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Original Research Article

A study to evaluate the effectiveness of competency based skill training programme on bandaging techniques among paramedical students

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ABSTRACT

Background: When any individual got any injury or wound the first and foremost remedy is to stop bleeding and prevent further injury. Bandaging is the procedure of casing wound or an injured body part. It is necessary to learn technique of bandaging.
Objectives of the Study: Were to assess the effectiveness of training programme on knowledge and skill regarding selected bandaging techniques among paramedical students.
Research Design: Used for this study was pre-experimental one group pre-test post-test design.
Sampling and Sample Size: It was carried out with 40 samples. Non-randomized convenient sampling technique was used to select the subjects.
Data Collection Methods: A self-administered knowledge questionnaire and observational skill checklist was used to assess the knowledge and skill regarding selected bandaging techniques.
Methods of Data Analysis: The data collected was analysed and interpreted based on descriptive and inferential statistics.
Result & Analysis: Shows that Pre-test knowledge score, 80% (32) of the students were in the poor level of knowledge and remaining 20% (08) were having average level of knowledge. The Post-test knowledge score, 52.5% (21) of the students were in the Good level of knowledge and remaining 47.5% (19) were having average level of knowledge. The Mean score before manipulation was ±4.7 and the standard deviation was ±29.35 whereas after intervention Mean score was ±13.37 and SD was ± 83.52. The mean difference is ± 8.67. The calculated 't' value ± 12.11 which was greater than critical value i.e., ± 2.05 which depicts that significance at the 0.05 level. That pre-test skill was 87.5% (35) found to be inadequate whereas remaining 12.5% (5) were having adequate skill. The 12.5% (5) of them found to be Inadequate and majority 87.5% (35) were shown adequate skill after the training programme. The skill performance of mean score earlier guidance was ±2.85 and the standard deviation was ±17.79 while later intervention Mean score was ±7.47 and SD was ± 46.67. The mean difference was ± 4.62. The calculated 't' value ± 10.34 which was larger value than critical value i.e., ± 2.05 which illustrates that highly significant at the 0.05 level.
Conclusion: From the findings of the study, it can be concluded that training programme was effective in improving the knowledge and skill regarding bandaging techniques among paramedical students.

1. Introduction

Bandage is a middle French term in which bender means 'to bind' and bande means 'a strip' It is a vital part of the

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medical and paramedical practice.[1] However, this feature of the drilling of doctors and nurses, paramedical is often neglected and they are frequently unable to apply bandages that will remain uninterrupted at least until the next day.[2] Annoying bandages is also significant for ambulance team and anyone who stretches first aid.[3] A bandage is a piece of material used either to support a medical device such as dressing or splint or on it's own to provide support to or to restrict the movement of a part of body.[4] Bandage is a middle French word from the old French in which bender means 'to bind' and bandage means 'a strip' Bandaging is a basic procedure, but if carried out incorrectly it has the potential to cause inconsiderable harm.[5] Bandaging skills are essential for all nurses.[6] It is important to be able to choose the correct type, size and composition of bandage and then apply it safely using the most appropriate technique as incorrectly applied bandage may lead to pressure necrosis and subsequent limb amputation.[7] Bandaging technique skills are a significant component of clinical practice hence should train students well during the practical period and this will enhance their knowledge and performance.[8]

2. Objectives

1. Assess the pre-test level of knowledge and skills regarding bandaging techniques among paramedical students
2. Assess the post-test level of knowledge and skills regarding bandaging techniques among paramedical students
3. Find the effectiveness of training programme in terms of gaining knowledge and skills on bandaging techniques among paramedical students
4. Determine the association between the mean pre-test knowledge and skill score of paramedical students on bandaging technique and selected demographic variables.

2.1. Hypothesis

1. H_1: There will be significant difference between pre-test and post-test level of knowledge and skill among paramedical students.
2. H_2: There will be significant association between mean pre-test knowledge and skill score with selected demographic variables.

3. Materials and Methods

In the present study, the researcher aimed at evaluating the effectiveness of training programme on knowledge and skills of paramedical students regarding bandaging technique. Study approach was quantitative evaluative and pre-experimental one group pre-test and post-test research design was used for the current study.[9] The study conducted at paramedical college and non-probability purposive sampling technique was used to select 40 paramedical students studying in Diploma OT and AT course.[10] The researcher used two instruments for the relevant data collection, Socio-demographic variables such as age, sex, religion, education, previous knowledge and skill of bandaging technique, and previous attended training programme on bandaging technique and Structured knowledge questionnaire on bandaging types and technique and Checklist for skill assessment of bandaging technique.[11] Before the training programme collected the data using the research tool followed by five sessions of bandaging technique and at end of the session conducted post-test on knowledge and skill performance using the same questionnaires categorised into three groups in the knowledge aspect poor, average, and good knowledge and skill performance grouped into two categories adequate and inadequate skill based on their score. The collected data were computed by descriptive and inferential statistical methods.[12]

The investigator obtained written permission from the concerned authority.

