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CONTENTS

Volume 8, Number 1 **July-December 2020**

1. Effect of Education Intervention on Knowledge and Practice on Sskin Care Bundle Pressure Ulcer Prevention 4
Jasmine James, Remya P Abraham

2. Effect of Moist Heat Therapy on the Visibility and Palpability of Peripheral Veins Before Peripheral Venous Cannulation among Patients Undergoing Intravenous Cannulation- A Quasi Experimental Study 10
Kaur Moondeep, Kumar Anil, Dahuja Anshul

3. A Crosssectional Study on Knowledge, Attitude and Practice on Pressure Ulcer among Nurses in Jigme Dorji Wangchuk National Referral Hospital (JDWNRH)..... 15
Kencho Wangmo, Tshering Dema, Tandin Pemo, Thinley Dema, Pema Dorji, Yangzom

4. Effects of Oral Care Protocol & Practices of Nurses on Oral Assessment Scores in the Ventilated Patients 21
M Sai Ram, Jobby John, Claudia Thomas

5. A Comparative Study to Assess the Prevalence Rate of Obesity among School Children in A Selected Private and Government School, Salem 24
Nagalakshmi. E[1], K. Tamizharasi

6. A Pre-Experimental Study to Assess the Effectiveness of Structured Teaching Programmme Regarding Knowledge On Prevention of Bed Sores among Bsc Nursing 1st Year Students of Army College of Nursing, Jalandhar Cant 28
Rupinder Kaur

7. Effectiveness of Structured Teaching Programme on Knowledge of Preparation and Management of Labour among Primigravida Women in Selected Hospital, Salem, Tamilnadu, India..... 34
Santhi. M.D, Kanagadurga. M, Manjula. B

8. Adoption of Clean Milk Production practices by Dairy Farm workers : A systemic review study 41
Sartaj Ahmad , Deepak Kumar, Saurabh Sharma, Mohd Tahir Ghaji

9. Impact of Alternative Practicum Approach on Enhancing Paediatric Clinical Learning among Male Nursing Students in Oman 46
Salem Al Touby, Vanaja Muniswamy, Yusra Al Nasiri, Sheikha Al Sabari, Omar Al Omar

Effect of Education Intervention on Knowledge and Practice on Sskin Care Bundle Pressure Ulcer Prevention

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Abstract

The present study assessed the effect of educational intervention on knowledge and practice of caregivers regarding prevention of pressure ulcer among elderly patients admitted in the selected Hospital Thiruvalla. The objectives were to determine the effect of STP regarding prevention of pressure ulcer among care givers of elderly patients by comparing the pre test and post test knowledge and practice scores with selected socio demographic variables. The study was conducted using the pre experimental one group pre test and post test design . The conceptual frame work was based on Roy's adaptation model . The investigator selected 40 samples by convenient sampling . During the pre test investigator assessed the knowledge and practice on prevention of pressure ulcer . The same day itself , the investigator administered STP , After seven days ,post test was conducted using same tool . During the pre test 5% had poor knowledge , 60% of the samples had average knowledge and 35 % had good knowledge . After the STP 90 % of the samples attained good knowledge and 10 % achieved average knowledge . Paired 't' test was done and it was found that there is significant improvement in knowledge and practice (t=20.641,t=17.588} . The study concluded that STP is one of the effective teaching method to educate caregivers regarding SSKIN care bundle pressure ulcer prevention.

Keywords: *structured teaching programme, knowledge , practice , elderly patients , care givers , SSKIN Care bundle pressure ulcer prevention*

Background of the Study

Pressure ulcer also known as pressure sore, bedsore and decubitus ulcer are localized damage to the skin or underlying tissues that usually occur over a bony prominence as a result of pressure or in combination with shear or friction. The most common sites are the skin overlying the sacrum, coccyx, heels or the hips but other sites such as the elbows, knees, ankles, back of the shoulders or the back of the cranium can be affected[1]. Pressure sore is a significant problem because it occurs in every health care setting such as hospitals and home. According to the CDC (Centers for Disease control) pressure sores affect the health of nearly 1 million populations every year in the United States. Elderly people are at risk of pressure ulcer due to the reduced skin elasticity. The increasing populations of elderly adults managing chronic health conditions are at risk of pressure sore development. According to the U.S National Institute of Aging report 2008, the number of people older than 65 will be 1.4 billion in 2040[2]. Elderly people are commonly affected with conditions like stroke, fracture and complications of diabetes.

A descriptive study conducted among 104 elderly bedridden patients of Mavoor Panchayat Kozhikode district of Kerala in 2012 reported that 27% patients suffered from cerebro vascular accident, 8.7% with coronary artery disease, 8% with fracture and 6% with complication of diabetes[3]. In a cross sectional study with the objective to assess the patterns of care provision in the year 2011 conducted among 100 bedridden patients and care givers majority (82 %) of care givers was untrained. Only 57% of patients had reported satisfaction with care provided and complications like urinary tract infection and pressure ulcer were reported. Thus the study concluded that bed ridden patients have high risk and rate for developing medical complication for which formal training is needed for care givers[4]. An interventional study was conducted in various wards of

Kasthurbha hospital, Manipal to assess the effectiveness of planned teaching program on knowledge and skills in providing back care among care givers of bedridden patients. The study design was one group pre - test and posttest and 30 samples were collected by purposive sampling technique. The result of the study showed that there was a significant difference (that is t=16.49) in the pre and post - test knowledge scores of care givers of bedridden patients who had under gone planned teaching program .The study has concluded that the planned teaching program benefited for care givers with regard to gain in knowledge and skills in back care of immobilized patients.[5]

Pressure ulcers leads to the decreased quality of life for patients and high cost for health care. . The SSKIN care bundle was first implemented in Scotland in 2013[6]. According to Institute for health care improvement 2011, a bundle of care is defined as a structured way of improving processes of care and significantly improving patient's outcome. SSKIN care bundle is essential in the prevention of pressure ulcers and should be implemented for every patient at risk to achieve the elimination of avoidable pressure ulcers. The SSKIN care bundle acronym represents the five essential elements of pressure ulcer prevention.

S -Support Surface: A specialized device for pressure redistribution designed for management of tissue loads, micro- climate or other therapeutic functions (integrated bed system, mattress replacement overlay or seat cushion).

S -Skin: Early visual inspection of skin with a focus on early detection and prevention of breakdown by early intervention of pressure relieving regimes, cleansing, moisturizing and skin barrier protection.

K- Keep turning position :The positioning of the body once every 2 hour on standard foam mattresses and once every 4 hour on pressure redistribution mattress to minimize pressure and to prevent pressure ulcer.

I – Incontinence associated dermatitis : To reduce the frequency of fecal skin contamination, proper incontinence management is very essential which includes toilet training ,application of moisture barrier ointment, maintain linen clean and dry, maintain skin folds clean and dry.

N – Nutrition: Maintaining the nutritional status of the patients by proper dietary intake rich in high protein, calories and by maintaining hydration status of patients every 2 hour. Care givers play an important role in providing care to the elderly people .They are the one who will be with patient every time than physicians and nurses care giving is a difficult job and many care givers shows psychological stress and declain in physical and mental health .[7]Educational program are essential for improving the knowledge of care givers A pre experimental study was conducted on effect of educational program on prevention and management for pressure ulcer among 80 care givers of the bed ridden patient's admitted in E.L- Walfa Medical Rehabilitation Hospital, Palastine in 2015 reported that the performance of the care givers has significantly improved after the program .[8]

Statement of the problem - Effect of education intervention on knowledge and practice on SSKIN care bundle pressure ulcer prevention among care givers of elderly patients admitted in selected hospital Tiruvalla.

Objectives

1) Determine the effect of structured teaching program among care givers of elderly patients regarding SSKIN care bundle pressure ulcer prevention by comparing the pre-test and post-test knowledge and practice scores

2) Find the association between pre-test knowledge and practice scores with selected socio demographic variables.

Research Hypothesis

H_1 : There will be significant difference between pre test and post test knowledge and practice scores among caregivers of elderly patients regarding SSKIN care bundle.

Null Hypothesis

H_0 : There will not be significant difference between pre test and post test knowledge and practice scores among caregivers of elderly patients regarding SSKIN care bundle.

Materials and Methods

The conceptual framework used for the present study is based on Sr. Calista Roy's theory of adaptation. The research approach adopted is Quantitative. Pre-experimental one group pre-test post test design was used to assess the effect of education intervention on knowledge and practice on SSKIN care bundle pressure ulcer prevention among care givers of elderly patients admitted in selected hospital,Thiruvalla.

A pre experimental one group pre test post test design was chosen for this study

O1--------- X ----------O2

O1: Pre-test

X: Structured teaching programme

O2: Post test

The independent variables included in study are structured teaching programme and dependent variable is knowledge of SSKIN care bundle pressure ulcer prevention among care givers. After extensive review of literature a self-structured questionnaire and practice check list was prepared to assess the knowledge and practice of SSKIN care bundle pressure ulcer prevention among care givers. The tool was given for validity to experts. As per their guidance amendments were made. Structured teaching programme was prepared for giving teaching on SSKIN bundle pressure ulcer prevention.

The tool was framed into two parts.

Section A

Socio demographic variable which includes age, gender, religion, education, occupation, dietary pattern of both elderly patients and care givers.

Section B

Structured knowledge questionnaire of 25 questions to assess the knowledge of care givers on definition , risk factors , common sites ,stages of pressure ulcer and SSKIN care bundle pressure ulcer prevention . Each correct answer will given one mark, wrong and unanswered questions scored zero. The maximum scores of the items were 25 and minimum score. The scores are categorized as follows:

Sample's level of knowledge

Level of Knowledge	Score Range
0 – 8	Poor
9 – 17	Average
18 – 25	Good

Structured teaching programme

A Structured teaching programme regarding prevention of pressure ulcer among care givers of elderly patients was prepared by the investigator. Suitable pictorial and video graphic representations were included. Total duration was 45 minutes which includes definition, risk factors, stages and prevention (support surface, skin care, keep the turning position, incontinence management, and nutrition)

Practical scores

A two point practice sheet consists of 20 items to assess the practice of care givers about prevention of pressure ulcer. This section includes 10 negatives and 10 positives statements. The total scores of each questions was one. The total score was 20.

The study was conducted in the selected hospital of Thiruvalla. The total of 40 caregivers was comprised of the sample of the study. The convenient sampling technique was used for the selection of the sample. Study approval was taken from ethical committee of selected Hospital. Informed written consent had been taken from the study subjects. Pretest knowledge was assessed by giving structured knowledge questionnaire and practice check list. After 7 days of teaching post test was taken to assess the effectiveness of tool.

Findings of Study

The analysis of data was done in accordance with objectives of the study. Analysis was done in the following sections

Section 1: Sample characteristics

Section 2: Effect of structured teaching among care givers

Section 3: Association between pre-test knowledge, practice score with selected demographic variables

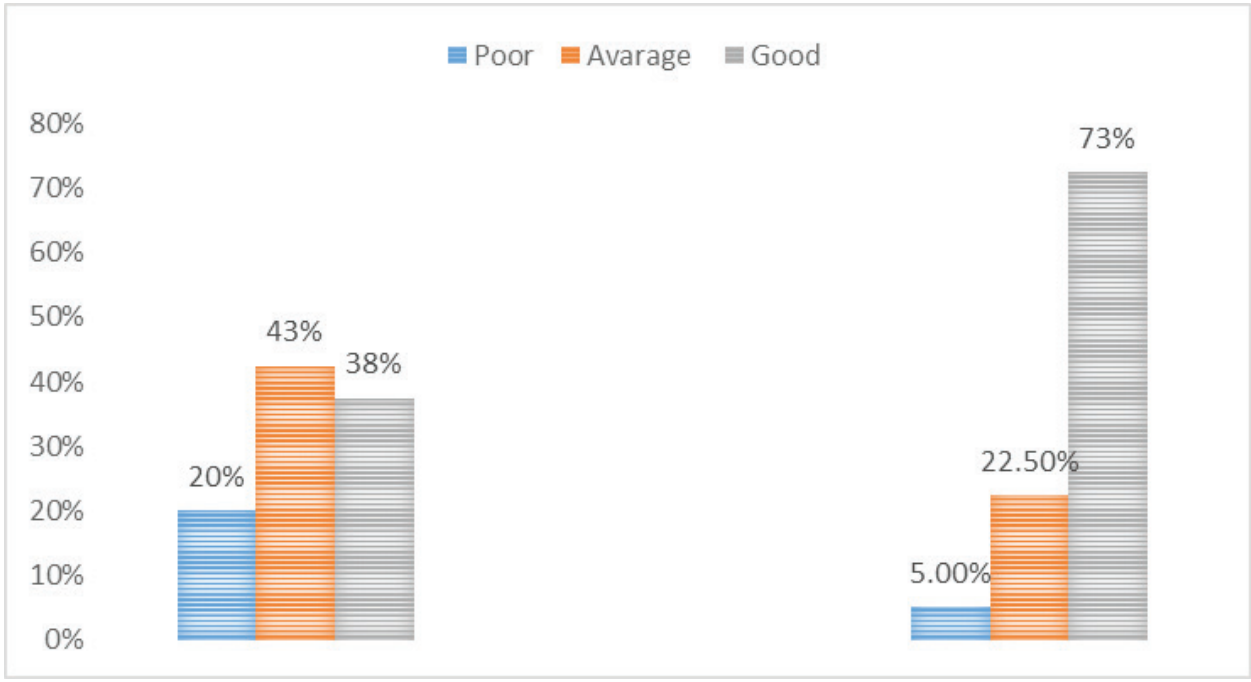


Figure 1: Comparison between pre-test and post –test knowledge score of care giver

Above data shows that in pre –test, 20% had poor knowledge , 43% had average knowledge and 38% had good knowledge regarding pressure ulcer prevention . Where as , after the structured teaching programme 73 % had good knowledge.

