International Journal of Advanced Research and Development
www.advancedjournal.com
ISSN: 2455-4030
Received: 12-11-2022, Accepted: 30-11-2022, Published: 15-12-2022
Volume 7, Issue 6, 2022, Page No. 14-20

A study to assess the effectiveness of silicon foam dressing versus povidone iodine dressing to promote healing of pressure ulcers among critically ill patients at super speciality hospitals, Visakhapatnam

Arif Siraj Ladhani[1], C H Tulasi[2]
[1] Gitam Institute of Nursing, Gitam University, Visakhapatnam, Andhra Pradesh, India
[2] Assistant Professor, Department of Medical and Surgical Nursing, Gitam Institute of Nursing, Gitam University, Visakhapatnam, Andhra Pradesh, India

Abstract
Back ground of study: The skin is the largest organ of the body, accounting for about 15% of the total adult body weight. It performs many vital functions, including protection against external physical, chemical, and biologic assailants, as well as prevention of excess water loss from the body and a role in thermoregulation. The skin is continuous, with the mucous membranes lining the body's surface
Bedsores can happen when a person is bedridden or otherwise immobile, unconscious, or unable to sense pain. Bedsores are ulcers that happen on areas of the skin that are under pressure from lying in bed, sitting in a wheelchair, or wearing a cast for a prolonged time. Bedsores are also called pressure injuries, pressure sores, pressure ulcers, or decubitus ulcers. Bedsores can be a serious problem among frail older adults. They can be related to the quality of care the person receives. If an immobile or bedridden person is not turned, positioned correctly, and given good nutrition and skin care, bedsores can develop. People with diabetes, circulation problems, and poor nutrition is at higher risk.
Method: After obtaining administrative permission and ethical clearance from IEC, GIMSR, Visakhapatnam, 30 Pressure ulcer patients subject was selected a sample using non probability purposive sampling technique on critically ill patients were taken for the study with an experimental pre-test and post-test group. Pilot study was conducted on 2 subjects to check the reliability of tool and feasibility of the study. The tool used in the study was standard Pressure ulcer scale for healing (PUSH tool). The collected data was analyzed by descriptive and inferential statistics.
Results: The study results shows that most of the Pressure Ulcer patients in the experimental group, 14(93.3%) were aged above 46 years, 8(53.3%) were female, 7(46.7%) had primary education, 8(53.3%) belonged to joint family, 7(46.7%) were residing in rural area, 5(33.3%) were government employee, 6(40%) had monthly income of Rs.5000 – 7000/month, 15(100%) had mixed type of diet, 14(93.3%) had no known allergy and 10(66.7%) had no habits. The study results also shows that most of the Pressure Ulcer patients in the control group, 14(93.3%) were aged above 46 years, 8(53.3%) were male, 8(53.3%) had primary education, 8(53.3%) belonged to joint family, 7(46.7%) were residing in urban area, 6(40%) were self-employed, 6(40%) had monthly income of Rs.10001 – 15000/month and Rs.5000 – 7000/month respectively, 15(100%) had mixed type of diet, 15(100%) had no known allergy and 5(33.3%) had no habits. The study results shows that most of the Pressure Ulcer patients in the experimental group, most of the Pressure Ulcer patients, 2(13.3%) were admitted in the hospital due to CVA and ischemic stroke, 6(40%) had no hereditary disease, 7(46.7%) had hypertension as comorbid condition, 6(40%) were comfortable in supine and lateral position,13(86.7%) had history of previous hospitalization, 4(26.7%) were hospitalized due to hypertension and diabetes mellitus and 8(53.3%) had moderate pain The study results also show that in the control group, most of the Pressure Ulcer patients, 2(13.3%) were admitted in the hospital due to OP poisoning, 14(93.3%) had no hereditary disease, 7(46.7%) had hypertension as comorbid condition, 7(46.7%) were comfortable in lateral and prone position, 12(80%) had history of previous hospitalization, 9(60%) were hospitalized due to hypertension and 8(53.3%) had severe pain. viii In the experimental group, the mean score of BMI was 25.33± 3.15 with a median of 25.0. The minimum score was 20.0 and the maximum score was 30.0. In the control group, the mean score of BMI was 24.90±3.65 with a median of 25.0. The minimum score was 20.0 and the maximum score was 30.0.
Conclusion: The study conclusions were the research attempt to show that the knowledge has been gained by the researcher during the study and also an attempt to generalize the findings. The following conclusions were drawn on the basis of present study showed to promote the healing of pressure ulcers in ICU after acquiring the bedsore were reduced to prevent the complication and to have a healthy life there by to reduce the mortality and morbidity rates.