4. Results

Xplains that majority 19 years and above age group of students were 72.5% (29), remaining were in the age group of 18 and 17 years were 6% (12.5) and 5% (15) respectively. 40% of students were belongs to male and 60% were female students, in thearear of residence 65% of students were day scholars and 35% were residing in the hostel. 22.5% students had previous knowledge and skill of bandaging technique whereas remaining 77.5% were don't have. 85% of the paramedical students did not attend previous training programme on bandaging technique remaining only 15% had participated in the programme.

The data in the Table 2 shows that the Pre-test knowledge score, 80% (32) of the students were having poor level of knowledge and remaining 20% (08) were having average level of knowledge whereas the Post-test knowledge score, 52.5% (21) of the students were in the Good level of knowledge and remaining 47.5% (19) were having average level of knowledge.

Data presented in the Table 3 describes the Mean score before manipulation was ±4.7 and the standard deviation was ±29.35 whereas after intervention Mean score was ±13.37 and SD was ± 83.52. The mean difference was ± 8.67. The calculated 't' value ± 12.11 which is a greater value compared to the critical value i.e., ± 2.05 which depicts that significance at the 0.05 level. Therefore, the null hypothesis was rejected and the research hypothesis was accepted. This outcome indicates that the training programme was effectiveness in enhancing the knowledge of paramedical students about bandaging techniques.

The above Table 4 depicts that pre-test skill performance of paramedical students 87.5% (35) found to be inadequate

Table 1: Frequency and percentage distribution of paramedical students according to demographic variables.[n = 40]

Sl. No	Demographic variable	Frequency (f)	Percentage (%)
1	Age (in years)		
	17	05	12.5
	18	06	15
	19 and above	29	72.5
2	Gender		
	Male	12	40
	Female	28	70
3	Area of residence		
	Day scholar	26	65
	Hostilities	14	35
4	Type of diet		
	Vegetarian		
	Eggetarian	14	35
	Mixed diet	10 16	25 40
5	Previous knowledge and skills of bandaging techniques		
	Yes	09	22.5
	No	31	77.5
6	Have you attended training programme on bandaging techniques?		
	Yes	06	15
	No	34	85
7	Religion		
	Hindu	14	35
	Muslim	05	12.5
	Christian	17	42.5
	Others	04	10

Table 2: Frequency and percentage distribution of paramedical students according to pre-test and post-test level of knowledge [n = 40]

Level of knowledge	Score	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
Poor	0-6	32	80	00	00
Average	7-13	08	20	19	47.5
Good	14-20	00	00	21	52.5
Total		40	100	40	100

Table 3: Comparison of mean pre-test and post- test knowledge scores of paramedical students regarding bandaging techniques [n = 40]

Level of knowledge	Mean	Mean difference	SD	Calculated "t" value	P value
Pre test	4.7	8.67	29.35	12.11	<0.0001
Post test	13.375		83.52		

Table 4: Frequency and percentage distribution of paramedical students according to pre-test and post-testlevel of skill regarding bandaging technique [n = 40]

Level of Skill performance	Score	Pre-test		Post-test	
		f	%	f	%
Inadequate skill	0-5	35	87.5	05	12.5
Adequate skill	6-10	05	12.5	35	87.5
Total		40	100	40	100

Table 5: Comparison of mean pretest and post-test skill scores of paramedical students regarding bandaging techniques [n=40]

Level of Skill performance	Mean	Mean difference	SD	Calculated "t" Score	P value
Pre test	2.85	4.62	17.79	10.34	<0.0001
Post test	7.47		46.67		

Table 6: Association between Pre-testlevel of knowledge on bandaging technique of paramedical students with the selected demographic variable. [n = 40]

Demographic variables	f	Pretest level of knowledge		Chi square	df	P value	Inference
		Poor	Average				
1. Age (in years)							
17	05	3	2				
18	06	3	3	4.08	2	0.395	NS
19 and above	29	25	4				
2. Gender							
Male	12	10	2	0.32	2	0.852	NS
female	28	21	7				
3. Area of residence							
Day scholar	26	21	5	0.43	2	0.806	NS
Hostilities	14	10	4				
4. Type of diet							
Vegetarian	14	11	3				
Eggetarian	10	7	3	0.417	4	0.981	NS
Mixed diet	16	13	3				
5. Previous knowledge and skills of bandaging techniques							
Yes	09	8	1	0.54	2	0.763	NS
No	31	24	7				
6. Have you attended training programme on bandaging techniques?							
Yes	34	29	5	3.95	2	0.138	NS
No	06	3	3				
7. Religion							
Hindu	14	10	4				
Muslim	05	5	0	1.92	6	0.926	NS
Christian	17	12	5				
Others	04	3	1				