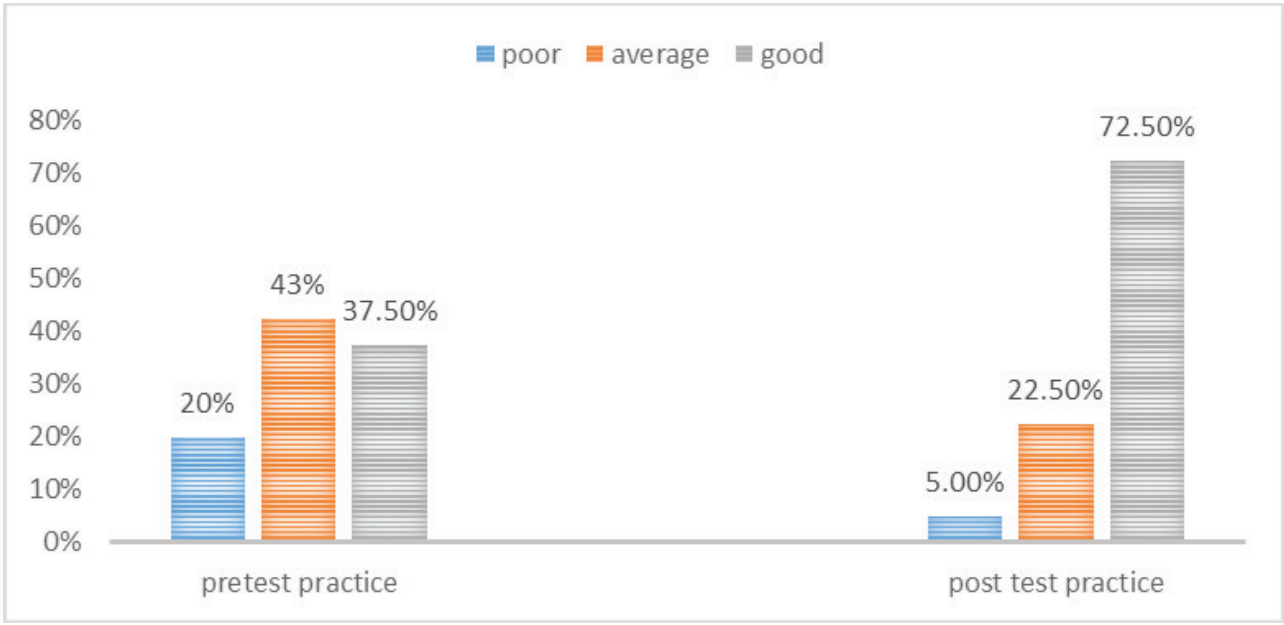


Figure 2: Comparison between Pre –test and post – test practice score of care givers

Above figure shows that in the pre-test 20% of care givers had poor practice , 43% had average practice and 37.5% had good practice , in the post – test 72.5% had good practice, 22.5 % had average practice and 5% had poor practice regarding pressure ulcer prevention.

Table 1: Effectiveness of STP on Knowledge regarding prevention of pressure sore

Knowledge score	Mean	Mean Difference	SD	t
Pre test	11.5		2.541	
		9.050		20.641
Post-test	20.63		2.121	

Above table shows that after the structured teaching programme, there was significant improvement in knowledge score of care givers regarding pressure sore prevention. The calculated t value 20.641 which significant at 0.05 level with df (59) is greater than tabulated value . Hence research hypothesis H1 regarding knowledge is accepted.

Table 2: Effectiveness of STP on practice regarding prevention of pressure ulcer among elderly patients.

Practice score	Mean	Mean Difference	SD	t
Pre test	16.33		2.433	
		9.925		17.588
Post-test	6.40		2.32	

Above table shows that the structured teaching programmes, there was significant improvement in the practice score of care givers regarding pressure sore prevention. The calculated‘t’ value 17.588 which is significant at 0.05 level with df (59) is greater than the tabulated value.Hence research hypothesis H1 regarding practice is accepted

Conclusion

The structured teaching programme helped the subjects to learn more about prevention of SSKIN care bundle pressure ulcer prevention , which was evident in the mean post test knowledge score and practice and the structured teaching programme proved to be one of the effective teaching methods of the information transmission . It was well accepted and appreciated by subjects .

Ethical Clearance – Taken from Ethical committee of selected hospital

Source of Funding –Self

Conflict of Interest - Nil

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Effect of Moist Heat Therapy on the Visibility and Palpability of Peripheral Veins Before Peripheral Venous Cannulation among Patients Undergoing Intravenous Cannulation- A Quasi Experimental Study

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Abstract

Hospitalization rate in India is increasing over years and treatment is given mostly via intravenous route. Moist heat therapy for identifying vein before cannulation will reduce number of attempts for cannulation, supply costs and will improve patient satisfaction. AIM: To assess the efficacy of moist heat therapy on visibility and palpability of peripheral veins prior to intravenous cannulation. SETTINGS: Day care unit (chemotherapy ward), Medicine and Orthopaedic wards of GGS hospital, Faridkot. MATERIAL AND METHODS: Using Quasi experimental research design and convenient sampling 60 patients undergoing I.V.cannulation whose veins were not visible and palpable were randomly assigned to experimental (n=30) and conventional group (n=30). In experimental group moist heat therapy with conventional tourniquet technique and in conventional group only tourniquet was used then post assessment was checked by Vein Assessment Scale in both the groups. RESULTS: In experimental group, the post intervention vein assessment score improved from pre intervention score 1-2 to 3-5 and in conventional group from score 1-2 to 1-4. After intervention, in experimental group majority of subjects had vein score 4(vein visible and palpable), whereas in conventional group majority scored vein score 3(vein barely visible and palpable). 7(23.3%) subjects of experimental group scored vein score 5(vein clearly visible and palpable) whereas in conventional group no subject scored 5 vein score. Also, 2(6.7%) subjects of this group had vein score 1 that remained unchanged despite of routine technique. Difference between post intervention scores of experimental and conventional group was found to be significant ($\chi 2$= 20.06 and p-value 0.00) at p-value <0.05. CONCLUSION: Moist heat with conventional tourniquet technique used in experimental group was significantly effective than only conventional technique used in conventional group.

Key Words: Moist heat, conventional tourniquet technique, Vein Assessment scale

Introduction

Fluids, medication, nutrition and blood products can be given via the intravenous (I.V) route which can be either peripheral or central. In modern practice, up to 80% of hospitalized patients get infusion therapy at some point during their admission and about 330 million peripheral catheters are sold every year in America. According to a study, hospitalization rate in India has increased from 1661 in 1995 to 3699 in 2014 (per 100,000 population). In all the age groups it has crossed over the double.[1-3]

Being a skilled procedure peripheral intravenous cannulation involves number of stages. Insertion is quite easy but needs skill in performance. It cause mild distress to the patients while cannulation but we do see patients with failed I.V insertions that may be due to skill

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incompetence in cannulation by new nurses but higher degrees of difficulty arising from vein variables like vein resistant to puncture, vein rolled and patient variables tough or dark skin and patient movement.[4]

Being an invasive procedure, I.V Cannulation make patient prone to infections. So, Centers for Disease Control and Prevention (CDC) (2011)[5] recommended I.V catheter infection prevention Guidelines. As per these guidelines, upper extremities (hands and arms) are the preferred sites for insertion. If a lower extremity is used, remove and re-site the PIVC in the upper extremities as soon as possible due to the incidence of thrombophelibitis and thrombosis. PIVC should be replaced every 72 to 96 hours to prevent infection and phlebitis in adults or even early within 48 hours when adherence to aseptic technique cannot be ensured (i.e., catheters that are inserted during a medical emergency)

Various strategies for identifying vein suitable for venous cannulation are gentle tapping of the skin overlying the vein, warm water compress for at least 2–3 minutes, topical application of 4% nitroglycerine ointment, milking of the vein from proximal to distal, venous tourniquet, manual proximal circumferential compression of the limb, sphygmomanometer cuff, making and releasing fist repeatedly[6-9],local warming facilitates the insertion of peripheral venous cannulas that reduce the time and number of attempts required for cannulation[10], betadine and alcohol swabs, Transillumination: Landry light may help visualization of the vein due to the reflection of the light off the skin changes.[7,11]

In cases where visibility and palpability of veins has decreased due to factors like repeated cannulation, on-going treatment that have damaged veins by extravasation or infiltration, being obese due to sedentary lifestyle; we need a sound practice that is more effective than the conventional techniques used in hospitals for increasing visibility and palpability of veins, thereby decreasing number of attempts for intravenous cannulation and preserving patients skin integrity and one of the good method is application of moist heat for the visualization of the veins and resultant easy insertion of intravenous cannula have been reported but there is lack of information whether traditional techniques like tourniquet technique is more efficient or poor than moist heat in visualizing and making veins palpable.

Thus, the researcher undertook this study to assess effectiveness of moist heat therapy on the visibility and palpability of peripheral veins prior to peripheral venous cannulation.

Materials and Methods

A quasi experimental research approach was used for the study. The study settings were day care unit (chemotherapy ward), medicine and orthopaedic wards of GGS hospital, Faridkot. Inclusion criteria for sample selection was patients above 18 years having vein assessment score 1, 2 checked by Vein Assessment Scale[10] and undergoing PIVC on upper limb. Exclusion criteria was patients whose veins were visible and palpable, obese, having critically ill at time of PIVC. Using convenient sampling 60 patients undergoing I.V cannulation whose veins were not easily visible and palpable were randomly assigned to experimental (n=30) and conventional group (n=30). Firstly, in both groups the peripheral vein score of selected subjects was checked by Vein Assessment Scale (VAS). Then, in experimental group moist heat therapy with conventional tourniquet (Towel soaked in 39.5-40°C warm water and applied for five minutes in vein continuously then again dipped in 39.5-40°C warm water and reapplied for another 5 minutes. Total time was 10 minutes for the application of moist heat. After then tourniquet was applied 5-10 cm proximal to selected cannulation site) and in conventional group only tourniquet was used then post assessment was checked by VAS in both the groups.

Research tool:

Vein Assessment Scale was used to check visibility and palpability of veins. This scale was developed by Rainer lenhardt.[10] The permission to use his tool in present study was taken from the author. Vein chosen for cannulization was evaluated as vein score 1-5 before and after the treatment and scores were interpreted and analyzed.

Vein Score-

1-Vein neither visible nor palpable,

2 -Vein visible but not palpable

3-Vein barely visible and palpable

4-Vein visible and palpable

5-Vein clearly visible and palpable

Content validity of the tool:

The content validity of the tool was taken from nine experts i.e. one in medical and eight in nursing profession.

Methods used for analysis of study:

Statistical analysis was performed by using SPSS version 22.0 statistical packages by using descriptive and inferential statistics. Chi square test was applied to check the homogeneity of demographic variables in both of the groups and to check whether there is significant difference between post intervention scores of experimental and conventional group. Fisher's exact test was applied where cells had expected count less than 5. p value <0.05 was considered significant.

Results

Table 1 shows in experimental group, the post intervention vein assessment score improved from pre intervention score 1-2 to the range of 3-5 and in conventional group from score 1-2 to 1-4. After intervention, in experimental group majority of subjects had vein score 4(vein visible and palpable), whereas in conventional group majority scored vein score 3(vein barely visible and palpable). Also, 7(23.3%) subjects of experimental group scored vein score 5(vein clearly visible and palpable) whereas in conventional group no subject scored 5 vein score. Also, 2(6.7%) subjects of this group had vein score 1 that remained unchanged despite of routine technique used for increasing visibility and palpability of veins. Difference between post intervention scores of experimental and conventional group was found to be significant ($\chi 2$= 20.06 and p-value 0.00) at p-value <0.05.

Table 1- Visibility and palpability of peripheral veins before and after application of moist heat therapy and conventional tourniquet technique. N=60

Characteris tics	Peripheral Vein score	Experimental Group f(%)	Conventional group f(%)	$\chi 2$/ p value	df
VeinScore Before intervention	1-Neither visible nor palpable	22(73.3)	23(76.7)	0.08/ 0.76^{NS}	1
	2-Visible but not palpable	8(26.7)	7(23.3)		
	3- Barely visible and palpable	0	0		
	4- Visible and palpable	0	0		
	5-Clearly visible and palpable	0	0		
VeinScore After intervention	1-Neither visible nor palpable	0	2(6.7)	20.06/ 0.00*	4
	2-Visible but not palpable	0	8(26.7)		
	3- Barely visible and palpable	9(30)	13(43.3)		
	4- Visible and palpable	14(46.7)	7(23.3)		
	5-Clearly visible and palpable	7(23.3)	0		
$\chi 2$value/ p value/ Df		60.00/ 0.02* df-2	37.70/ 0.00* df-3		

Non significant^{NS} , Significant* at p<0.05

Discussion

Findings of present study revealed in experimental group, moist heat with tourniquet technique was significantly effective than conventional technique used in conventional group by checking difference of post intervention scores of both the groups ($\chi 2$= 20.06 and p-value 0.00) at p value<0.05.

These findings are supported by study done by Amardeep Singh, Naveen kumar (2019)[12], moist heat used to increase visibility and palpability of veins in experimental group was significantly more effective when compared to conventional group (U=570.00 at p=<0.001)

Another study done by Ajay Singh Sarsar, VinayKumari(2019) [13]et al reported the post intervention mean rank of visibility and palpability score of peripheral vein in experimental group 38.75 was significantly greater than mean rank score of conventional group 22.25 (U=202.50, p=0.001).

