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Original Research

A study on Progress of latex wound models for the wound dressing training of nursing college at Agra

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ABSTRACT:

Introduction: The students from the theoretical analysis can see the actual photos of other wound attributes. Therefore, it has been unnecessary to use some pieces of the wound model, which was purchased in the set for training. **Materials and methods:** The researcher calculated the sample size in accordance with the quasi-experimental research design, conducted power analysis with G power program version 3.1.9.2, defined the value of alpha = .05 power = .08, and medium effect size= .7, conducted a one-tailed test, and acquired the sample size in a total of 60 persons for 30 persons per group. **Results:** Most participants were female for 87.1%, having 19-21 years of age, whereas most of them were aged 20 years old or 50%, having experiences in wet dressing while studying/in the laboratory for 2-6 times, whereas most of them had the experiences for 3 times or 41.4%, and having experiences in dry dressing while studying/in the laboratory for 1-6times, whereas most of them had experienced for 3times or 34.2%. **Conclusion:** The finding of this research results indicated that the use of the latex wound model for wound dressing training could enhance the wound dressing practical skill of the nursing students.

Keyword: Development, latex wound models, wound dressing, training of nursing students

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INTRODUCTION

Each student will be instructed for theory and practical training both in dry dressing and wet dressing once before field practice with the patients.[1] The amount of both dry and wet wound models was insufficient for students' self-study and learning, according to learning and teaching management.[2] Therefore, student skill training could only be done 1-2 times per person. The results from the current circumstances showed less practical training with patients in wound dressing as the university is a source of research of health science faculties, especially the practical training of students in different faculties that must be performed with the same patient. One reason may be due to patient rights, which makes students less likely to perform procedures with patients.[3]This caused the nursing students to have less field experience in wound dressing with patients. Thus, in the theoretical learning and teaching management of nursing students, the teachers managed their teachings, using a model for practical training support.[2,3,4] The wound model of the Faculty of Nursing has currently been a model made of silicone used for both small dry and wet wounds. The wound model appearance has been quite hard, without a binder. A transparent adhesive tape must be used for fastening with the basic model upon training use, resulting in a practical inconvenience. The hard-wound feature has also triggered a failure to place the plane alignment adjacent to the basic nursing practice model. The current studied price of the wound models was around 1,000-2,000 Baht per piece and sold in a set, whereas the price of a small set was at 4,000 Baht, and the price of a large set was at 95,000 Baht.[5]Rarely have some portions of wound models been used for practical instruction. Most practical training courses were simple, leading only to the student's recognition of dry dressing and wet dressing. The students from the theoretical analysis can see the actual photos of other wound attributes. Therefore, it has been unnecessary to use some pieces of the wound model, which was purchased in the set for training.

MATERIALS AND METHODS

The participants are the second-year nursing students Dr. Tandon Nursing College, Agra, India. The characteristics of the participants are as follows: 1)

being a second year nursing student who has already been taught the theory of wound dressing, 2) being a person with real service users who is inexperienced in wound dressing, 3) willing to participate in the program. The participants will be advised to teach at school at least once per person for theory and training in wound dressing. The participants in the study group will receive the latex wound model in the dormitory for seven days for wound dressing skills. The control group was only told how to use the latex wound model and did not obtain the model in the dormitory for training. In this research, the researcher calculated the sample size in accordance with the quasi-experimental research design, conducted power analysis with G power program version 3.1.9.2, defined the value of alpha = .05 power = .08, and medium effect size = .7, conducted a one-tailed test, and acquired the sample size in a total of 60 persons for 30 persons per group. After receiving permission, the researcher has met the participants for the self-introduction and clarification to the participants to be informed of the research objective, research procedure, research benefit, and data collection, and then asked for collaboration to participate in the research. Participants were entitled to make study participation choices freely. In the case where the participants agreed to participate in the study, prior to each research start, the researcher will ask the examples to affix their signatures to give consent to the research participation. The researcher will collect the personal data of the participants as confidential and use an encryption instead of the real name. Only the outcome of the study conclusion is especially disclosed. In the event that the students declined to participate in the study or agreed to participate in the study and then refused to do so before the study was finished, the students were permitted to do so without clarifying their purpose to the researcher. Those denial results would have no impact on the students with respect to the learning and teaching evaluation of the students.

RESULTS

Most participants were female for 87.1%, having 19-21 years of age, whereas most of them were aged 20 years old or 50%, having experiences in wet dressing while studying/in the laboratory for 2-6 times, whereas most of them had the experiences for 3 times or 41.4%, and having experiences in dry dressing while studying/in the laboratory for1-6times, whereas most of them had experienced for 3times or 34.2%, as shown in Table1.