Keywords: pressure ulcer or bedsore, povidone iodine, silicon foam, dressing, healing

Introduction

"Prevention is better than cure"
--- Desiderius Erasmus

The skin is the largest organ of the body, accounting for about 15% of the total adult body weight. It performs many vital functions, including protection against external physical, chemical, and biologic assailants, as well as prevention of excess water loss from the body and a role in thermoregulation. The skin is continuous, with the mucous membranes lining the body's surface.

The integumentary system is formed by the skin and its derivative structure. The skin is composed of three layers:

the epidermis, the dermis, and subcutaneous tissue. The outer most level, the epidermis, consists of a specific constellation of cells known as keratinocytes, which function to synthesize keratin, a long, threadlike protein with a protective role. The middle layer, the dermis, is fundamentally made up of the fibrillar structural protein known as collagen. The dermis lies on the subcutaneous tissue, or panniculus, which contains small lobes of fat cells known as lipocytes. The thickness of these layers varies considerably, depending on the geographic location on the anatomy of the body.

Bedsores can happen when a person is bedridden or otherwise immobile, unconscious, or unable to sense pain. Bedsores are ulcers that happen on areas of the skin that are under pressure from lying in bed, sitting in a wheelchair, or wearing a cast for a prolonged time. Bedsores are also called pressure injuries, pressure sores, pressure ulcers, or decubitus ulcers. Bedsores can be a serious problem among frail older adults. They can be related to the quality of care the person receives. If an immobile or bedridden person is not turned, positioned correctly, and given good nutrition and skin care, bedsores can develop. People with diabetes, circulation problems, and poor nutrition are at higher risk

Need For Study

Pressure ulcers are big challenge in the patient care setting. Taking the necessary measure and keen observations has proved in early detection of pressure ulcers and their management. Many strategies have been implemented so far in health care both for the prevention and treatment of pressure ulcers. From changing positions and massaging of pressure points to the use of powders and emollients, various interventions has been implemented to thwart the progress of pressure ulcers or to promote its healing. Nurses are directly related in the management of the patient care and prevention pressure ulcers or promoting healing of pressure ulcers which is the tool to assess their standard of care. So many strategies have been placed in the improvement of pressure wounds like using iodine povidone dressings, hydrogen peroxide washes and newer ones like Hydrocolloid dressing. Using Silicon foam dressing in wound care has shown achievable results in promoting wound healing be it like surgical, or any other wound.

Benefits of silicon foam dressing

Foam dressings are generally prescribed for their biggest advantage: providing a warm, moist environment ideal for healing. However, there are many other benefits that come with this product category. For instance, they: Don’t adhere to the wound and Serve as a cushion to protect the affected area as well as Provides a barrier against bacteria that Can be used in the case of infection and are suitable for wounds with hyper granulation and May be used during compression therapy and easy to apply and remove

Complications of pressure ulcers if not treated:

Although noninfectious complications of pressure ulcers occur, systemic infections are the most prevalent. Noninfectious complications include amyloidosis, heterotopic bone formation, Marjolin ulcer, and systemic complications of topical treatment. Infectious complications include bacteremia and sepsis, cellulitis, endocarditis, meningitis, osteomyelitis, septic arthritis, and sinus tracts or abscesses.

Statement of the Problem

"A study to assess the effectiveness of silicon foam dressing versus povidone iodine dressing to promote healing of pressure ulcers among critically ill patients at super speciality hospitals, Visakhapatnam”.

Objectives

1. To assess the level of pressure ulcers Grade among critically ill patients.
2. To assess the level of pressure ulcers Grade with Silicon foam dressing among critically ill patients (Experimental group).
3. To assess the level of pressure ulcers Grade with Povidone iodine dressing among critically ill patients. (Control group)
4. To know the association existing between demographic variables and in process of healing pressure ulcers among critically ill patients.

Variable of the Study

Variable is an attribute of a person or an object that varies, that is it takes on different forms the variables identified in the study are

Dependent variable

The variable that is hypothesized to depend, caused by another variable. In this study the Pressure ulcer wound Healing for ICU Patients was the dependent variable.

Independent variable

The variable that is purposively manipulated or changed by the researcher in this study Silicon foam dressing and Povidone Iodine dressing. was the independent variable

Hypothesis

H0: There is No Significant improvement in the pressure ulcer Healing using Silicon foam dressing over Povidone Iodine dressing.