K. Simarpreet, R. Ruchika etal (2018)[14]assessed the effect of moist heat on visibility and palpability of veins before peripheral intravenous cannulation and found the post intervention mean vein assessment score in experimental group was significantly higher than control group (3.9±0.60 vs. 2.28±0.7, t=12.27, p=0.001)

BiyikBayram S, Caliskan N (2016)[15]also supports present study results. According to study, the local application of heat to the cannulation site selected increased venous distension and visibility, significantly increased successful catheter placement at first attempt (p = 0·004)

Maninderdeep kaur, Sukhpal kaur et al (2011)[16] conducted a study on effect of moist heat therapy on visibility and palpability of veins of patients undergoing cancer chemotherapy. Before the intervention none patient was having veins visible and palpable. After moist heat application 40% of study subjects had veins clearly visible and easily palpable

Rainer lenhardt, Tanja Seybold etal (2002)[10] Local warming of hand and lower arm using a carbon fibre ‘‘warming mitt’’, produces reproducible amounts of heat that significantly increased vein scores >3 .

Perry S, Tepperman M (1986)[17] supported the study by stating heat applications dilates the blood vessels by increasing the blood flow to the part.

Conclusion

Moist heat with conventional tourniquet technique used in experimental group was significantly effective than only conventional technique used in conventional group for increasing visibility and palpability of veins.

Implications

Moist heat combined with tourniquet technique should be incorporated as a method of increasing the visibility and palpability of veins in case where veins are neither visible nor palpable that will eventually decrease the time of cannulation, increase patient satisfaction and decrease the skin breakdown by repeated pricks.

Conflict of Interest: None

Source of Funding: Self

Ethical Clearance: Ethical clearance was taken from institutional research and ethical committee of University College of nursing, BFUHS, Faridkot for the study to be conducted.

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A Crosssectional Study on Knowledge, Attitude and Practice on Pressure Ulcer among Nurses in Jigme Dorji Wangchuk National Referral Hospital (JDWNRH)

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Abstract

The increased incidence of pressure ulcers among inpatient patients has been reported in JDWNRH. As a result, there was an increase in the length of hospitalization, over utilization of resources and affects patient's satisfaction. There was also a lack of adequate evidence on knowledge, attitude and practice for effective prevention of pressure ulcers. The study was conducted to study the knowledge, attitude, and practice of pressure ulcers among nurses of JDWNRH. Cross-sectional was used among 389 nurses working in all inpatients department. The results found that the knowledge on pressure sore was good (64%) but the attitude (75.1%) and Practice (93.1%) to prevent pressure ulcer was low. Scientific analysis also showed that knowledge had a significant correlation with working experience (p=0.034), which reveals that the longer the duration in the service, the more the knowledge was gained. Subsequently, the more the knowledge was gained, the practice on prevention on pressure ulcer increases (p=0.036). The study found out that retention of the experienced nurses is extremely important because CME updates the knowledge, which eventually improves the patient's care whereas behaviour change remains challenging because of individual attitude and perception.

Keywords: *Incidence, pressure ulcer, hospitalization, knowledge, attitude, practice, working experience, prevention.*

Introduction

Pressure ulcers has been the frequent condition among chronic patients and impose a significant burden on patients, their family, and caregivers. It has continued to be a major public health problem associating with high morbidity and mortality both in developed and developing countries.[9] Nurses have a significant impact on the prevention of pressure ulcers with good knowledge, attitude, and practice. The increased incidence of pressure ulcers among inpatient patients has been reported in JDWNRH by pressure ulcer team. As a result, there was increase in length of hospitalization, over utilization of resources and affects patient's satisfaction. There was also lack of adequate evidence on knowledge, attitude and practice for effective prevention of pressure ulcers. The formation of pressure ulcer team was necessary as the number of patients were increasing and there were also findings that hospitalized patients have pressure sores or are at risk to develop. [1] Therefore, this study was intended firstly to assess knowledge, attitude and practice among nurses, generate baseline data on incidences and prevalence of pressure ulcer, and finally, the findings will be implemented to improve the efficiency of pressure ulcer management in JDWNRH. Pressure ulcer team members keep the record of the pressure ulcer in order to come up with the nursing prevention methods. [5] Implementation strategies should introduce ways in which key staff can be empowered to overcome barriers to change.[8] Documentation of pressure ulcer prevention and treatment improved after the educational session. [11] An initial surveillance carried out in 2012 by Nursing Department in JDWNRH, with an objective to monitor the number of patients with pressure ulcers and high risk in different wards and units, found a prevalence of 29% of patients with a pressure ulcer. Screening of pressure ulcers as routine nursing assessment was instituted in 2015 to assess

patients for the risk of developing a pressure ulcers. However, in 2016, surveillance carried out by Nursing Department on the implementation of a tool to screen risk of pressure ulcers found that only 40% of patients were screened. It was also found that only 33% of the position changing charts were implemented by the nurses. Simultaneously, during the surveillance it was reported, 69% of the patients developed pressure ulcer during their stay in JDWNRH, 23% developed ulcers at home, and 8% of the patients came with pressure ulcers from other hospitals.

Literature Review

There are many factors that influence the development of pressure sores. Key factors include lack of manpower, facilities, equipment, and staff dissatisfaction.[9] In addition to these factors, several studies have indicated that the attitude of the nursing staff plays an important role. A survey in a Swedish healthcare setting found that although the guidelines for the risk assessment is available but it has not adopted and used in practice. [7] Therefore training on its own cannot guarantee the provision of quality health care, as there is a wide discrepancy between what nurses know and what they put into practice.[2] Implementation of behavioral change strategies is require for overcoming the barriers and perpetuate the attitude on the prevention of the pressure ulcer by the staff [4] because the study done in Belgian hospitals, shows the attitudes of nurses toward pressure ulcers prevention are significantly correlated but the knowledge is not adequate. [3] Continue medical education plays a major role and it is essential to update the knowledge because the practice on the prevention of pressure ulcers eventually improves. [3] Subsequently the more the knowledge you gained, the practice on pressure ulcer increases(p-0.036).We need to come up with different strategies to improve the knowledge as it had improved the attitude by overcoming the barriers for the behaviour change towards the prevention of pressure ulcer. [12] It was found that hospitalized patients have pressure sores or are at risk to develop. [1]There are studies done in preventing from developing pressure ulcer by using different nursing methods so the pressure ulcer team members keep the record of the pressure in order to come up with the nursing method in preventing the patients from developing a pressure ulcers.[5] It was found that prerequisite adequate dissemination pressure ulcer prevention guidelines will improve the quality of pressure ulcer prevention. [6] Not only the nurses have the sole responsibility for pressure ulcer prevention, nurses do have a unique opportunity for the significant impact on this problem with the positive attitude and knowledge, but these barriers were prevented by lack of time and staff. Implementation strategies should introduce ways in which key staff can be empowered to overcome barriers to change. [8] Studies carried out in several countries have demonstrated gaps in knowledge about recommendations for pressure ulcer care and deficiencies in their implementation. [9]

Objectives of the Study

1. To assess the level of knowledge, attitude and practice among nurses?
2. To know the incidence and the prevalence of pressure ulcer in JDWNRH?
3. To find it out the association of demographic variables with Knowledge, Attitude and Practice among nurses of JDWNRH?

Methodology

Cross-sectional quantitative study to determine the knowledge, attitudes and practices of nurses who work on the inpatient units of JDWNRH, Thimphu Bhutan. The sample size of the study was calculated as follows. Study population-to find the knowledge among nurses who are providing nursing care to inpatients in the different wards and units. Margin of Error (Confidence Interval)—the error to allow in the study. Common error to allow (+/- 5%). Confidence level-keeping the confidence interval to 95% confident. Standard deviation (SD)-SD variance of 0.5 is used for the study to ensure large sample collection. Confidence level corresponds to a Z-score, the constant value needed for sample calculation and the z-scores for the confidence levels:

- 95% – Z Score = 1.96

Plugging in Z-score, Standard of Deviation, and confidence interval into this equation:

Necessary Sample Size = **$(Z\text{-score})^2 * StdDev*(1-StdDev) / (margin\ of\ error)^2$**

Choosing 95% confidence level, 0.5 standard deviation, and a margin of error (confidence interval) of +/- 5%.

$((1.96)^2$ x .5(.5)) / $(.05)^2$
(3.8416 x .25) / .0025
.9604 /.0025
384.16
385 respondents are needed

Sampling procedure (9th October 2017-30thApril 2018)

A pretested (Randomly conducted among 20 nurses) using structured self-administered questionnaire on Knowledge, Attitude, and Practice (KAP) [9] while modified version of the existing data entry form for pressure ulcer was used to collect data for incidence and prevalence. Target population for KAP was all the nurses working with inpatients in JDWNRH.The enumerators for Knowledge, Attitude and Practice data collection in the high-risk areas were the pressure ulcer prevention and management nurse member. These enumerators are briefed about the questionnaires and the importance of data quality. The nurses were not pressurized however requested to answer honestly, so that we can come up with the activities which will eventually benefit the nurses and improve the quality services to the patients.

Study population: All the nurses (398) presented during the data collection were included. Incidence and prevalence of pressure ulcer data collection was done from high risk wards and units (Medical ward, Medical Extension, Cabin, Ortho, Surgical, Oncology, Adult Intensive Care Unit and Emergency Department with the addition of Paediatric Intensive Care Unit).

Inclusion criteria: The Regular and contract nurses working with inpatients in JDWNRH who are directly involved in patient care.

Exclusion criteria: Directly employed Scheme nurses as they are temporary posted and nurses working in outpatient department.

Data analysis: The data were recorded in the excel sheet and exported to SPSS 17 for analysis and report generation. Regression analysis were used to evaluate the correlation between the demographic variables and Knowledge, Attitude and Practice. The proportion was used to determine the incidence and prevalence of pressure ulcers.

Results

Table 1: Social-demographic characteristics of the study population

S. No	Variables	Options	Frequency	Percentage
1	Gender	Male	145	37.30%
		Female	244	62.70%
2	Age	20-29	265	68.3%
		30-39	92	23.7%
		40-49	29	7.5%
		≥50	2	0.5%
3	Education	Masters	5	1.3%
		Bachelor's in nursing	98	25.2%
		Diploma in nursing	228	58.6%
		Certificate	58	14.9%
4	Work Experiences	< 1- 4 years	241	62%
		5- 9 years	84	21.6%
		≥ 10 years	64	16.5%

Social-demographic characteristics of the study population

389 participated in the study, yielding a response rate of 97.25%. The mean age of the respondents was 29.18 years (SD 5.766). More than half of the respondents (62.7%) were female, 58.6% of the nurses had a diploma certificate. Majority of them (62%) had working experience of less than 5 years.

Table 2: Knowledge regarding Pressure Ulcer

		Correct		Incorrect	
		n	%	n	%
1	High loading pressure is the contributing factor for pressure ulcer formation.	339	87.1%	47	12.1%
2	Immobility is the most important factor for pressure ulcer Formation.	383	98.5%	6	1.5%
3	Bowel and bladder incontinence are the favorable environment for bacterial growth in the form of maceration.	339	87.1%	50	12.9%
4	Low albumin is the critical determinant for pressure ulcer formation.	269	69.2%	115	29.6%
5	Head to toe skin assessment is a procedure for a patient who is at high risk for pressure ulcer development.	331	85.1%	57	14.7%
6	Norton scale is the risk assessment scale for pressure ulcer.	354	91 %	32	8.2%
7	Norton scale >14 is high risk for pressure ulcer.	140	36%	247	63.5%
8	Partial skin loss with blister and abrasion is correct answer for the sign of stage two pressure ulcers.	312	80.2%	76	19.5%
9	Pale, red, or bluish- grey discoloration on the skin is the sign for pressure ulcer development.	368	94.6%	21	5.4%
10	Topical cream is appropriate method for skin care.	246	63.2%	142	36,5%
11	Turn position every four hours is significant activity for protecting skin damage.	263	67.6%	125	32.1%
12	Lift the patient without dragging is a correct practice for maintaining skin integrity	354	91%	36	9%
13	Use pillow under the patient's leg to prevent heel ulcer.	359	92.3%	28	7.2%
14	Vitamin C and E is important to maintain healthy skin.	367	94.3%	22	5.7%
15	Elevate the head of bed < 30^0 is the activity for reducing shearing force.	269	69.2%	118	30.3%
	Overall Number (n) and Rate (%)	313	80%	75	18%

