1 - 6	Below Average
7 - 12	Average
13 - 18	Above Average

Data analysis

Plan for data analysis

The conversion of data obtained during the study endeavor into an interpretable and manageable form was part of the data analysis. It entailed employing statistical procedures to organize and interpret data. The invigilator created a master sheet to compare the data. For data analysis, descriptive and inferential statistics are utilized.

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Descriptive Statistics

Frequency and percentage distribution was used for describing socio demographic variables.

Inferential statistics:

Chi square test was used to find out the association between knowledge on independent nurse practitioner among I year M.Sc Nursing students at College of Nursing, Madurai Medical College, Madurai with their selected socio demographic variables

RESULT:

Section A:

Frequency and percentage distribution of I year M. Sc nursing students according to their selected socio demographic variables

(n = 20)

S. No	Socio-Demographic Variables		F	%
1	Age	a) 20-30	6	30
		b) 30-40	9	45
		c) Above 40	5	25
2	Gender	a) Male	2	10
		b) Female	18	90
3	Medium of instruction in higher secondary education	a) Tamil	15	75
		b) English	5	25
		c) Others	0	0
4	Occupation of the father	a) Daily wages	4	20
		b) Government employee	6	30
		c) Private employee	1	5
		d) Self-employee	9	45
5	Occupation of the mother	a) Daily wages	3	15
		b) Governmentemployee	2	10
		c) Private employee	1	5
		d) Self-employee	14	70
6	Family income	a) <5000	0	0
		b) 5001-10,000	1	5
		c) 10001-15000	3	15
		d) >15000	16	80
7	Place of domicile	a) Rural	8	40
		b) Suburban	4	20
		c) Urban	8	40
8	Type of family	a) Nuclear family	11	55

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		b) Joint family	8	40
		c) Extended family	1	5
9	**Sources of information regarding Independent Nurse Practitioner**	a) Books	11	55
		b) Social media	3	15
		c) Trained nurses	6	30
10	**Type of UG in nursing**	a) Basic BSc(N)	11	55
		b) Post Basic Bsc(N)	9	45
11	**Nursing under graduation in**	a) Govt nursing college	8	40
		b) Private nursing college	12	60
12	**Nursing category**	a) Staff nurse	19	95
		b) Clinical instructor	0	0
		c) Nursing tutor	1	5
18	**Duration of nursing services**	a) <5yrs	5	25
		b) 5-8 yrs	3	15
		c) >8yrs	12	60

The data in the table is crucial in understanding the socio-demographic characteristics of first-year M.Sc nursing students. By analyzing the frequency and percentage distribution of these variables, we can gain valuable insights into the diverse backgrounds and experiences of these students. This information can be used to develop targeted programs and initiatives that cater to the unique needs of this population. In terms of age group, the majority of subjects (45%) were between 30-40 years old, while 30% were between 20-30 years old and 25% were over 40 years old. When considering gender, 90% of subjects were female and 10% were male. In terms of medium of instruction in higher secondary education, 75% of subjects studied in Tamil medium and 25% studied in English medium. Regarding the occupation of the father, 45% were self-employed, 30% were government employees, 20% were daily wage workers, and 5% were private employees. For the occupation of the mother, 70% were self-employed, 15% were daily wage workers, 10% were government employees, and 5% were private employees. In terms of family income, 80% earned more than Rs.15,000, 15% earned Rs.10001-15,000, 5% earned Rs.5001- 10000, and none earned less than Rs.5000 per month. In terms of place of domicile and family type, 55% belonged to nuclear families, 40% belonged to joint families, and 5% belonged to extended families. Regarding the source of information, 40% of subjects were from rural areas, 40% were from urban areas, and 20% were from suburban areas. Finally, 55% of subjects pursued basic BSc (N) while 45% pursued post basic BSc (N). When examining undergraduate nursing programs, 60% of the subjects completed 12 subjects in private nursing colleges, while the remaining 40% completed their studies in government nursing colleges. In terms of nursing roles, 95% of the subjects were staff nurses, with the remaining 5% serving as nursing

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tutors. When it comes to the duration of nursing service, the majority of the subjects (60%) had more than 18 years of experience, while 25% had less than 5 years and 15% had 5-8 years of experience.

SECTION –B

Subject knowledge levels on independent nurse practitioner among I-year M.Sc. (Nursing) students at College of Nursing, Madurai Medical College.