H1: There is significant improvement in the level of healing of pressure ulcer using Silicon foam dressing over Povidone Iodine dressing.

Assumptions

Investigator assumes that:

- It can Escalates wound healing.
- It decreases the risk for sepsis
- Reduce the risk for complication
- Patient would cooperate with the investigator

Delimitations

The study is limited to patients, who are:

- Having uncontrolled diabetes
- Has coagulation disorder
- Patients who don’t want to participate

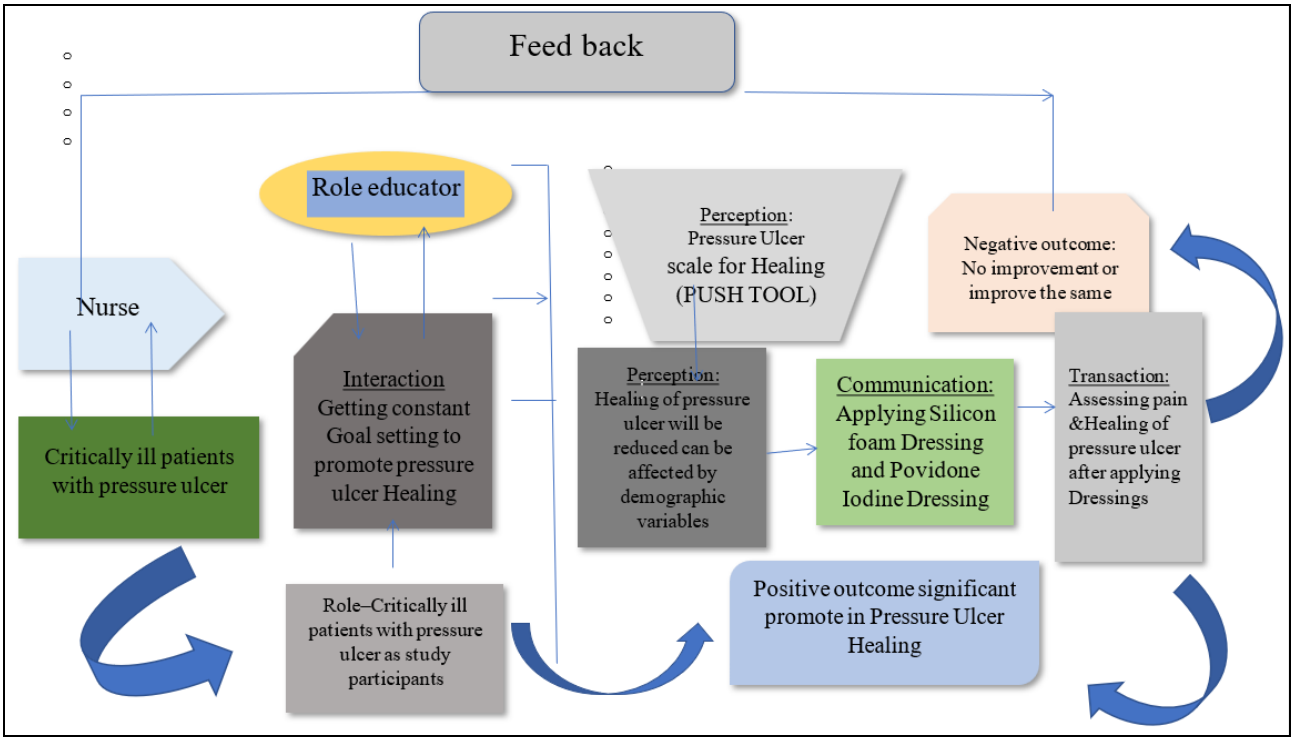

Fig 1: Conceptual Framework based on Modified King's Goal Attainment Theory 2006

Review of Literature

1. Elisabeth Hahne, Monera EI *et al* 2019 [1] conducted a randomized controlled parallel group trial on the effectiveness of two silicone dressings for sacral and heel pressure ulcer prevention in high-risk intensive care unit patients compared to no dressings. There is emerging evidence that the application of dressings to pressure ulcer predilection areas (sacrum and heels) improves prevention strategies. Between June 2015 and July 2018, a randomized, controlled, two arms, superiority pragmatic study was performed with a concealed 1:1 allocation to the intervention and control group. Patients assigned to the intervention group had dressings applied to sacrum and heels. In total, n = 7575 patients were screened for eligibility, n = 475 patients were included and allocated to both groups. Finally, n = 212 patients in the intervention and n = 210 in the control groups we reanalyzed. Mean age was 63.5 years and the majority was male (65.4%). The cumulative pressure ulcer incidence category II and above was 2.8% in the intervention, and 10.5% in the control group (p = 0.001). Compared to the control group, the relative risk in the intervention group was 0.26 (95% CI 0.11 to 0.62) and the absolute risk reductionwas0.08 (95% CI 0.03 to 0.13). Conclusion: Results indicate that the application of dressings in addition to standard prevention in high-risk intensive care unit patients is effective in preventing pressure ulcers at the heels and sacrum.
2. N. Santamaria, M. Gertz *et al*, 2015 [2] conducted border II trial on the Clinical effectiveness of a silicone foam dressing for the prevention of heel pressure ulcers in critically ill patients. A cohort of critically ill patients was enrolled at the Royal Melbourne Hospital. Each patient had the multi-layer soft silicone foam dressing applied to each heel on admission to the emergency department. The dressings were retained with a tubular bandage for the duration of the patients' stay in the ICU. The skin under the dressings was examined daily and the dressings were replaced every three days. The comparator for our cohort study was the control group from the recently completed Border Trial. Of the 191 patients in the initial cohort, excluding deaths, loss to follow-up and transfers to another ward, 150 patients were included in the final analysis. There was no difference in key demographic or physiological variables between the cohorts, apart from a longer ICU length of stay for our current cohort. No PUs developed in any of our intervention cohort patients compared with 14 patients in the control cohort (n=152; p<0.001) who developed a total of 19 heel Pus.