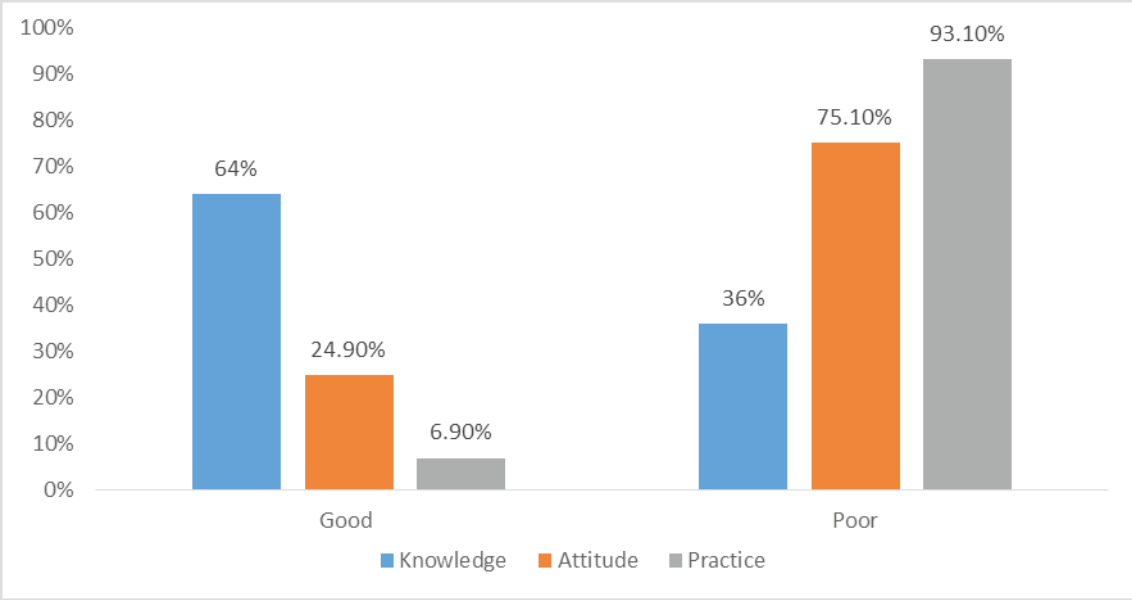


Fig 1: Knowledge, Attitude, Practice on Pressure Ulcer Prevention

Knowledge, Attitude, Practice on Pressure Ulcer Prevention

Based on the literature [13], Participants were asked questions to assess their knowledge on pressure ulcer prevention, and they were categorized into two groups based on their score. Knowledge: good (64%) poor (36%), in attitude: good 97 (24.9%) poor 292 (75.1%), and in practice: good 27(6.9%) poor 362 (93.1%)

Knowledge and Working experience

Analysis scientifically shows that knowledge has significant correlation with working experience (P-0.034). The longer the duration in the service, more the knowledge is gained. However, from the demographic profile, majority of the staff are below 5 years of working experience (62%)

Knowledge and Practice

There is significant correlation between the knowledge and practice (P-0.036), which indicates the more knowledge you gained, subsequently practice on prevention of pressure ulcer increases.

Attitude and Practice

There is no significant correlation between the attitude with practice (p-0.56) and attitude with education (P-0.654). Attitude on knowledge and practice depends on individually as there is no correlation statistically.

Discussion

The incident of the pressure ulcer among the patients remain challenging for every nurse. Despite every effort by the pressure ulcer team members monitoring, still increased incidence of pressure ulcer among inpatient patients has been reported in JDWNRH. The result even showed the significant correlation between the working experience with knowledge. There are precipitating factors as shown in some studies [2,7,9,] affecting the practice for the pressure ulcer because the result shows poor practice (>90%) for preventing the pressure ulcer. Even 75% of nurse's attitude toward pressure management is low which could be the lack of implementation strategies. Documentation of pressure ulcer prevention and treatment improved after the educational session. [11] Analysis scientifically shows that knowledge has a significant correlation with working experience (P- 0.034). The longer the duration in the service, more the knowledge is gained. However, from the demographic profile, majority of the staff are below 5 years of working experience (62%). There is significant correlation between the knowledge and practice (P-0.036), which indicates the more knowledge you gained, subsequently practice on prevention of pressure ulcer

increases. There is no significant correlation between the attitude with practice (p-0.56) and attitude with education (P-0.654). Attitude on knowledge and practice depends on individually as there is no correlation statistically.

Conclusion

It is recommended that the retention of experienced nurses is extremely important because more knowledge was gained with the duration in the service. Frequent CME needs to conduct since it helps in renewing the knowledge to date and improves the patient's care. Behavior change is challenging but strategies are required to overcome the barriers and perpetuate the attitude on the prevention of the pressure ulcer.

Acknowledgment: We would like to extend our gratitude to all the nurses who agreed to participate for the study amid hectic schedule and all the pressure ulcer team members.

Limitations: The study was done in JDWNRH, so the result may not represent the problem with the whole nurses of Bhutan because the factors affecting the workload is different in districts than in JDWNRH.

Conflict of Interest: None

Source of Funding: Nursing administration, JDWNRH.

Ethical Consideration: Prior to data collection, approval for the study (Ref. No. REBH/Approval/2017/067) was obtained from Research Ethics Board of Health (REBH).

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Effects of Oral Care Protocol & Practices of Nurses on Oral Assessment Scores in the Ventilated Patients

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Abstract

Purpose: The project aimed to examine the effects of an existing oral care protocol & practices of nurses on oral assessment scores in ventilated patients.

Materials and Methods: Clinical data were collected during intensive care admission after 3 days of implementing an existing oral care protocol in Medical ICU. The Beck Oral Assessment Scale (BOAS) was used to assess the oral cavity and to check the effectiveness of oral care provided by the nurses. Developed the oral care education program consisted of instructions and a clear procedure outlining oral care. Data was input into and analyzed using Microsoft Excel.

Results: The existing oral care protocol was found to be effective through the scores on BOAS. The findings revealed areas needs improvement in practices of nurses. The oral care education programme was planned and presented to all nurses working in Medical ICU. Scores on the BOAS differed significantly before and after educational intervention. Resources needed to carry out the protocol were identified and those were provided.

Conclusion: Though the protocol of oral care is in place, there is always room for improvement. Oral assessment scores improved after reinforcement training as oral care practices were improved.

Keywords: *Oral Care, Ventilated Patients, Medical ICU & BOAS.*

Introduction

Oral care or mouth care is one of the most basic nursing activities. Keeping the mouth and teeth clean will protect patient's oral health and allow quicker recovery by preventing infections. The nurse plays an important role in providing effective oral care and promoting oral hygiene of an unconscious patient / intensive care patient[1].

Stratified epithelium cells beyond from lips to oropharynx of intensive care patients can be damaged easily because of inadequate perfusion, insufficient fluid / food intake, and toxicity of medicine. Therefore, providing and maintenance of oral care is vital for intensive care patients in order to avoid the emerging changes in the oral mucosa and oral problems which caused by insufficient oral care and ventilator-associated pneumonia (VAP)[2,3].

The purpose of this project was to objectively investigate the adherence of staff to existing oral care protocol and to develop guidance and educate the nurses with the aims of improving oral care practices in the Medical ICU of QRG Health city.

Methods and Materials

This study was conducted between November 2019 and January 2020. A convenience sample and a pre-post study design with an educational intervention were used. Data was collected from Medical ICU during intensive care admission after 3 days of implementing an existing oral care protocol of the hospital.

The oral care policy of the hospital recommends comprehensive oral care as a part of VAP prevention protocol. This oral care consists daily oral care with 0.12% chlorhexidine[4]. The protocol includes brushing teeth, gums, and tongue with a soft pediatric toothbrush and moistening oral mucosa and lips every 4 hours.

The Beck Oral Assessment Scale was used to assess the oral cavity and to check the effectiveness of oral care provided by the nurses. *Beck Oral Assessment Scale* was created by Becks in 1979, patients are evaluated in terms of lip, gingival, *oral* mucosa, tongue, teeth and saliva. This *assessment* system grades from one to four points. *Beck's oral assessment tool* is given in Table 1 in details. It is suggested that nurses in intensive care units use this guide for complete assessment of oral mucosa as a diagnosis tool[5,6].

Table-1: Beck Oral Assessment Score (BOAS), Modified[6]

Area	Score			
	1	2	3	4
Lips	**Smooth, pink, moist, and intact**	**Slightly dry, red**	**Dry, swollen isolated blisters**	**Oedematous, inflamed blisters**
Gingiva and oral mucosa	Smooth, pink, moist, and intact	Pale, dry, isolated lesions	Swollen red	Very dry and oedematous, inflamed
Tongue	Smooth, pink, moist, and intact	Dry, prominent papillae	Dry, swollen, tip and papillae are red with lesions	Very dry, oedematous, engorged coating
Teeth	Clean no debris	Minimal debris	Moderate debris	Covered with debris
Saliva	Thin, watery plentiful	Increase in amount	Scanty and somewhat thicker	Thick and ropy, viscid or mucid
Score Interpretation	5	6–10	11–15	16–20
	No dysfunction	Mild dysfunction	Moderate dysfunction	Severe dysfunction
Note: Provide moisture more often than oral care	Minimum care every 12 h	Minimum care every 8–12	Minimum care every 8 h	Minimum care every 4 h

In the month of December 2019, a 1-hour oral care education programme was created. The presentation included the importance of oral care, oral assessment, materials / solutions used in oral care, what should be the frequency of oral care practice and evidence based approach to oral care. Two weeks intensive classes were taken to nurses who are working in medical ICU followed by discussion about any concerns on the procedure. The level of knowledge was assessed by semi structured questionnaire and assessed their practical skill on oral care through procedure checklist.

Results

A total of 25 ventilated patients were chosen who were admitted in the medical ICU. All patients were assessed by using BOAS tool. According to BOAS scores there were 15 (60%) patients had no dysfunction and 10 (40%) patients had mild dysfunction. It was revealed that, existing oral care protocol was effective and compliance of staff adherence to protocol was satisfactory. Also noted the need for reinforcement training to strengthen the practices of nurses to meet 100% compliance.

The oral care education programme was presented to all nurses of medical ICU. The findings revealed that training was effective in enhancing the knowledge of nurses as shown by the scores obtained in the post-test & improved practical skills. Resources needed to carry out the protocol were identified and those were provided.

After intervention, in the month of January 2020 again a total of 25 ventilated patients were chosen and assessed by using BOAS tool. As per BOAS scores there were 21 (84%) patients had no dysfunction and 4 (16%) patients had mild dysfunction which shows improvement in oral care practices of nurses.

Conclusion

The modified BOAS provides a realistic and clinically useful assessment of oral integrity in critically ill patients. The overall results show that, patients who had routine oral care as per existing protocol had significantly lower overall scores on the Beck Oral Assessment Scale and it was revealed that existing oral care protocol of the hospital was effective and can be continued.

Continuing nursing education / reinforcement trainings are important in determining issues associated with unsafe oral care practices & unproductiveness. The findings demonstrated that, oral care education programme is the best initiative to keep nurses' knowledge and skills up to date in the bedside practice.

Conflict of Interest: Nil

Source of Funding: The project was supported by the Hospital.

Ethical Consideration: Formally obtained from the Hospital.

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A Comparative Study to Assess the Prevalence Rate of Obesity among School Children in A Selected Private and Government School, Salem

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Abstract

A comparative study was done to assess the prevalence rate of obesity among school children in a selected government and private school, Salem. A comparative research design was adopted among 200 school children (100 Boys,100Girls) in the age group of 10 to 12 years who were selected by non probability convenient sampling technique. A structured interview used for collecting demographic variable and measured anthropometric measurements like Height, Weight & BMI calculation. Child categorized based on BMI scoring total score was graded as According to CDC . The findings revealed that in government school majority of children (48%) have normal BMI , 12% are obese, 30% are overweight and 10% are under weight. In private school majority of children (58%) have normal BMI , 18% are obese, 4% are overweight & 20% are under weight. Obesity was higher among children from private school (18%) than from Government school (12%).

***Key Words**: Children, Obesity, Prevalence rate, BMI-Body Mass Index, CDC -Centers for Disease Control.*

Introduction

Physical activity was the part of daily lives of people in the past, where most of them were physically active and enjoyed health. Today , the evidence of children affluent families are overweight as compared to the past possibly because of decreased physical activities ,secondary lifestyle altering eating patterns among decreased fat content of the diet.

Childhood obesity is one of the most serious public health challenge of the 21st century, the most problem in global and is steadily affecting many low and middle income countries particularly in urban setting. The prevalence has increased at an alarming rate.[1]

Obesity in children continues to increase unchallenged, it will undoubtedly lead to future generations of obese adults. Unless something is done childhood obesity could increase to 50% by the year 2020. To improve accessibility of nutrition education & to create awareness regarding obesity ,November 26th is celebrated as "**Anti Obesity Day**". [2]

Need for Study:

A growing number of urban and rural school age children (6 to 12 years) victims to secondary life style ,lack of exercise, junk foods and gradual slowing down of metabolic rate. National family health survey reported that the obesity prevalence rates ranging from 3.5-4.1 %. Today over 20% men and 30% of women in Indian have generalized obesity and really 30% of children have a abdominal obesity.[3]

According to the 2014 youth risk behavior surveillance system (YRBSS) 13.9 percent of high school students were obese and an additional 16.0 percent were overweight.

The prevalence of obesity was 8.9% among 2 to 5 years old compared with 17.5% of 6 to 11 years old and 20.5% of 12 to 19 years old. Children obesity is also more common among certain population.[4]

Early prevention of obesity through exercise, and diet is good rather than correcting it , once it has occurred. Altering the eating, playing habits and life

style of children very early in their life may be vital therefore even school programs should focus on play activities, health education at school on diet and right choice of food. This can give a supportive hand to get rid of obesity in childhood itself as childhood of youth are period of life when education is more likely to have best result.

Statement of problem:

A Comparative study to Assess the Prevalence rate of Obesity among School Children in a selected Private and Government School, Salem.

Objective:

ü To assess prevalence rate of obesity among school children.

ü To compare prevalence of obesity among children in government and private school.