Subject knowledge levels on independent nurse practitioner among I year M.Sc. (Nursing) students at College of Nursing, Madurai Medical College

(n = 20)

Level of knowledge	(f)	(%)	Mean with standard deviation
Below average	-	-	9.45 ± 0.1229
Average	11	55%	
Above average	9	45%	

The table above, Table 2, displays the percentage distribution of subjects based on their level of knowledge on independent nurse practitioners among first-year M.Sc (Nursing) students at the College of Nursing, Madurai Medical College, Madurai.

The majority of the subjects, specifically 9 out of the total, representing 45%, demonstrated an above-average level of knowledge on the topic of independent nurse practitioners among first-year M.Sc (Nursing) students at the College of Nursing, Madurai Medical College, Madurai. Additionally, 11 subjects, accounting for 55%, displayed an average level of knowledge, while none of the subjects exhibited a below-average level of knowledge. The average score, together with the standard deviation, of knowledge on independent nurse practitioner among first-year M.Sc (Nursing) students is 9.45 ± 0.1229.

DISCUSSION:

The primary objective of this study was to evaluate the level of knowledge among first-year M.Sc (Nursing) students at the College of Nursing, Madurai Medical College, Madurai, regarding independent nurse practitioners. The majority of the participants, 11 (55%), demonstrated an

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average level of knowledge, while 9 (45%) exhibited above-average knowledge of independent nurse practitioners.

The secondary objective of the study was to determine the association between the level of knowledge on independent nurse practitioners among first-year M.Sc (Nursing) students at the College of Nursing, Madurai Medical College, Madurai, and their selected socio-demographic variables. The chi-square test revealed that there was no statistically significant association between the level of knowledge on independent nurse practitioners among the participants and their selected socio-demographic variables.

In conclusion, this study provides valuable insights into the level of knowledge among first-year M.Sc (Nursing) students at the College of Nursing, Madurai MedicalHence – H1- There is no statistically significant association between the level of knowledge on independent nurse practitioner among I year M.Sc (Nursing) students,College of Nursing, Madurai Medical college, Madurai with their selected socio demographic variables. Research hypothesis is rejected and null hypothesis accepted.

CONCLUSION

According to the findings of the study, the majority of students enrolled in the first year of the Master of Science in Nursing programme had an average level of understanding on INPs. It has been determined that there is no statistically significant correlation between the amount of knowledge about Independent Nurse Practitioners and the socio-demographic factors that have been chosen.

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EMBRYO GLUE - TRENDS & CHALLENGES - REVIEW ARTICLE

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ABSTRACT

Being pregnant is a wonderful time because it brings the happiness and satisfaction of creating a new life. Pregnancy is more than just a physical transformation of the female body; it is also an emotional transformation that has an everlasting impact on life and completely changes one's outlook. Infertility is a serious problem for many couples in this decade, and it may be a difficult and frustrating experience for them. As a result, assisted reproductive technologies are largely employed to treat infertility, hence encouraging Vitro Fertilisation and increasing pregnancy rates. Embryo Glue, an implantation-promoting transfer medium containing a component known as Hyaluronan, was recently used in embryo transfer. During the settling process, this tissue adhesive generates a milieu in the uterus for optimal embryo invasion. This is especially useful for customers who have a high failure rate during implantation while having a most likely donor cycle.

KEYWORDS: *In-vitro fertilization, Hyaluronan, Implantation, Pregnancy, Embryo transfer*

INTRODUCTION

Being pregnant is a happy, hopeful, and exciting time. Couples who are married now go to fertility services to get pregnant. Also, because they can't have children, many couples are socially isolated and mentally upset[1]. Assisted reproductive methods are the main way that infertility is treated these days, and they are making it possible for many couples to have children[2]. In vitro fertilisation and egg transfer are now more common, and the rise in technology has made it easier for people to get pregnant. Even with these improvements, the implantation of eggs is still hard for doctors. There are a lot of things that could have gone wrong with a woman's IVF implantation, but one of the most common is that the sticky matrix of the endometrium and the transferred embryo in the uterus