Research Methodology

Research Approach

Research approach is the most significant part of any research. The appropriate choice of the research approach depends on purpose of the research study taken. "The approach to research is an umbrella which covers the basic procedure for conducting the research."

The Research approach adopted for the present study was quantitative Experimental Research approach which was felt to be the most important appropriate as it comprises practicability, feasibility to a certain extend generations.

Research design

The research design is the researchers overall plan for answering the research questions. A research design is a blue print for conducting the study that could maximize control over factors that could interfere with validity of finding.

In the present study selection was based on the objectives of the study. The research design selected for the present study was Quasi-experimental pre-test post- test non-equivalent group design. The primary objective is to predict the Effectiveness Of Silicon Foam Dressing Versus Povidone Iodine Dressing to Promote Healing Of Pressure Ulcers Among Critically Ill Patients.

Setting of the Study

Setting of the study refers to the physical location and conditions in which data collection takes place in the study. The present study was conducted at ICU in Gitam Institute of Medical Sciences and KGH Hospital, Yendada, Visakhapatnam District. The study includes the adults aged 30 years & above of Pressure Ulcer patients. The reason for selecting this ICU in Gitam Institute of Medical Sciences & KGH Hospital was based on investigator interest, convenience, and feasibility, availability of subjects & cooperation of the management in Promoting the healing of Pressure Ulcers.

Sample & Sample Technique

A sample is set of elements that make up the population& sampling is process of selecting representative units of a population for research study.

In the present study, the samples selected were pressure ulcer patients. The selected samples were free from bias & errors. Sampling technique refers to the procedure that researcher would adopt in selecting some sampling units from which inferences about the population are drawn. The sampling technique used for the selecting the subjects as sample was non probability purposive sampling technique.

Sample Size

30 pressure ulcer patients were selected for the study.

Sampling Characteristics

It includes the age, gender, education, religion, family type, occupation, residence type, monthly income, type of diet, BMI, history of previous hospitalization & vital signs.

Citeria for selection of sample

Inclusion criteria

The study includes the patients who were

1. Patients admitted in Critical Care Units / Wards.
2. Bed ridden patients (more than 7 days)
3. Patients with pressure ulcers
4. Patients with poor skin Integrity.
5. Patients with or without history of comorbidities are included in this study.
6. Patients speaking Telugu, Hindi and English.

Exclusion Criteria

The study excludes the patients who were

1. Patients who don't want to participate in the study
2. Patients having Coagulation disorders
3. Patients with Uncontrolled Diabetes.