S=Significant NS=Non Significant

Table 7: Association betweenpretest skill score of paramedical students with the selected demographic variable. [n = 40]

Demographic variables	f	Pretest skill score		Chi square	df	P value	Inference
		Inadequate skill	Adequate skill				
1. Age (in years)							
17	05	2	3				
18	06	1	5	0.219	2	0.044	NS
19 and above	29	1	28				
2. Gender							
Male	12	2	10	0.144	1	0.704	NS
female	28	3	25				
3. Area of residence							
Day scholar	26	5	22	0.656	1	0.420	NS
Hostilities	14	1	12				
4. Type of diet							
Vegetarian	14	1	13				
Eggetarian	10	0	10	8.882	2	0.011	S
Mixed diet	16	3	13				
5. Previous knowledge and skills of bandaging techniques							
Yes	09	0	9	12.83	1	0.0003	S
No	31	5	26				
6. Have you attended training programme on bandaging techniques?							
Yes	34	5	28	1.148	1	0.283	NS
No	06	0	7				
7. Religion							
Hindu	14	1	13				
Muslim	05	2	6	2.191	2	0.533	NS
Christian	17	2	12				
Others	04	0	04				

S=Significant NS=Non Significant

skill whereas remaining 12.5% (5) having adequate skill and in the post-test 12.5% (5) of the paramedical students found to be Inadequate and majority 87.5% (35) were shown adequate skill after the bandaging technique training programme.

Table 5 defines the skill performance of mean score before intervention was ±2.85 and the standard deviation was ±17.79 while after intervention Mean score was ±7.47 and SD was ± 46.67. The mean difference was ± 4.62. The calculated 't' value ± 10.34 which was larger value compared to the critical value i.e., ± 2.05 which illustrates that highly significant at the 0.05 level. Therefore, the null hypothesis was rejected and the research hypothesis was accepted. This outcome directs that the training programme was effective in enhancing the skills of paramedical students towards bandaging techniques.

The above Table 6 shows that the association between the selected sociodemographic variables such as age, gender, area of residence, type of diet, previous knowledge and skills of bandaging techniques, Previous participation in training programme, religion and Mean Pre-test knowledge score found to be non-significant at 0.05 level since each calculated value of demographic variables were lesser than critical value. This result showed that null hypothesis was accepted and research hypothesis was rejected.

The above Table 7 shows that the association between the selected sociodemographic variables such as age, gender, area of residence, Previous participation in training programme, religion and Mean Pre-test skill score found to be non-significant at 0.05 level since each calculated value of demographic variables were lesser than critical value. This result showed that null hypothesis was accepted and research hypothesis was rejected. Whereas type of diet, previous knowledge and skills of bandaging techniques, demographic variables found to be significant at 0.05 level of significant and calculated chi square value is greater than critical value. Hence the null hypothesis was rejected while the research hypothesis was accepted.

5. Discussion

The study was aimed to see the effectiveness of competency based skill training programme among O T technology students. majority 72.5% (29), of the students were belongs to 19 years and above age group and 40% of students were male and 60% were female students, the more 65% of students were day scholars and remaining 35% were residing in the hostel. The students i.e. 22.5% had previous knowledge and skill of bandaging technique and 85% of the paramedical students did not attend previous training programme, remaining i.e. only 15% had participated in the programme. In other hand in pre-test knowledge 32 (80%) of the students were having poor level of knowledge and remaining 08 (20%) were scored average level of knowledge. Majority of the students were Hindus Meanwhile in the post-test 52.5% i.e. 21 students were having good level of knowledge and residual 19 (47.5%) were having average level of knowledge. Pertaining to the skill level in pre-test most of the students 87.5% (35) exhibits inadequate skill whereas remaining 12.5% (5) were having adequate skill and in the post-test 12.5% (5) of the students having Inadequate skill and majority 87.5% (35) were shown adequate skill. In pre and post-test level of knowledge, calculated t value was 12.11 which was higher than critical value and in relation to the skill level the computed t value was 10.34 which was also higher than their table value it shows that the competency based skill training programme was effective in enhancing knowledge and skill related to bandaging. With respect to the association between pre-test knowledge level and selected demographic variable shows none of the variables were non-significant at 0.05 level but related to the skill the variables such as type of diet and Previous knowledge and skills of bandaging techniques found to be significant.

6. Conclusion

In health care sector the para medical students play paramount role.[13] While taking care of the patient the students should know about the techniques of bandaging and they should be through with this type of technique. This research study serves in enhancing the knowledge of bandages, types advantages and the way of or techniques of application. This research study also concentrates in development of skills in performance of bandages technique.[14] So any health care professionals should know about this types of procedures to save the life of an individuals in hospitals and in any environment.[15]

7. Source of Funding

None.

8. Conflict of Interest

None.

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