Table 1: Demographic characteristics of the participants in the control and experimental groups

Demographic characteristic	Total n(%)	Control group n (%)	Experimental group n (%)	Statistic test value	p value
Gender				1.073*	.613
Female	61 (87.1)	30 (85.7)	31 (88.5)		
Male	9 (12.8)	5 (14.2)	4 (11.4)		
Age (year)				6.750†	.019
19	29 (41.4)	17 (48.5)	12 (34.2)		
20	33 (47.1)	12 (34.2)	21 (60.0)		
21	8 (11.4)	6 (17.1)	2 (5.7)		
Experiences in wet dressing while studying/in thelaboratory (times)				3.258†	.516
2	3 (4.2)	0 (0.00)	2 (5.7)		
3	28 (40.0)	17 (48.5)	11 (31.4)		
4	23 (32.8)	10 (28.5)	13 (37.1)		
5	11 (15.7)	5 (14.2)	6 (17.1)		
6	5 (7.1)	2 (5.7)	3 (8.5)		
Experiences in dry dressing while studying/in thelaboratory(times)				4.735†	
1	9 (12.8)	5 (14.2)	4 (11.4)		
2	15 (21.4)	7 (20.00)	8 (22.8)		
3	24 (34.2)	11 (31.4)	13 (37.1)		
4	14 (20.00)	6 (17.1)	8 (22.8)		
5	5 (7.1)	5 (14.2)	0 (0.00)		
6	3 (4.2)	1 (2.8)	2 (5.7)		
Note. * = Fisher's exact test	† = Chi-square test				

The finding from the comparative result between the mean score of efficiency of the invented latex wound model and that of the primary wound model indicated that the mean score of efficiency of the invented latex wound model was higher than that of the primary wound model of the Faculty of Nursing at statistical significance ($p < .05$) as shown in Table 2.

Table 2: Comparative result between the mean score of efficiency of the invented latex wound model(wet wound) and the mean score of efficiency of the original wound model (wet wound) of the Faculty of Nursing.

Variables	x± S.D	Mean Rank / Sum of Rank	Z	P-Value
Efficiency of the invented latex wound model	36.30± 3.89	23.63 (90.50)	-5.928	.000
Efficiency of the wound model of the Faculty of Nursing	29.61 ± 8.13	31.01 (1,620.50)		

The finding from the comparative result between the mean score of efficiency of the invented latex wound model and that of the primary wound model (dry dressing) indicated that the mean score of efficiency of the invented latex wound model was higher than that of the primary wound model of the Faculty of Nursing at statistical significance (p<.05) as shown in Table 3.

Table 3: Comparative result between the mean score of efficiency of the invented latex wound model (dry wound) and the mean score of efficiency of the original wound model (dry wound) of the Faculty of Nursing

Variables	x± S.D	Mean Rank / Sum of Rank	Z	P-Value
Efficiency of the invented latex wound model	36.71 ± 4.61	25.50 (24.50)	-6.252	.000
Efficiency of the wound model of the Faculty of Nursing	29.05 ± 7.20	29.06 (1515.50)		

DISCUSSION

The efficiency of both wet and dry dressing style latex wound models in individual items yielded consistent results and the mean efficiency score of the latex wound model was statistically significant higher than that of the original wound model of the Faculty of Nursing ($p < .001$).However, it might be due to the latex wound model which has been the instructional media in the tangible 3D characteristic, resulting in an easy understanding of the learners and a proper conceptualization as per the following details.[6]The sample size of 10 cm was responsible for the highest portability and mobility of the model. 10 cm and width. The thickness of the thin board. The said model is therefore compact and mobile, and is similar to the Faculty of Nursing's small-sized and mobile wound model. The ease of use ability was the secondary factor. The finding mentioned in the event of consideration that alcohol can be used for wound dressing according to the latex wound model, transpore tape can be used for closing the wound, and a band is available for repairing the model to be repaired so that the model will not slip at the time of the wound dressing training. While alcohol cannot be used with the wound model of the Faculty of Nursing for cleaning the wound, no band is available, and micropore tape must be mostly used for closing the wound to prevent the band-aid. Moreover, in the opinions of the students, the model is stable in skin color, primary shape, and elasticity due to the property of the para rubber-made wound model that latex can be stable like resin or fiber glass, elastic like the real organ, and durable, without fracture from fall.[7] The students rated the efficiency score at the highest level due to the reality of the skin attribute and color. To make the wound look authentic and different from the original model of one hue, the colors that show the wound discharge in the wet wound and the realistic wound stitches in the dry wound are used.In the opinions of the students, the possible cause of the lowest level of similarity of the model shape to the real human wound included the different shapes and wound depth sizes of the real wound attribute in each position, while the invented latex wound model consists of smooth wound edge and level wound depth.

CONCLUSION

The finding of this research results indicated that the use of the latex wound model for wound dressing training could enhance the wound dressing practical skill of the nursing students. Therefore, nursing instructors should encourage students to use the latex wound model to practice wound dressing skills at the dormitory after teaching in the laboratory to increase skills before practicing with patients.

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