Methods of Data Collection

Data Collection is a precise, systematic gathering of information relevant to the research process. Since the study was primarily concerned with the assessment of effectiveness of silicon foam dressing and povidone iodine dressing among pressure ulcer patients, the researcher planned to collect the information from the subjects using standard Pressure Ulcer scale for Healing (PUSH TOOL)

In the present study, the researcher has used standard Pressure Ulcer scale for Healing (PUSH TOOL)

Development of the Tool

A standard Pressure Ulcer scale for Healing (PUSH TOOL) were used with consultation of experts

To assess the effectiveness of silicon foam dressing and povidone iodine dressing among pressure ulcer patients, a standard Pressure Ulcer scale for Healing (PUSH TOOL) were used to collect the data from the respondents, based on the conceptual framework & hypothesis.

Description of the Tool

In the present study, the researcher constructed the tool which consists of 3 sections.

Section I: It consists of 10 Questions such as Age, Gender, Educational status, Type of family, Type of residence, Occupation, Monthly income, Type of diet, Any known allergy, Habits.

Section II: It consists of 10 Questions such as Any hereditary disease, Any comorbid condition, Comfortable position, Any history of previous hospitalization, Cause of hospital admission, Integrity of pain, BMI, Date of admission, Date of discharge, Vital signs.

Section III: It consists of Pressure Ulcer scale for Healing (PUSH TOOL) which will help to Assist the Length and width of the pressure ulcer, Amount of exudate and Tissue Type.

Pressure Ulcer Scale for Healing (PUSH TOOL)

Patient Name_____

Ulcer Location _____

Directions

Observe and measure the pressure ulcer. Categorize the ulcer with respect to surface area, exudate, and type of wound tissue. Record a sub-score for each of these ulcer characteristics. Add the sub-scores to obtain the total score. A comparison of total scores measured over time provides an indication of the improvement or deterioration in pressure ulcer healing.

Table 1: Research tool

LENGTH X WIDTH (In cm2)	0 0	1 < 0.3	2 0.3 – 0.6	3 0.7 – 1.0	4 1.1 – 2.0	5 2.1 – 3.0	Sub-score
		6 3.1 – 4.0	7 4.1 – 8.0	8 8.1 – 12.0	9 12.1 – 24.0	10 > 24.0	
EXUDATE AMOUNT	0 None	1 Light	2 Moderate	3 Heavy			Sub-score
TISSUE TYPE	0 Closed	1 Epithelial Tissue	2 Granulation Tissue	3 Slough	4 Necrotic Tissue		Sub-score
							Total Score

Length X Width

Measure the greatest length (head to toe) and the greatest width (side to side) using a centimeter ruler. Multiply these two measurements (length x width) to obtain an estimate of surface area in square centimeters (cm2). Caveat: Do not guess! Always use a centimeter ruler and always use the same method each time the ulcer is measured.

Exudate Amount

Estimate the amount of exudate (drainage) present after removal of the dressing and before applying any topical agent to the ulcer. Estimate the exudate (drainage) as none, light, moderate, or heavy.

Tissue Type

This refers to the types of tissue that are present in the wound (ulcer) bed. Score as a "4" if there is any necrotic tissue present. Score as a "3" if there is any amount of slough present and necrotic tissue is absent. Score as a "2" if the wound is clean and contains granulation tissue. A superficial wound that is re-epithelializing is scored as a "1". When the wound is closed, score as a "0".

1. Necrotic Tissue (Eschar): black, brown, or tan tissue that adheres firmly to the wound bed or ulcer edges and may be either firmer or softer than surrounding skin.
2. Slough: yellow or white tissue that adheres to the ulcer bed in strings or thick clumps, or is mucinous.
3. Granulation Tissue: pink or beefy red tissue with a shiny, moist, granular appearance.
4. Epithelial Tissue: for superficial ulcers, new pink or shiny tissue (skin) that grows in from the edges or as islands on the ulcer surface.
5. Closed/Resurfaced: the wound is completely covered with epithelium (new skin).

Directions

Observe and measure pressure ulcers at regular intervals using the PUSH Tool.

Date and record PUSH Sub-scores and Total Scores on the Pressure Ulcer Healing Record below.

Table 2

Pressure Ulcer Healing Record				
Day	0	4	8	12
Length x Width				
Exudate Amount				
Tissue Type				
PUSH Total Score				

Graph the PUSH Total Scores on the Pressure Ulcer Healing Graph below

Table 3

Total Push Score	Pressure Ulcer Healing Graph			
17				
16				
15				
14				
13				
12				
11				
10				
9				
8				
7				
6				
5				
4				
3				
2				
1				
Healed =0				
Day	0	4	8	12

Validity Of the Tool

Validity refers to the assessment of instrument ability to measure what it intends to measure, the degree to which the data collection tool reflects the body of knowledge pertaining to concept being studied.