ü To associate the prevalence rate of obesity among school children with selected demographic variable

Methodology

Comparative research design was used for this study. The study was conducted in Government higher secondary school and Vidya Mandir higher secondary school (CBSC), school, Kondalampatti, urban community, Salem. The populations were school children studying VI, VII, VIII at Government school & Private school.The sampling technique used for their study was non-probability convenient sampling technique.The sample of the study was the school children between the age group between 10-12 years who fulfilled the inclusion criteria.Sample size consists of 200 school children (100 boys, 100 girls) The number of sample from Government higher secondary school was 50Boys& 50 Girls.The number of sample from private higher secondary school was 50Boys & 50 Girls . . A structured interview schedule was used for collecting demographic variable and anthropometric measurements like Height, Weight were measured. Children were categorized based on BMI scoring. Total score was graded as Below 16, Normal – 16.1 to 23, Overweight – 23.1 to 27, Obesity -27.1 to 30.

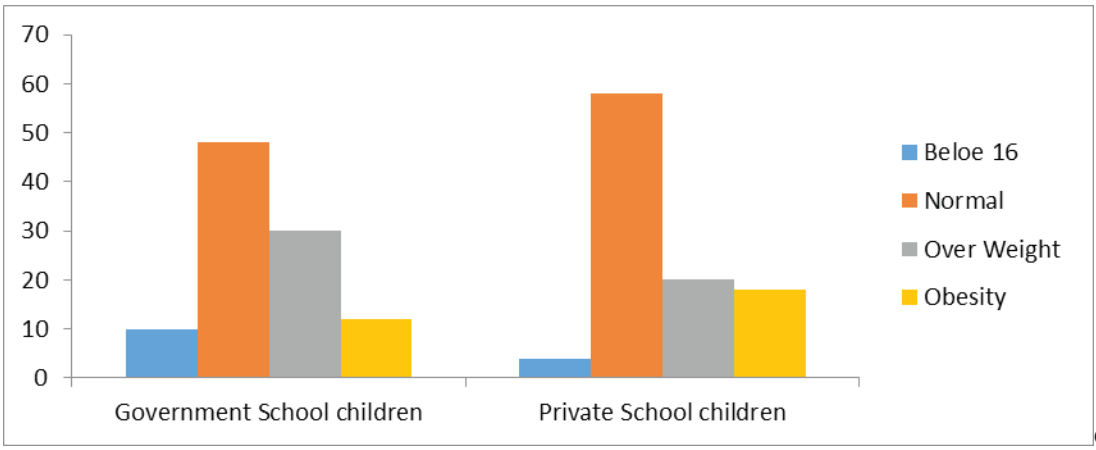
Data Analysis And Interpretation:

Distribution of children according to the demographic variables of children..

Table1 n=200

Demographic variables of parents	Government school n=100		Private school n=100	
	Frequency	Percentage	Frequency	Percentage
1) Age of Children				
a) 10years	26	26	21	21
b) 11years	15	15	53	53
c) 12years	59	59	26	26
2) Sex of Children	50	50	50	50
a) Male	50	50	50	50
b) Female	47	47	64	64
3) Class studying	53	53	36	36
a) VI Standard	0	0	0	0
b) VII Standard	100	100	100	100
4) Dietary Pattern				
a) Vegetarian				
b) Non Vegetarian				

Figure 1 n=200



Comparison of Percentage wise distribution of children in Government and private school according to the level of BMI.

The above figure shows that higher percentage of overweight and obese children were in private school children compared to Government school.

Distribution of Obese children:

Table 2

n=30

Demographic variables of parents		Government School	Private School
	1) Educational status of father		
d)	No formal education		
e)	School education		
f)	Graduate		
	2) Educational status of mother	1	4
c)	No formal education	11	9
d)	School education	0	5
e)	Graduate	4	3
	3) Occupation of father	7	8
		01	7
c)	Unemployed	0	0
d)	Employed	1	4
e)	Farmer	1	3
f)	Self- employed	9	11
g)	Daily wages	1	0
	4) Occupation of mother	8	15
c)	Unemployed	0	1
d)	Employed	3	0
e)	Farmer	0	2
f)	Self- employed	1	0
g)	Daily wages	0	0
	5) Income per month	1	3
a)	Below Rs 5000	8	10
b)	Rs 5000-8000	3	5
c)	Rs 8001-10000	0	0
d)	Above Rs 10000	12	18
	6) Dietary pattern		
	a)Vegetarian		
	b)Non vegetarian		

Association between the level of obesity based in BMI of children with their selected demographic variables.

Table 3 n=200

S.No	Demographic variable	df	X2 value	Table value
	Family education			
	a) Father	2	5.91	5.99
1	b) Mother	2	8.4*	5.99
2	Family occupation	4	2.139	9.49
3	a) Father	4	4.99	9.49
4	b) Mother	3	3.76	7.82
	Family income	1	9.33*	3.84
	Dietary pattern			

The table shows that there is a significant association between the prevalence rate of obesity with mother education and dietary pattern.

· There is no significant association between the prevalence rate of obesity and other variables such as father education & occupation and family income.

Conclusion

The findings revealed that in government school majority of children have normal BMI (48%), and (12%) are obese and (30%) are overweight and (10%) are below 16. In private school majority of children have normal BMI (58%) and (18%) are obese and (4%) are overweight and (20%) are below 16. The comparison of percentage wise distribution of children in private school children was higher percentage of overweight and obese children compared to government school.

Ethical Clearance: Taken from Institutional Ethical Committee.

Source Funding: Self

Conflict Of Interest: Nil.

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A Pre-Experimental Study to Assess the Effectiveness of Structured Teaching Programmme Regarding Knowledge on Prevention of Bed Sores among Bsc Nursing 1st Year Students of Army College of Nursing, Jalandhar Cant

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Abstract

Decubitus ulcer commonly known as Bed sore or Pressure ulcer is one of the commonest cause of skin and tissue disruptions [1]. So here arises a need to create awareness regarding prevention of bed sores through education of student nurses to reduce the burden of bed sores. The study was undertaken to assess the knowledge regarding prevention of bed sores among B.Sc Nursing 1st year students and develop and implement a structured teaching programme in Army College of Nursing, Jalandhar cantt.

The objectives of the study were to assess the pre – test knowledge scores, develop and implement structured teaching programme, to assess the post-test knowledge scores and to compare the pre – test and post- test knowledge scores. The pre experimental study was conducted on 40 selected subjects of B.Sc Nursing 1st year students, Army College of Nursing, Jalandhar cantt, Punjab.

Data was collected by self structured questionnaire. The results indicated that the overall pre – test mean was 18.32 with the Standard deviation of 2.09 whereas the overall post –test mean knowledge score was 21.42 with the Standard deviation of 1.62 with the significant mean diffence of 3.1. Effectiveness of structured teaching programme was determined by Paired- t test. Value of t was found to be 5.58 which was greater than value of $t_{0.05}$ at 39 degree of freedom that is 2.023.

***Key Words**: Bed Sore , Prevention, Knowledge, Structured Teaching Programme.*

Introduction

Decubitus ulcer commonly known as Bed sore or Pressure ulcer is one of the commonest cause of skin and tissue disruptions .These are localized injuries to the skin or underlying tissue that usually occur over a bony prominence as a result of pressure, or pressure in combination with shear or friction. The most common sites are the skin, overlying the sacrum, coccyx, heals or the hips, but other sites such as the elbows, knees, ankles or the back of the cranium can be affected[2].

Bed sores occur due to pressure applied to soft tissue resulting in completely or partially obstructed blood flow to the soft tissue. Shear is also a cause, as it can pull on blood vessel that feed the skin. Bed sores most commonly occur in individuals who are not moving about, such as those being bed ridden or confined to a wheel chair[3].

It is widely believed that other factors can influence the tolerance of skin for pressure and shear, thereby increasing the risk of bedsore development. These factors are protein calorie malnutrition, microclimate (skin wetness caused by sweating or incontinence), diseases that reduce blood flow to the skin, such as arteriosclerosis or diseases that reduce the sensation in the skin, such as paralysis or neuropathy.

The healing of bed sore may be slowed by the age of person, medical conditions (such as arteriosclerosis, diabetes or infection), smoking or medications such as anti-inflammatory drugs[4].

Although often prevented and treatable if detected early, bedsore can be very difficult to prevent in critically ill people, frail elders, wheel chair users (especially where spinal injury is involved) and terminally ill individuals.

Need of the study- Bed sore are common conditions among hospitalized patients in acute and chronic care facilities. Bed sore occur almost exclusively in people with limited mobility. So it is a challenge to prevent the occurrence of bed sore[5]. But if nursing students have sufficient knowledge in preventing bed sore they would certainly become competent nurses in furture contributing to decrease the incidence of bed sores.

Aim-To assess the knowledge regarding prevention of bedsores among B.sc nursing 1st year students, to plan and implement a structured teaching programme in order to improve their knowledge

Objectives

1. To conduct pre-test to assess the level of knowledge regarding prevention of bedsores.

To prepare and implement structured teaching programme on various measures and steps for prevention of bed sores.

2. To determine effectiveness of structured teaching programme regarding measures for preventing bed sores by post-test.

3. To compare pre-test and post-test knowledge scores of B.Sc. nursing 1st year students regarding prevention of bed sores.

Hypotheses-

H –There was not be significant difference between the pre-test and post-test knowledge scores of subjects (nursing students) regarding prevention of bed sores.

H There was be significant difference between the pre-test and post-test knowledge scores of subjects (nursing students) regarding prevention of bed sores.

Delimitations-

The study was be delimited only to 40 B.Sc. nursing 1st year students of Army College of Nursing, Jalandhar Cantt, Punjab.

Research approach-

Quantitative and evaluative research approach.

Research design-

The research design selected for the study was be pre-experimental research design. this was be adopted to assess the knowledge regarding prevention of bed sores among bsc nursing 1st year students.

Research setting-

the study was be conducted in army college of nursing, jalandhar cantt.

Target population-the target population selected is 40 students of bsc nursing 1st year.

Sample and sampling technique a total of 50 students was be taken as the sample of the study and convenient sampling technique was be employed to collect the data.

Inclusion and Exclusion criteria

Inclusion criteria:

- Students of BSc Nursing 1st year
- Wasing to participate
- Available at the time of data collection and selected as a part of convenience sampling technique.

Exclusion criteria:

- Students of BSc Nursing 2nd, 3rd, and 4th year are not included in the study.
- Those who are not wasing to participate.
- Those who was not be present at the time of pre-test.

Description of the tool-

Self -structured questionnaire is designed to assess the knowledge regarding prevention of bed sores. Tool consists of 30 questions to assess the knowledge regarding prevention of bed sores, causes, sign and symptoms, preventive measures and dietary factors in preventing bed sores.The tool is divided in two sections:

Section A:

Socio- demographic data includes the personal characteristics of the variables of study e.g. – age, education, smyce of information and previous knowledge of the students.

Section B:

This section comprises self- structured knowledge questionnaire:

Introduction and definition of bed sores.

Causes of bed sores.

Sign and symptoms of bed sores.

Preventive measures and dietary factors in bed sores.

Data collection procedure-

In this study, questioning method was be selected for data collection. Permission was taken from Principal, Army College of Nursing, Jalandhar Cantt. Prior consent was taken from the subjects under study. Self-introduction was given to the subjects. Group was informed about the purpose of study.

Plan of data analysis-

Data was be analyzed by descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (paired t- test).

Section 1- findings related to frequency and percentage distribution of socio demographic variables.

S.No	Demographic variable	Frequency	Percentage
1	Age of the subjects (in years)- a) 17-18 b) 18-19 c) 19-20 d) >20	 36 03 01 0	 90.00% 07.50% 02.50% 00.00%
2	Exposure to knowledge regarding pressure sore prevention- a)Educational workshop and seminars b) Electronic media c) Academic knowledge d) No experience	 02 03 35 0	 05.00% 07.50% 87.50% 00.00%
3	Previous experience as a clinical care giver to the patients with pressure sores in SDICU through- a) 1-2 week b) 2-3 weeks c) 3-4weeks d) > 4 weeks	 08 09 21 02	 20.00% 22.50% 52.50% 05.00%

SECTION 2- FINDINGS RELATED TO LEVEL OF KNOWLEDGE OF SUBJECTS RELATED TO THEIR PRE-TEST

LEVEL OF KNOWLEDGE	KNOWLEDGE SCORE	FREQUENCY	PERCENTAGE
EXCELLENT	26-30	0	0%
GOOD	21-25	5	12.5%
AVERAGE	16-20	27	67.5%
BELOW AVERAGE	</=15	8	20.0%

SECTION 3-FINDINGS RELATED TO LEVEL OF KNOWLEDGE OF SUBJECTS RELATED TO THEIR POST-TEST

LEVEL OF KNOWLEDGE	KNOWLEDGE SCORE	FREQUENCY	PERCENTAGE
EXCELLENT	26-30	02	5.00%
GOOD	21-25	17	42.5%
AVERAGE	16-20	16	40.0%
BELOW AVERAGE	</=15	05	12.5%

SECTION 4- FINDINGS RELATED TO COMPARISON OF MEAN AND STANDARD DEVIATION OF PRETEST AND POST-TEST SCORES

	PRE-TEST	POST-TEST
MEAN (x)	18.32	21.42
STANDARD DEVIATION (S.D)	2.09	1.62
Paired t-Test	5.58	

PAIRED t – TEST-

In the present study PAIRED t- TEST was used to compare two set of values of same sample taken in two different time periods (pre-test and post-test).

In present study the value of t is 5.58 which are more than that of $t_{0.05}$ at 39 degree of freedom that indicates the rejection of null hypothesis (H_0) and acceptance of research hypothesis (H_1) and thus it can be concluded that there was significant difference in the level of knowledge after the implementation of structured teaching programme.

MAJOR FINDINGS OF THE STUDY-

· Maximum number of subjects (90%) belonged to 17-18 years.