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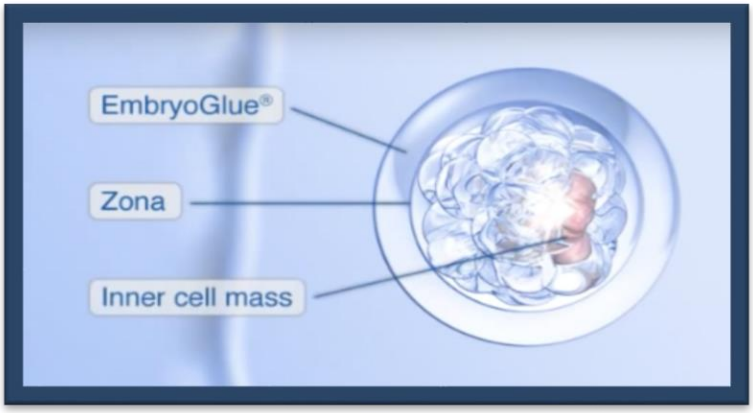
did not connect properly[3]. Harper and his colleagues created a medium-sized Embryo glue in 2003. It is designed specifically for embryo transfer and is the only product on the market that has been shown to improve implantation because it contains a lot of hyaluronan, which helps the embryo stick to the womb[4].



Source: https://www.careivfkolkata.com/Treatment/Embryoglue

EMBRYO GLUE

a unique culture medium created specifically for the embryo transfer process that uses biochemical cues to facilitate the embryo's attachment to the uterine mucous membrane. With a high concentration of hyaluronan and human recombinant albumin to facilitate embryo implantation into the womb, the solution's composition is ideal. Hyaluronan functions as a bridge between the uterine surface and the embryo, minimises drift and has a texture akin to that of the fluid found in the womb. This facilitates the embryo's spontaneous conception-like implantation in the womb[5].

INGREDIENTS OF EMBRYO GLUE

A higher concentration of hyaluronic acid (0.5 mg/mL) and a lower concentration of human recombinant albumin (2.5 mg/mL) are the components that make up embryo glue. There is a presence of hyaluronan glycosaminoglycan in both the uterine cavity and the oviduct, and its presence rises during the process of implantation. The female reproductive system contains a significant amount of albumin, which is a source of energy, hormones, vitamins, and metals. Albumin is also found in its abundance. When the embryo transfer procedure is carried out, albumin not only contributes to the viscosity of the culture media, but it also serves as a lubricant, making it easier to handle the embryos and preventing them from adhering to the culture plate.[6]

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Source:https://www.primefertilitycenter.com/en/getting-to-know-embryo-glue-an-implantation-promoting-medium/

INDICATIONS OF EMBRYO GLUE

The utilization of embryo adhesive can provide advantages for the subsequent mothers:

- Advanced age of the mother.
- Inadequate performance of the implant, even in the most likely donor cycle.
- Damaged, obstructed, or deformed fallopian tubes
- implantation complications, especially in cases where the uterine environment and embryo quality were both optimal.
- Consecutive implant failure.
- At least two unsuccessful IVF cycles.
- Undiagnosed infertility[7].

EMBRYO GLUE APPLICATION AND ITS PROCESS

STAGE 1 - APPOSITION

During embryo transfer, the embryos are immersed in a substance known as 'glue' and subsequently inserted into the uterus. The adhesive properties and elevated viscosity of the glue facilitate the blending of the contents of the transfer medium, known as Embryo glue, with the uterine fluid. This results in a close interaction between the embryo and the endometrium, allowing the embryo to remain within the uterine lumen. This reduces the undesired displacement of the embryo within the uterus.[8]

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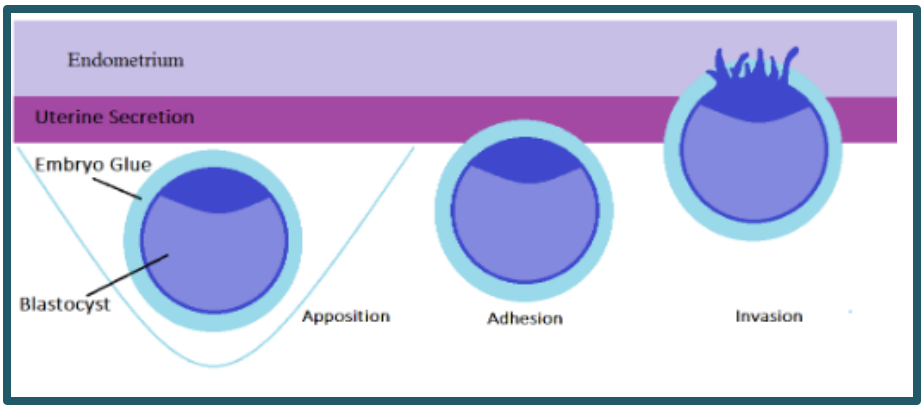