The prepared tool along with sample characteristics, Pressure Ulcer Scale for Healing (PUSH TOOL) was submitted to five experts who had specialization in various areas like Medicine. Pharmacology and Nursing sciences. Suggestions and recommendations given by the experts were accepted and necessary corrections were done to modify the tool. The tool was found to be practicable, feasible & valid.

Reliability of Tool

Reliability is a degree of consistency & accuracy with which an instrument measures the attribute for which it is designated to measure.

In the present study Pressure Ulcer Scale for Healing (PUSH TOOL) is a standardized tool. A total of 2 patients with pressure ulcer were selected by purposive sampling techniques at selected ICU of GIMSR hospital to find the reliability of the tool.

Pilot Study

Pilot study is a small-scale version or a mini study of a major study. The main objectives of pilot study are to help the researcher to become familiar with the use of tool and find out the difficulties to overcome before the conduction of main study.

The pilot study was conducted in ICU unit of GIMSR hospital, Visakhapatnam to estimate the feasibility of the study. The investigator obtained permission from the concerned authority prior to the study. The purpose of the study was explained to the respondents prior to the study and informed consent was obtained to get their cooperation. Four respondents were assured of the confidentiality of their identity in a similar way as the final data collection and they were selected by using purposive sampling technique. The subjects found the language of the tool simple and understandable. The pilot study was conducted on 10/06/2022, After conducting pilot study, it was found that the study was feasible, the tool was relevant and the cost of the study was within the limit.

Plan for Data Analysis

Data analysis is the systematic organization and synthesis of research data and testing of the research hypothesis by using the collected data. The collected data was coded and transformed to master sheet for statistical analysis. The following methods were planned to organize the data. They are descriptive statistics and inferential statistics.

Descriptive Statistics

- Frequency and percentage distribution of demographic variables of Pressure Ulcer patients in the experimental and control group.
- Frequency and percentage distribution of clinical variables of Pressure Ulcer patients in the experimental and control group.
- Effectiveness of Silicon Foam Dressing versus Povidone Iodine dressing on the level of healing pressure ulcer among critically ill patients within and between the experimental and control group.
- Describe the Association of pretest level of pressure ulcer among critically ill patients with their selected demographic variables in the experimental group.

Inferential Statistics

- Paired "t" test was used to find out the differences between pretest and post test scores on Pressure Ulcer among Critically ill patients
- Chi square values are computed to find out the relationship between silicon foam dressing and selected variables namely age, gender, educational status, type of family, religion, type of residence, occupation, monthly income, type of diet, BMI, any history of previous hospitalization, if yes specify, date of discharge & vital signs.
- ANOVA was used to compare between pre-test and post-test.

Data Analysis and Interpretation

Effectiveness of Silicon Foam Dressing versus Povidone Iodine dressing on the level of healing pressure ulcer among critically ill patients within and between the experimental and control group using Two Way Repeated Measures ANOVA.

Table 4: n = 30(15+15)

Group	Test	Pressure ulcer	
		Mean ±SD	**Within subject effect (time* Group) F-value (p-value)**
Experimental group	Pretest (0)	15.20±1.32	F=147.165 P=0.0001 S***
	Post- test 1 (4)	10.80±1.52	
	Post-test 2 (8)	7.13±1.64	
	Post Test 3 (12)	2.73±1.67	
Control group	Pretest (0)	14.80±1.61	
	Post -test 1 (4)	12.73±1.71	
	Post- test 2 (8)	11.67±1.54	
	Post Test 3 (12)	9.73±1.62	
Pair wise comparison – Bonferroni		Mean Diff.	Sig
Experimental group	Pretest Vs. Post- test 1	4.400	0.001*
	Post- test 1 Vs. Post- test 2	3.667	0.001*
	Post- test 2 Vs. Post- test 3	4.400	0.001*
	Pretest Vs. Post- test 3	12.467	0.001*
Control group	Pretest Vs. Post- test 1	2.067	0.001*
	Post- test 1 Vs. Post- test 2	1.067	0.001*
	Post- test 2 Vs. Post- test 3	1.933	0.001*
	Pretest Vs. Post- test 3	5.067	0.001*
Between group comparison		Mean Diff.	Sig
Experimental Vs. Control	Pretest	0.400	P=0.463
	Post- test 1	1.933	0.003*
	Post- test 2	4.533	0.001*
	Post- test 3	7.000	0.001*

*p<0.05, S – Significant

The table 12 shows the effectiveness of Silicon Foam Dressing versus Povidone Iodine dressing on the level of pressure ulcer healing among critically ill patients within and between the experimental and control group using Two Way Repeated Measures ANOVA.