· Maximum number of subjects (87.5%) was having previous knowledge regarding pressure sores and prevention through Academic experience.

· Maximum number of subjects (52.5%) was having previous experience as a clinical care giver to the patients with pressure sores in SDICU for 3-4 weeks.

· Meanpre-test knowledge score 18.32 was increased to21.42 in mean post-test knowledge scores with a mean difference of 3.10.

· Percentage increased in the subjects who scored excellent was increased from 0% to5 % after the implementation of structured teaching programme.

· Percentage of the subjects who scored below average (</=15) was reduced to 12.5% (in post-test)from 20% (in pre-test) after the implementation of structured teaching programme.

· Value of t was found to be 5.58 which was greater than value of $t_{0.05}$ at 39 degree of freedom that is 2.023, which implies that the structured teaching programme was effective in improving the knowledge of subjects regarding prevention of pressure sores

Discussion

The finding of my study is supported by Ivan Mwebaza, et. (2012), the aim of the study was to assess the nurses knowledge toward bed sore prevention in St. Joseph Leuis hospital, California using pre-piloted questionnaire. The study revealed that 70.4 % had average level of knowledge and 29.6% had good knowledge regarding bed sores[6].

A study conducted by Gunniberg. et ,al (2011),the aim of the study was to assess the knowledge regarding prevention of bed sores in different nursing homes using questionnaire was 19.87 and after intervention the score was raised to 30.23.[7]

The study is supported by Meesterberends et al.(2013), the study was aimed to assess the effectiveness of structured teaching programme on knowledge, attitude and practice in Dutch nursing homes , Netherland results revealed that mean post-test knowledge score was 76.0 which were significantly higher than the mean pre-test score 45.23 with enhancement of 30.77. [8]

The statistical paired t-test for overall knowledge was found to be 0.0076 which were found statistically significant at 0.05 levels**.**

Limitations- Study was limited to Army College of Nursing, Jlandhar cantt

Nursing implications –

Nursing practice-

· Nurses working in wards should have enough knowledge about prevention of bed sores to promote positive living with bed sores.

· Healthy lifestyle for positive living with bed sores should be taught on regular basis to decrease the prevalence of bed sores[9].

Nursing Education-

· Emphasis can be given on modification of lifestyle practices in curriculum of nursing.

· Students can be provided with the opportunity to work in ICU, SDICU, ORTHO and FAMILY WARDS under supervision and guidance.

Nursing research-

The research findings of the study showed that majority of the subjects had below average knowledge regarding prevention of bed sores. The study was give motivation to the researcher to conduct the same study with different variables on a large scale.

Recommendations-

Based on the findings the following recommendations are offererd for future research—

· A similar study acn be conducted at State and National level for better generlization.

· The study can be replicated on a large sample to validate and generliazed the findings.

· The study can be conducted on different subjects

and in different settings.

A study can be conducted to assess the knowledge, attitude and practice.

Ethical Clearance- Taken from ethical committee of Army College of Nursing , Jalandhar Cantt.

Source of Funding- Self

Conflict of Interest - nil

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Effectiveness of Structured Teaching Programme on Knowledge of Preparation and Management of Labour among Primigravida Women in Selected Hospital, Salem, Tamilnadu, India

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Abstract

Background: Labor is one of the most painful events in a women's life. Many women would like to avoid pharmacological or invasive methods of pain management in labour, and this may contribute towards the popularity of complementary methods of pain management. This review examined the evidence currently available on manual methods, including frequent change in positions, massage and reflexology, for pain management in labour. The main aim of this study is to identify the level of knowledge on preparation and management of labour among primigravida women.

Methods: A Quantitative pre experimental with one group pre and post test design was selected and through purposive sampling technique the samples were recruited. The total sample size was 30 primigravida mothers at 36-37 weeks of gestation. Tools like demographic variables, structured interview schedule and structured teaching programme on preparation and management of labour was used. At the first day, pre test was conducted by using SIS and immediately after the pre test structured teaching on preparation and management of labour was administered for 30 minutes as a group. After 7 days the post test was conducted by using same structured interview schedule. Data analysis done by both descriptive and inferential statistics.

Findings: Highest percentage (50%) of the women were in the age group of 21-25 years. The overall mean score in pre test was 12.16±4.3 and the mean percentage was 41.26 whereas in post test the overall mean score was 22.76±5.68 and the mean percentage was 73.86. The calculated 't' value was 10.18 at $p < 0.05$ level of significance. It depicts that structured teaching prgramme on preparation and management of labour was highly effective. There was no significant association between the demographic variables with pre and post test knowledge scores.

Conclusion: Evidence-based maternity care emphasizes on the practices that increase safety for mother and baby. Women attending antenatal care clinic in teaching hospital in rural part of India were poorly prepared for the experience of delivery. Antenatal programmes should incorporate education concerning pain of labour and methods available to alleviate pain. This study suggests that the current approach of antenatal preparation in the NHS, of asking women to make decisions antenatally for pain relief in labour, needs reviewing.

Keywords: *Preparation and Management of Labour, Structured Teaching Programme, Primigravida women.*

Introduction

Labor is the process through which a fetus and placenta are delivered from the uterus through the vagina. Human labor divides into three stages. The first stage is further divided into two phases. Successful labor involves three factors, which include maternal efforts and uterine contractions, fetal characteristics, and pelvic anatomy. This triad is classically referred to as the passenger, power, and passage. Labor is typically monitored by multiple

modalities. Serial cervical examinations are used to determine cervical dilation, effacement, and fetal position, also known as the station. Fetal heart monitoring is employed nearly continuously to asses fetal well-being throughout labor.[1]

Making use of good, evidence based routines, for management of normal childbirth is essential to ensure quality of care and prevent, identify and manage complications if they occur. Two essential routine care interventions as defined by the World Health Organization are the use of the Partograph and Active Management of the Third Stage of Labour. Both interventions have been evaluated for their ability to assist health providers to detect and deal with complications.[1]

A study conducted on Effectiveness of pharmacological and non-pharmacological pain relief methods and to compare them. 258 women were included in the study and interviewed using a questionnaire and the visual analogue scale for pain. They were divided into six groups depending on chosen method of labour pain relief: epidural anaesthesia (EA; $n = 42$), water immersion and water birth (WB; $n = 40$), nitrous oxide gas for pain control (G; $n = 40$), transcutaneous electrical nerve stimulation (TENS) ($n = 50$), multiple management (MM; $n = 42$), none (N; $n = 44$). The average age of the women was 29.4 ± 3.74 years and 60.47% of them were nulliparous ($n = 156$). Mean values of labour pain intensity were 6.81 ± 2.26 during the first stage of labour; 7.86 ± 2.06 during the second stage, and 3.22 ± 2.46 during the third stage. There was no significant difference in pain level between epidural analgesia and gas groups in the first stage of labour ($p = 0.74$). Nevertheless, epidural analgesia reduced pain level during the second and third stage (both $p < 0.01$). The highest satisfaction level pertains to water immersion ($n = 38$; 95%). Epidural analgesia is the gold standard of labour pain relief, however water birth was found to be associated with the highest satisfaction level of the parturient women.[2]

Conducted a retrospective cohort study of 264 singleton pregnancies during labor was performed at a low-risk pregnancy maternity during a 6-month period. Perineal trauma was classified according to the Royal College of Obstetricians and Gynecologists (RCOG). From a total of 264 women, there were 2 cases (0.75%) of severe perineal trauma, which occurred in nulliparous women younger than 25 years old. Approximately 46% (121) of the women had no tears, and 7.95% (21) performed mediolateral episiotomies. Perineal trauma was not associated with maternal position ($p = 0.285$), health professional (obstetricians or midwives; $p = 0.231$), newborns with 4 kilos or more ($p = 0.672$), and labor analgesia ($p = 0.319$). The multinomial analysis showed that white and nulliparous presented, respectively, 3.90 and 2.90 times more risk of presenting perineal tears. The incidence of severe perineal trauma was low. The prevalence of upright position during the second stage of labor was 42%. White and nulliparous women were more prone to develop perineal tears.[3]

Conducted a quasi-experimental study. Eighty women were interviewed as a study sample when admitted to the labor and delivery area and divided into three groups: 20 women received frequent changes in position (group A), 20 women received back massage (Group B), and 40 women constituted the control group (group C). Pain perception was measured after each intervention using the Face Pain Scale. The mean rank of the difference in pain scores among the study groups was as follows after the first, second, and third interventions, respectively: group A-52.33, 47.00, 49.2; group B-32.8, 30.28, 30.38; group C-38.44, 42.36, 41.21. There were significant differences between groups A, B, and C after the first, second, and third interventions ($p_1 = .011$, $p_2 = .042$, $p_3 = .024$). Back massage may be a more effective pain management approach than change in position during the first stage of labor.[4]

Randomised controlled trials comparing manual methods with standard care, other non-pharmacological forms of pain management in labour, no treatment or placebo. We searched for trials of the following modalities: massage, warm packs, thermal manual methods, reflexology, chiropractic, osteopathy, musculo-skeletal manipulation, deep tissue massage, neuro-muscular therapy, shiatsu, tuina, trigger point therapy, myotherapy and zero balancing. We excluded trials for pain management relating to hypnosis, aromatherapy, acupuncture and acupressure; these are included in other Cochrane reviews. Massage, warm pack and thermal manual methods may have a role in reducing pain, reducing length of labour and improving women's sense

of control and emotional experience of labour, although the quality of evidence varies from low to very low and few trials reported on the key GRADE outcomes.[5]

Conducted an observational and analytical retrospective cohort study conducted at the Mancha-Centro Hospital during the 2010-2014 period. Data were collected from 2990 women who gave birth vaginally. The main outcome variable was postpartum anaemia for two cut-off points (haemoglobin (Hb) <11g/dL and <9g/dL at 24-h postpartum). Women with prepartum anaemia (<11g/dL) were excluded. It included a multivariate analysis by multiple linear regression. 45% (1341) of women had postpartum levels of Hb <11g/dL, and 7.1% (212) of women had Hb <9g/dL. The most strongly associated risk factors with more severe anaemia (Hb <9g/dL) were episiotomy (OR 3.19. 95%CI: 2.10-4.84), first stage of labour >9h (OR 2.50. 95%CI: 1.58-3.94), primiparity (OR 2.50. 95%CI: 1.61-3.87) and previous caesarean section (OR 2.43. 95%CI: 1.51-3.90). The other independent risk factors for both Hb cut-off points were prolonged second stage of labour, instrumental birth, tearing>first degree, non-practice of active management and heavier birth weight of newborns. Postpartum anaemia has a high incidence. The active management of third stage of labour, selective practice of episiotomies, and performing instrumental births only when strictly necessary are efficient measures to lower the incidence of postpartum anaemia.[6]

Acupuncture use in obstetrics has been increasing in Western medicine, especially to alleviate complications of pregnancy, the most important cause of maternal mortality worldwide. One quarter of maternal deaths are caused by complications in the third stage of labor, an interval between complete delivery of the baby and the complete expulsion of the placenta. Passive (or expectant) management of the third stage of labor is occasionally associated with massive obstetric hemorrhage, a major cause of maternal morbidity and mortality, especially in low-income countries. Active management of the third stage of labor has been shown to reduce the risk of postpartum hemorrhage. Use of acupuncture in the first and second stages of labor could lead to a faster separation of the placenta in the third stage of labor. The possible effects of acupuncture in cases of retained placentas may have significant implications for possible complications and final outcomes of labor. Further studies are needed for more conclusive results.[7]

A study conducted to assess the risks and benefits of squatting position during second stage of labour and its comparison with the supine position. There was no difference in the application of episiotomies in both groups, however extension of the episiotomy occurred in 7% patients of the non-squatting group ($P < 0.05$). Para urethral tears occurred in 5% patients in squatting group, but all occurred in patients who were not given an episiotomy. Second degree, and third degree perineal tears occurred in 9% patients in the non-squatting group but none in the squatting group ($P < 0.05$). Forceps application was also significantly less in group-A 11% and 24% in group-B ($P < 0.05$).There were two cases of shoulder dystocia in group B but none in the group-A. During the Third stage of labour there were no cases of retained placenta in group A but there were 4% cases of retained placenta and 1% case of postpartum haemorrhage of more than 500 ml due to atony of the uterus in group-B. One patient in the non-squatting position had to have a caesarean section due to persistent occipito posterior position. There was no significant difference in the apgar scores, foetal heart rate patterns or requirement of neonatal resuscitation. It appears that squatting position may result in less instrumental deliveries, extension of episiotomies and perineal tears.[8]

Statement of The Problem:

A study to assess the Effectiveness of Structured Teaching Programme (STP) on Knowledge of Preparation and Management about Labour among Primigravida Women.

Objectives

1. Assess the knowledge on preparation and management of labour among primigravida women before implementation education programme.
2. To evaluate the effectiveness of structured teaching programme on knowledge of preparation and management about labour.
3. To associate the pre and post test knowledge scores of primigravida women with their selected demographic variables.

Hypothesis:

H1: There is a significant difference between pre and post test knowledge scores on preparation and management of labour among primigravida women at $p \leq 0.05$ level.

H2: There is a significant association between the pre and post test knowledge scores with the selected demographic variables at $p \leq 0.05$ level.

Conceptual Framework:

Adopted Rosenstock's and Becker Health Belief Model theory as a basis of conceptual framework, which is aimed to assess the effectiveness of structured teaching programme on knowledge of preparation and management of labour among primigravida women.