Source: https://www.babyjoyivf.com/embryo-glue/

STAGE 2 - ADHESION

- In this stage the glue encourages the embryos to adhere, by the enzymes released by the uterus which boost the adhesion rate. By virtue of these qualities, it improves the apposition and adhesion which are crucial phases in the process of implantation. Additionally, it enhances the thickness of a substance, streamlines the procedure of transferring embryos, and consequently safeguards against the ejection of embryos from the uterine canal after the transfer.
- Hyaluronan is a linear polysaccharide with a high molecular weight. It is made up of repeating units of N-acetyl-D-glucosamine and D-glucuronic acid. It engages in autocrine and paracrine communication with the uterine cavity, facilitating embryological development, migration, adhesion, proliferation, and cell differentiation.
- Both the transplanted embryo and the endometrium of the uterus exhibit the presence of cell surface glycoprotein CD44, which serves as the receptor for Hyaluronan. Consequently, the Hyaluronan molecules found in the Embryo glue efficiently fulfil the role of connecting the CD44 receptors on the embryo with the CD44 receptors of the endometrium, thus strengthening the connection between the embryo and the uterine cavity[9].

STAGE 3 - INVASION

The embryo settles into a favourable place at this stage due to the cohesiveness between the cells of the embryo and the endometrial lining, and the implantation begins by invading the cells and is followed by its effective development[9].

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BENEFITS OF EMBRYO GLUE

- Increases the likelihood of a successful implantation by 34%, which increases implantation.
- Enhanced live birth rates by 10% and clinical pregnancy rates by 21%.
- The viscous hyaluronan thickens the embryo, preventing embryos from drifting and lowering the risk of an ectopic pregnancy.
- Hyaluronan has no negative effects on the quality or structure of embryos[10].

EFFECTIVENESS OF EMBRYO GLUE

Embryonic adhesive has been found to enhance the overall success rate of in vitro fertilisation (IVF) procedures. By simulating the uterine environment during implantation, this adhesive sustains the necessary temperature and other conditions. As a result, the embryos maintain optimal health during implantation, leading to a successful pregnancy[11]. In their 2021 study, **Raghunandan K et al.** aimed to determine the impact of embryo glue as a transfer medium on live birth rate and implantation rate. The mothers in the test group applied embryo adhesive during transfer, while standard ET medium was utilised in the test group. Embryo glue substantially increased the overall implantation rate, the rate of multiple pregnancies, and the live birth rate, according to the findings. The positive impact was statistically significant among women aged 35 and older[12]. In their prospective case-control study, **Neeta Singh et al. (2015)** investigated the impact of embryo glue as a transfer medium on the outcomes of in-vitro fertilisation cycles involving fresh non-donor embryos. For the experimental group consisting of 42 women, EmbryoGlue was utilised, whereas conventional culture medium was employed to transfer embryos in the control group. The findings indicated that the rate of clinical pregnancies in the experimental group was 7% greater than that of the control group. Successful implantation was observed in 50% of patients with a history of IVF failure within the study cohort[4].

COST & RISKS OF EMBRYO GLUE

The cost of embryo glue can vary a lot based on where you live, which clinic you go to, and the details of your treatment plan. Embryo glue costs about Rs.15,000 to Rs.20,000 in Delhi and Rs.5,000 to Rs.10,000 in Tamil Nadu. For the most exact and up-to-date price information, it's usually best to contact fertility clinics directly. People who use Embryo Glue don't seem to be at

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risk for harm to the mother or birth problems in the babies. However, several hundred live births have been reported after hyaluronan was used in culture medium[12].

CONCLUSION

Embryo Glue is an effective remedy for in vitro fertilisation (IVF). In the event that a couple decides to incorporate it into their treatment, they will establish a happy outcome for themselves. The implantation of embryos is made easier with the help of this cutting-edge technique, which is also the safest. This method has the highest success rate in embryo transfer and poses the least amount of risk. The reason for this is because it is the procedure that is most popular among fertility specialists and embryologists, and it is a significant step forward in the field of in vitro fertilisation.

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CONFLICTS OF INTEREST: NIL

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- ***For Website Reference:***

  Habitat utilization pattern by winter migrants at Kolleru lake in Andhra Pradesh. http://www.biospace.com. 27 may, 2007.

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