The table shows that the calculated F value of F = 147.165 was found to be statistically significant at p<0.001 which clearly infers that there was significant difference in the overall level of pressure ulcer between the groups in which the critically ill patients in the experimental group had more reduction in the level of pressure ulcer after the administration of Silicon Foam Dressing than the patients in the control group who had been administered with Povidone Iodine dressing.

The table also shows that the pairwise comparison using Bonferroni adjustments in the experimental group. The pairwise comparison of pretest Vs. post- test 1, post- test 1 Vs. post- test 2, post- test 2 Vs. post- test 3 and pretest Vs. post- test 3 shows that there was significant difference in the level of pressure ulcer in all the stages which was found to be statistically significant at p<0.05 level. This clearly shows that Silicon Foam Dressing administered to the critically ill patients in the experimental group was found to be effective in reducing the level of pressure ulcer which was evident from the reduction of pretest mean score of 15.20±1.32 to the posttest mean score of 2.73±1.67.

The table also shows that the pairwise comparison using Bonferroni adjustments in the control group. The pairwise comparison of pretest Vs. post- test 1, post- test 1 Vs. post- test 2, post- test 2 Vs. post- test 3 and pretest Vs. post- test 3 shows that there was significant difference in the level of pressure ulcer in all the stages which was found to be statistically significant at p<0.05 level. This clearly shows that Povidone Iodine Dressing administered to the critically ill patients in the control group was found to be effective in reducing the level of pressure ulcer to some extent which was evident from the reduction of pretest mean score of 14.80±1.61 to the posttest mean score of 9.73±1.62.

The table further shows the comparison of pretest, post -test 1, post- test 2 and post - test 2 level of pressure ulcer among the critically ill patients between the two groups. The findings revealed that there was no significant difference in the level of pressure ulcer among the patients between the two groups at the pretest level. But in the comparison of post- test 1, post- test 2 and post- test 3 between the groups showed a significant difference in the level of pressure ulcer which was evident from the post- test 3 mean score of 2.73±1.67 in the experimental group to the mean score of 9.73±1.62 in the control group.