Methods

A Quantitative pre experimental with one group pre and post test design was used. To recruit the samples Purposive sampling technique was used. The study was conducted in Private Hospital, Salem. 30 primigravida women who have 36 & 37 weeks of gestation visited in OPD of Private Hospital was selected as samples. Tools used like demographic variables, structured interview schedule and structured teaching programme on preparation and management of labour. At the first day, pre-test was conducted by using SIS and immediately after the pre test structured teaching on preparation and management of labour was administered for 30 minutes as a group of antenatal women (4-5 mothers). After 7 days post test was conducted by using same tool. Data analysis was done by descriptive and inferential statistics. Descriptive statistics like mean, standard deviation and mean percentage was used to assess the knowledge on preparation and management of labour pain. Inferential statistics like paired 't' test was used to assess the difference between pre and post-test knowledge scores. Chi square was used to assess the association between pre and post-test knowledge scores with selected demographic variables.

Results

Highest percentage (50%) of women were in the age group of 21-25 years. Maximum (70) were had higher education. Most of them (67%) belong to Hindus and half of the percentage (54%) were housewife. Majority of (53.3%) women were having family monthly income of Rs. 5001-10,000 and both half of the percentage (53.3 %) of women belongs to nuclear family and labour support through her mother and all of them had regular antenatal checkup (53%)

Table No.1: Distribution of pre and post-test level of knowledge scores on preparation and management of labour among primigravida women

Level of Knowledge	Pre - test		Post - test	
	F	%	F	%
Inadequate knowledge (1 - 33)	18	56	-	-
Moderately adequate knowledge (34 - 66)	12	44	6	12
Adequate knowledge (67 – 100)	-	-	24	88

Distribution of pre and post-test level of knowledge scores of preparation and management of labour among primigravida women shows that in pre-test, 56 percentage of women had inadequate knowledge, whereas in post-test none of them had inadequate knowledge. In pre-test in moderately adequate knowledge 44 percentage of them obtained information and whereas in post-test only 12 percentage of them obtained moderately adequate knowledge. In post-test maximum (88%) of the mothers had adequate knowledge and in pre- test none of them obtained adequate knowledge. Hence it shows that after implementation of Structured Teaching Programme on preparation and management of labour mothers gained adequate knowledge so it was highly effective.

Table No.2: Area wise distribution of mean, standard deviation and mean percentage on knowledge regarding preparation and management of labour among primigravida women

n=30

S. No	Areas of preparation and management of labour	Max Score	Pre test			Post test			Diff. in Mean %
			Mean	SD	Mean %	Mean	SD	Mean %	
1.	Introduction	5	1.1	00.9	22	3.1	4.9	62	40
2.	1st stage of labour symptoms & management	10	4.6	1.31	46	7.9	6.3	79	33
3.	2nd stage of labour symptoms and management	6	2.4	1.25	40	5.2	5.9	86.7	47
4.	3rd stage of labour symptoms and management	6	2.3	0.98	38.3	4.7	5.9	78.3	40
5.	4th stage of labour symptoms and management	3	1.8	1.29	60	1.9	5.4	63.3	3
	Total	30	12.2	4.3	41.26	22.8	5.68	73.86	32.6

According to Area wise distribution of pre and post test knowledge scores shows that the highest mean score in both pre and post test was persist on the 1st stage of labour symptoms and management which was 4.6±1.31 and 7.9±6.3, the mean percentage was 46% and 79% respectively. The lowest mean score in pre-test was 1.1±0.9 the mean percentage was 22% in Introduction area, whereas in post-test the lowest mean score was 1.9±5.4, the mean percentage was 63 in the area 4th stage of labour. Hence it shows that after implementation of Structured Teaching Programme on preparation and management of labour was very much effective and highly significant.

Table No.3: Assess the difference between mean, SD and 't' value of pre and post test knowledge scores on preparation and management of labour

S.No	Knowledge	Max. Score	Mean	SD	Mean %	't' Value
1.	Pre -test	30	12.16	4.3	41.26	10.18*
2.	Post-test		22.76	5.68	73.86	

df = 29; P<0.05 – Significant*

The Difference between mean, SD and paired 't' test of pre and post test knowledge shows that in pre test, the overall mean score was 12.16±4.3 and mean percentage was 41.26. Whereas in post test the mean score was 22.76±5.68 and the mean percentage was 73.86. The calculated 't' value was 10.18 at $p<0.05$ level of significance, which shows it is highly significant. Hence it is interpreted that implementation of structured teaching programme was highly effective in improving the knowledge of primigravida women.

Table No. 4: Association between pre test knowledge scores of preparation and management of labour with their selected demographic variables

n=30

S.No	Demographic varibles	df	$\chi 2$	Table value
1	Age in years	6	4.204	12.59
2	Education	8	1.518	15.51
3	Occupation	6	1.081	12.59
4	Religion	6	3.965	12.59
5	Type of family	6	0.566	12.59
6	Monthly Income	6	0.529	12.59
7	Weeks of gestation	4	0.529	8.79
8	Labour support given by others	6	3.309	12.59
9	Residence	2	1.428	5.99
10	Antenatal checkup	2	0	5.99
11	Previous hospitalization	2	0.017	5.99

df = 29; $P<0.05$ – Not Significant

There was no significant association between age, education, occupation, religion, type of family, weeks of gestation, monthly income, labour support given by others, residence, antenatal checkup, previous hospitalization with the pre test scores on preparation and management of labour. Hence it shows that the difference observed mean score values were not true difference so the research hypothesis was rejected.

Conclusion

Highest percentage (50%) of the women were in the age group of 21-25 years. The overall mean score in pre test was 12.16±4.3 and the mean percentage 41.26 where as in post test the overall mean score was 22.76±5.68 and the mean percentage was 73.86. The calculated 't' value was 10.18 at 0.05 level of significance. It depicts that structured teaching prgramme on preparation and management of labour was highly effective. There was no significant association between the demographic variables with pre and post test knowledge scores.

Implications:

Nursing Service:

1. Continuing Nursing Education can be arranged for staffs working in both hospitals and maternity centre.

2. Motivate the students, nurses and health care workers to update the knowledge on various methods and approaches on preparation and management of labour.

Nursing administration:

The nurse administrator can organize in service education program regarding newer modalities of non-pharmacological measures used in all stages of labour.

Nursing research:

Nursing research can be conducted to find out the effectiveness of newer modalities used management of labour, which would help in updation of the clinical practice with evidence based approach.

Recommendation:

Ø A comparative study can be done to determine the effectiveness on management of labour between primigravida and multigravida women.

Ø A study can be conducted to assess the knowledge regarding preparation and management of labour among students and staff nurses.

Ø A comparative study can be done to determine the effectiveness of management of labour between rural and urban areas.

Conflict of Interest: Nil

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Adoption of Clean Milk Production practices by Dairy Farm workers : A systemic review study

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Abstract

Milk being an easily perishable product, needs to be produced and handled in hygienic way right from farm till it reaches to the consumers table. The adoption of clean milk production practices has great potential for increasing the quality of milk production. The review study revealed that majority of the dairy farmers had adopted routine dairy management practices in the areas of animal house, milking area, milking utensils and feeding of milking animal management whereas non adopted practices were care of milking animals, udder management, milker's hygiene, milking techniques and post milking care practices. Public health officials should educate them and also regularly monitor their practices to maintain the quality of milk. Small initiatives in this regard can protect the society by consuming milk from various zoonotic diseases and health issues.

Keywords : *Milk Dairy Farmworkers (MDF), Clean Milk Production(CMP)Milk hygiene*

Introduction

Milk is the main product of the dairy farm industry, produced mainly for human consumption. A dairy farmer tries to maximize milk output from his/her dairy herd. At the sometime, farmers must ensure hygienic conditions of milking so that milk can be made fit for consumption. Milk, if it is not fit for human use is a financial loss to the producing farmer.Clean milk production is considered as one of the important factors in the economy of the state. The adoption of clean milk production practices has great potential for increasing the quality of milk production.

The clean milk production (CMP) involves cleanliness at different phases of handling animals, processing, and transporting of milk and milk products. There are mainly four factors to be considered in CMP practices: Animal hygiene, milking hygiene, equipment hygiene, and processing hygiene.

Clean milk can be defined as milk produced from healthy mulch animal possessing normal flavor, devoid of dirt, and filth containing permissible limit of bacteria, and essentially free from adulterants, pathogens, various toxins, abnormal residues, pollutants, and metabolites. The clean milk production (CMP) involves cleanliness at different phases of handling animals, processing, and transporting of milk and milk products. There are mainly four factors to be considered in CMP practices: Animal hygiene, milking hygiene, equipment hygiene, and processing hygiene.[1]

Contaminated milk deteriorates quickly and is a cause for health concerns.. Zoonosis is a disease and infection that are naturally transmitted between vertebrate animals and humans.[2]

Poor hygiene, poverty, malnutrition, lack of education, and close contact with animals are predisposing factors for zoonotic diseases. There are

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some 45 zoonotic diseases purported to be transmitted from cattle. Dairy farmers, who are in close contact with their animals, are always at risk of acquiring infections from animals. [3]

Some of the zoonotic diseases that spread through milk are Brucellosis, Tuberculosis, Salmonellosis, etc. In the absence of proper hand wash after direct contact with infected feces, accidental ingestion of bacteria can also occur. [4]

The milk quality is determined by aspects of composition and hygiene of milk, where breeding, feeding, management of healthcare, fodder production, and many such facts mainly influence the compositional quality. Dairy farmer is the key client in this process, who decides the quality of milk from feeding of the milk animal to dairy product supply chain.

Objectives

The objectives of this review study was to assess profile characteristics of the dairy farmers, adoption behaviour of dairy farmworkers about recommended dairy management practices, relationship between personal, socio-economic and psychological characteristics of dairy farmers with adoption behaviour of recommended dairy management practices, document the existing dairy management practices followed by dairy farmers, assess the training needs of the dairy farmers and suggest the strategies to improve milk production.

Adoption of Clean Milk Production (CMP) practices by Dairy Farm Workers (DFW)

Sufficient awareness is important for dairy farm workers for successful and profitable dairy farming. In clean milk production, milking is the key operation on a dairy farm. Milking is an art requiring experience and skill. Milking should be conducted gently, quietly, quickly, cleanly and completely. Cleanliness of animal sheds, cleanliness of animals, cleanliness of milkers and milking pails, milking methods, transportation of milk from dairy farm to processing units are important operations to adopt by the dairy farmers.

The CMP involves thorough cleanliness at all phases of handling and stringent quality control and hygienic measures have to be adopted at farm level. The hygienic practice of milking is the most important steps in clean milk production. Clean milk production results in milk that are safe for human consumption, free from disease-producing microorganisms, holding high keeping quality, high commercial value and high-quality base suitable for processing, resulting in high-quality finished products. Milk needs to be protected from all possible sources of microbial contamination. Potential sources of contamination of milk are dung, water, utensils, soil, feed, air, milking equipment, animal and the milkman. [5].

Considering the importance of adoption of clean milk production practices followed by dairy farmers and the quality milk production suggested by various scientific studies . Recently a study was conducted by Ahmed Ikra et al. (2020) in Najafgarh Tehsil, a typical peri-urban area in Southwest Delhi. This study revealed that that socioeconomic status had a significant relationship on practices adopted by farmworkers, whereas other factors such as age and experience did not show significant relationships. This study was also revealed that age, education, and socioeconomic status does not affect the knowledge level and awareness of farmers toward CMP practices as mean correct responses difference among different age, socioeconomic groups remained statistically non-significant. dairy farmworkers followed practices such as periodic examination with veterinary doctors (58.3%). In this study, there was low practice (i.e., <50%) of few activities such as isolation of cattle from the diseased ones (46.6%) and vaccination of cattle (45%). Most of the cattle dung disposed in the running drain (41.6%), while (24.6%) few used it for household and other purposes. A critical perusal of the data furnished portrays that farmworkers follow few practices (i.e., more than 50%) such as filtration of milk (86.6%), covering utensil with lid (95%), cleaning of utensils with water (76.6%), and 18.3% used detergents for washing utensils. Few of the farmworkers use a teat dip solution (6.6%).[6]

An another study was conducted by Surkar SH, et al. (2017) in Wardha district of Maharashtra In this study, it was observed that majority of the dairy farmworkers (82.50%) were reluctant to keep milking area clean and its disinfection. About (60.83%) of dairy farmworkers had not cleaned animal shed fifteen minutes before milking. Partially adoption of these practices was recorded in (39.17%)dairy farmworkers More than

half of respondents had partially adopted preventive measures in the group care of milking animals *viz.* not to use BHC or DDT as insecticide for control of ectoparasites in milking animal (59.17%), vaccinate milking animal regularly (56.67%), regular examination of milking animal by veterinarian (55.83%). Majority of the dairy farmworkers didn't adopted measure to prevent animals from licking paints from walls or iron bars (96.67%), clipping of hairs around the udder and hind quarter of the milking animal (88.33%). Majority of dairy farmworkers were not much aware about the risk of zoonoses and milk contamination and Majority of the dairy farmworkers (69.17%) were not much aware about fact *viz.* not to allow diseased person for milking. It was attributed to the lack of knowledge and exposure to demonstration to dairy farmers or difficulties perceived by farmers in changing their routine habits. They also didn't followed important practices *viz.* thrice milking a day of high yielder (88.33%), collection of 2-3 stripping of milk before milking in a separate pot to check subclinical mastitis (87.50%). [7]

A study conducted by Radder and Bhanj (2011) in Gadag district in northwestern part of Karnataka state, India, It was observed that dairy farmworkerslargely neglected impact of cleanliness on animals' udder and health, about milk contamination causing health hazards. [8]

A study conducted by Vikram Singh and Jancy Gupta (2015) in Rajasthan suggested that (55.84 %) of the dairy farmworkers had medium level of knowledge in various aspects of CMP, followed by 33% and 20% of them having low and high level of knowledge, respectively. They had highest knowledge in 'Housing' [Knowledge Index (KI) =85.83], followed by 'Milking' (KI=76.66). However, they had poor knowledge in 'Cleaning of animal' (KI=50.41) and 'Cooling of milk' (KI=57.91). It was observed that (71.67 %)of thedairy farmworkers had medium level of adoption in various aspects of CMP, followed by (13.33%) and (15.00 %)of them having low and high level of adoption, respectively. It was also found that they adopted recommended practices of 'Transportation' up to maximum extent with Adoption Index (AI) of 86.50, followed by 'Feeding' (AI=68.68), however, extent of adoption regarding 'Cleaning of utensil' (AI=43.40) and 'Healthy herd management' (AI=45.23) was found less. [9]

A similar study was conducted by Rayees Ahmed Bafandaet. Al. (2018) in R. S. Pura block of Jammu district to evaluate clean milk production practices adopted by the dairy farmers. The results of the study revealed that cleaning of animal house daily was adopted by majority (92.50%) of the dairy farmworkers , very few (27.50%) of dairy farmworkers had construction of the pucca floor and well drainage system in the animal shed. Only few respondents provide ventilation to animal house and collected the dung and disposed away of the animal house. Very less (17.5%) of respondents keep milking area clean, disinfested and free from flies and insects. Majority (72.50 %)of dairy farmworkers adopted the practiced of vaccination of milking animals regularly. None of the dairy farmworkers cleaned animal shed fifteen minutes before milking, adopted regular examination of milking animal by veterinary doctor and clip hairs around the udder and hind quarter of the milking animal as a preventive measure for clean milk production. A very low (22.50 %) of dairy farmworkers wash udder for removal of mud and dung.