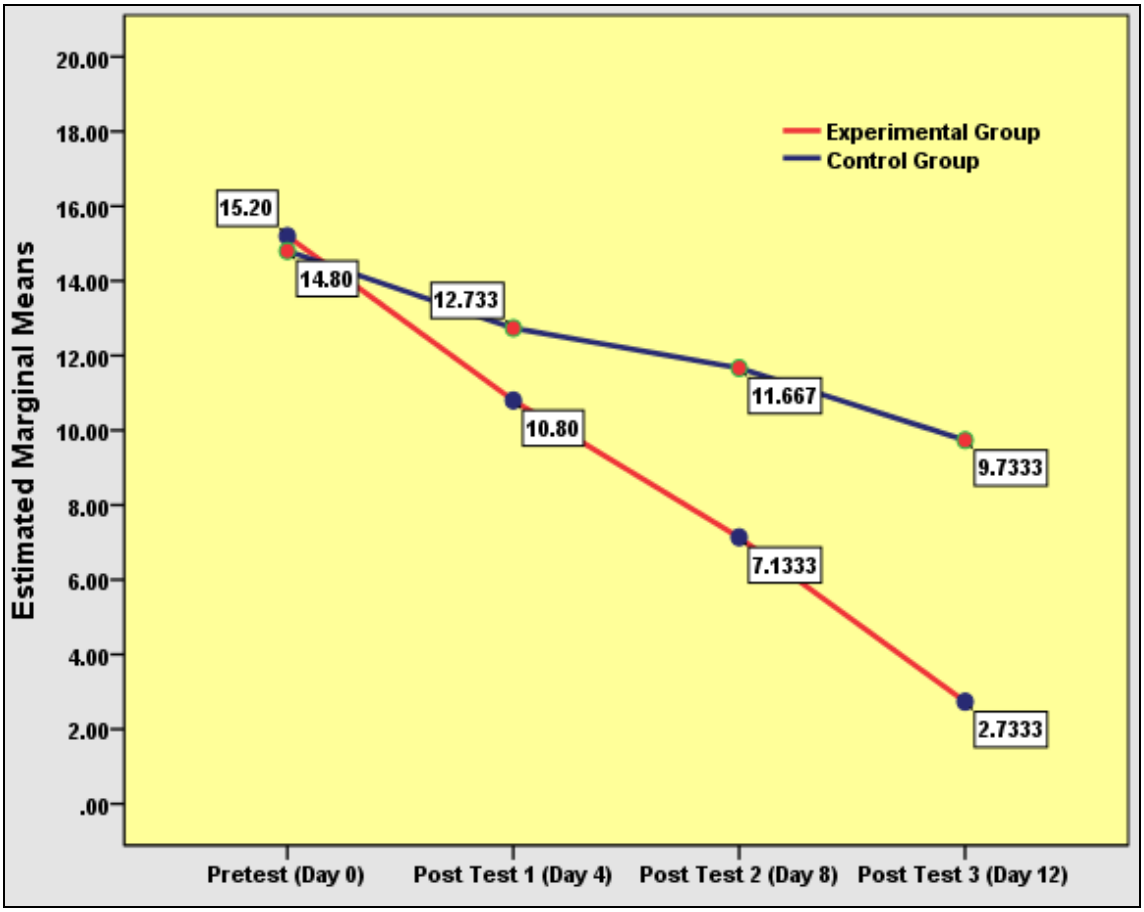

Fig 2: Trend graph showing the healing of pressure ulcer among the critically ill patients in the experimental and control group

Reference

1. Hahnel E, Genady M El. The effectiveness of two silicone dressings for sacral and heel pressure ulcer prevention compared with no dressings in high-risk intensive care unit patients. British Journal of Dermatology,2020:183(2):256-264.
2. Santamaria N, Gertz M. Clinical effectiveness of a silicone foam dressing for the prevention of heel pressure ulcers in critically ill patients. Journal of Wound Care, 2015, 24(8).
3. Park Kyung He. The Effect of a Silicone Border Foam Dressing for Prevention of Pressure Ulcers and Incontinence-Associated Dermatitis in Intensive Care Unit Patients. Journal of Wound, Ostomy and Continence Nursing,2014:41(5):424-429.
4. Peggy Kalwes, Valerie Messina. Five-layered soft silicone foam dressing to prevent pressure ulcers in the intensive care unit. American Journal of Critical Care,2016:25(6):e108-e119.
5. Rashida Umami Essa, Surya Putri Novita. Pressure Ulcer Prevention with Application of Silicone Foam Dressing in Intensive Care Unit: A Systematic Review, 2018.
6. US Medicare data show incidence of hospital-acquired pressure ulcers is 4.5%, and they are associated with longer hospital stay and higher risk of death. Moore Z. Evid Based Nurs,2013:16:118-119. [PubMed] [Google Scholar]
7. An economic analysis of repositioning for the prevention of pressure ulcers. Moore Z, Cowman S, Posnett J. J Clin Nurs,2013:22:2354-2360. [PubMed] [Google Scholar]
8. Pressure ulcers: what clinicians need to know. Wake WT. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2912087/ Perm J,2010:14:56-60. [PMC free article] [PubMed] [Google Scholar]
9. Vermeulen H, Westerbos SJ, Ubbink DT. Benefit and harm of iodine in wound care: a systematic review. Journal of Hospital Infection,2010:76(3):191-199. [PubMed]
10. https://www.mayoclinic.orgdiseases-conditions/bed-sores/symptoms-causes/syc-20355893
11. Hajhosseini B, Longaker MT, Gurtner GC. Pressure Injury. Ann. Surg,2020:271(4):671-679.
12. Niemiec SM, Louiselle AE, Liechty KW, Zgheib C. Role of microRNAs in pressure ulcer immune response, pathogenesis, and treatment. Int. J. Mol. Sci,2020:22(1):64.
13. Afzali Borojeny L, Albatineh AN, Hasanpour Dehkordi A, Ghanei Gheshlagh R. The incidence of pressure ulcers and its associations in different wards of the hospital: A systematic review and meta-analysis. Int. J. Prev. Med,2020:11:171.
14. Boyko TV, Longaker MT, Yang GP. Review of the current management of pressure ulcers. Adv. Wound Care,2018:7(2):57-67.
15. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: A systematic analysis for the Global Burden of Disease Study 2019. Lancet (London, England),2020:396(10258):1204-1222.