All the dairy farmworkers (100%) washed their hands with plain water before milking and trimmed their nails regularly. About (52.5 %)of dairy farmworkers covered their head with cap or handkerchiefs at time of milking. Milking by healthy person was adopted by majority (85%) of respondents.

Majority (82.5 %)of dairy farmworkers milked milch animals randomly. Only (24.3%) of dairy farmworkers adopted the practiced of milking the healthy animals first. Very few (11.90%) of dairy farmworkers used separate utensils for milking of healthy and sick animal. Majority (77.50%) of dairy farmworkers complete milking within 6-7 minutes.

Not a single dairy farmworkers practiced post and pre-milking tip dipping in potassium permanganate solution. None of dairy farmworkers practiced washing entire animal or washing hind quarter or back of cows before milking and changed the clean dress before milking.

None of the dairy farmworkers dispose fore-milk and practiced post milking feeding to keep animal

in standing position for 15 min. after milking. Only (12.5%) had adopted the practiced of passing the milk from a sieve or muslin cloth for removal of the dirt.[10]

A study was conducted by R. N. Bhise et al. (2018) in Ratnagiri, Sindhudurg, Raigad and Thane districts of Konkan region of Maharashtra state. In this study , overall adoption behaviour of dairy farmworkers towards recommended dairy management practices was found 'medium' (71.50 %), while nearly equal number, *i.e. (*17.00 %)and (11.50 %)of the dairy farmworkers were in 'low' and 'high' of adoption behaviour, respectively. The personal, socio-economic and psychological characteristics of the dairy farmworkers namely, annual income, number of milch animals, milk production, availability of water, economic motivation and management orientation had showed positive and significant relationship, while self-education, family size, experience in dairying, land holding, social participation and training received had exhibited non-significant relationship with adoption behaviour of recommended dairy management practices. [11]

An another study was carried out by Quddus (2012) in three different agro-ecological zones and 180dairy farmworkers were interviewed. Self practiced dairy technologies were listed; adoption score for each technology and adoption index (AI) for each dairy farmworkers were studied. One-fourth farmers used artificial insemination for breeding purpose and two-fifth belonged to medium or high level of technology adoption. Only (35%)dairy farmworkers adopted crossbred cows and some others upgraded indigenous with exotic breeds. (About 17.5%) rural dairy farmworkers and (70%) semi-urban dairy farmworkers reared crossbred cows and rural dairy farmworkers were reluctant to utilized all kinds of improved technologies. Secondary and higher educated dairy farmworkers were 9.7 times more likely to be adopting improved technologies compared to illiterate dairy farmworkers. Top ranked constraints were ill equipped and negligible services at Adoption Index (AI centre), no provision for testing of animals, poor knowledge of dairy farmworkersabout health care of animals and inadequate knowledge about proper feeding and balanced ration.[12]

An another survey done by YANG Xin-ran et al. (2019) in northern China revealed that an overall adoption rate of various milk safety measures by smallholders is close to 48% with wide variations across the dairy farmworkers. The empirical result of the study indicated that dairy farmworkers adoption of raw milk safety measures was positively affected by farm size. These findings suggested that the changing dairy production structure towards larger farms and away from backyard dairy farming prompts smallholder dairy farmers to adopt more raw milk safety measures. This lends some support to the role of recent policy initiatives towards larger farms and away from backyard dairy farming on increasing the dairy farmworkers milk safety practices and reducing on-farm incidence of milk safety. [13]

Conclusion

Milk is an essential commodity, which is consumed by large number of consumers. Maintaining quality is important for both health and financial perspectives. The review study revealed that majority of the dairy farmers had adopted routine dairy management practices in the areas of animal house, milking area, milking utensils and feeding of milking animal management whereas non adopted practices were care of milking animals, udder management, milker's hygiene, milking techniques and post milking care practices. The knowledge of dairy farmworkers was found satisfactory a few factors such as personal hygiene of workers in wearing clean clothes, hand hygiene, both pre and post milk hand washing, usage of soap and towel. It is also noted that the cleaning animal house daily was adopted by majority of the dairy farmworkers. Many dairy farmworkers had pucca floor, well drainage system in the animal shed and adequate ventilation in animal house. Most of dairy farmworkers adopted the practice of vaccination milking animals regularly, whereas deworming was practiced by very less percent of respondents.

Therefore, efforts should be made to convince dairy farmers about the adoption of preventive measures for quality milk production. They should be motivated through organizing trainings and demonstrations at field levels. Public health officials should educate them and also regularly monitor their practices to maintain the quality of milk. Small initiatives in this regard can protect the society by consuming milk from various zoonotic diseases and health issues. Few dairy farm workers should adopted regular examination of milking animal by veterinary doctors. They should have a proper preventive measure for clean milk production.

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Impact of Alternative Practicum Approach on Enhancing Paediatric Clinical Learning among Male Nursing Students in Oman

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Abstract

Objectives: The pursuit of providing competent childcare is an utmost concern of all nurses, despite cultural issues. This study aimed to assess the impact of alternative practicum approach on improving paediatric clinical learning among male nursing students in Oman compared to the traditional approach. **Methods:** A quasi experimental design was conducted. Male nursing students from Oman Nursing Institute were divided into two groups and allocated into two clinical settings; alternative practicum approach and traditional practicum approach**.** Alternative care settings included areas like health centers, schools, emergency and outpatient department, pediatric intensive care unit and post cardiac surgical unit, while traditional setting referred to hospital general pediatric wards. Randomization of the only available third year male General diploma nursing students (N= 19) were included. The traditional group (N=10) being the control group during the first semester while that of alternative as experimental group (N= 9) during the second semester. Both groups completed the semi-structured questionnaire that was duly validated by external researchers, revealing the level of impact of alternative over traditional approaches and their preferences. The level of extent of agreement between alternative and traditional approaches in terms of clinical learning, providing child's care, facilitating factors, barriers in providing childcare was identified. **Results**: One-way ANOVA, version 24 was conducted and the results revealed a statistical significant difference in the alternative practicum approach compared to the traditional approach (F= 59.989, P=.0002). The results indicated that 56% of the students on the alternative practicum approach agreed that they were confident in providing care to children in paediatric settings compared to the students on the traditional approach (33). The findings also suggested that 89% of students in the alternative approach agreed to high extent that the settings designed facilitated confidence as future pediatric nurse as well as fostered knowledge, skills acquisitions and caring attributes of a pediatric nurse. It was found that cultural barrier was a main issue in providing comprehensive care to children by male nursing students in pediatric clinical settings in Oman. **Conclusion:** The study showed that the alternative practicum approach was effective. Male nursing students felt confident in performing childcare skills in the absence of female gender in the area of clinical settings, considering the sensitivity of culture. Partnerships with heath care team and community in giving equal opportunities to male nursing students in the childcare practicums fosters a better milestone in nursing education. Alternative paediatric clinical approach fostered confidence in male students as future paediatric nurses. It also facilitated skills acquisitions and instilled in students the essence of caring to care for children.

Key words: *Alternative care settings, Male nursing students, childcare, clinical learning, clinical practicums.*

Introduction & Background

Nursing is considered as one of the appreciated and recommended professions in Oman and some Arab countries. It is stereotyped as a feminized profession with qualities of nurturing and caring since the time of Florence Nightingale, worldwide.,[20,22] Although the demand of recruiting male nurses in nursing profession has increased over the last two decades, the intake of male nurses in nursing profession in Oman and elsewhere

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is still less. Recently, there was a growing need to have more male nurses in Oman and; therefore, the nursing education programs in Oman lately had increased the recruitment of male nurses into nursing education. [2,17] In nursing profession, male students are required to practice nursing skills for pediatric and obstetrics and gynecology; which is not welcomed in the Omani culture as these specialties are considered a female- dominated specialty.[23] Due to cultural challenge faced in Oman to provide care in those specialty areas, it was imperative to examine alternatives to strengthen the male nursing students' clinical skills in pediatric clinical settings.

Providing pediatric nursing care requires diligence in assessment of children and addressing parental concerns. [3] In nursing education, the clinical placements are considered enriches the clinical learning of the students and have an important role in shaping the students perceptions towards nursing [1, 2, 8] A review study conducted in Oman and showed that admission to nursing colleges is higher for female student (80-85%) compared to male students (15-20%).[2] Ministry of Health in Oman (MOH) justified that female nurses can work in any area of health care, whereas male nurses were restricted to some areas of practice to include only male wards and critical areas.[17,18] Currently, the proportion of female to male nursing in Oman is about 7:1. [17] Another study highlighted that male students showed positive attitudes towards nursing profession and have more humanistic approach and professional power, offering care unconditionally at all levels; not recognizing any limits in who they would work with or care for. [9,10,11] However, research highlighted some challenges encountered by male nursing students; which may have effected them as students and future nurses. Male students encountered gender barriers; which have negatively affected their nursing education, academic achievement and professional practice. [12,13,24,25] Other studies explored the experiences and perceptions of male nursing students towards nursing and nursing education. [15] The findings revealed that male nursing students had negative feelings about nursing, experienced a gender bias and had psychological pressure significant. [16] It was reported that male nursing students face discrimination by nurses, physicians and the public. [5] The study argued that male nurses are professionals who care the same way as female nurses and therefore, learning outcomes of male nursing students must be improved and more care must be given to them to help them enjoy nursing and improve their clinical practice. [5] Moreover, another study stressed that male students in nursing education might have some concerns and barriers to effective care; therefore, addressing and identifying the stigmatizing factors is essential as it may form a barrier for their care and affect the care provided by them. [20] Male nursing students should be given opportunities to practice tasks and receive feedback, being allowed to work independently and collaborating with staff, gaining a sense of control and feel acceptable in the clinical setting. [20]

Justification for the study:

In the past five years, the intake of male students has increased in the nursing institutes; which constituted around 15 % of the annual intake in 2013. The existing literature found that male students encountered gender barriers, felt uncomfortable during their placement, which negatively affected their academic achievement and practice. [14,21,26] Male nursing students in Oman are eager to work effectively in paediatric clinical settings; however, they experience anxiety, gender bias, cultural barriers in providing effective child care. [4,14, 25,27] The current study is the second phase of a mixed method study. [1] The first phase was designed to assess the male nursing students' perception of pediatric clinical placement using a focus group interview. The students found culture as a barrier to deliver effective pediatric care, experienced gender bias and lack of support from health care providers.[3] Therefore, it was suggested to develop and examine an alternative approach for pediatric training than the previous traditional approach for training male nursing students; hence this study was designed. No similar studies had been conducted in Oman, nor in the Middle East, which adds more emphasis to conduced this study. Therefore, the aim of this study was to examine the impact of Alternative Practicum Approach (APA) compared to the Traditional Practicum Approach (TPA) to strengthen pediatric clinical skills, caring, and confidence among male nursing students. Alternative care settings refer to the areas like health centers, schools, emergency and outpatient department, pediatric intensive care unit and post cardiac surgical unit, while traditional setting refers to hospital General pediatric wards.

Methodology

The study adopted a quantitative comparative design with two groups recruited on different semesters. A purposive sampling approach was selected to choose the participants. The TPA group were all third year male nursing students available in semester one (N= 10). Those students posted in the regular pediatric clinical wards in Royal Hospital; while the APA Group (all male nursing students, N= 9) were assigned in the alternative practicum settings; which included schools, health centers and some intensive pediatric units in semester two (table 1). Both groups received equal weeks of training, exposed to same credits of theory courses, practicum and were comparable at the level of study. Both groups completed modified structured questionnaire adopted from O'Lynn's Inventory of Male Friendliness in Nursing Programs (acceptable reliability= 0.7) the assessed the students' general perceptions of the APA/ TPA, gaining pediatric skills, barriers and the facilitators of the APA compared to the TPA. The questionnaire was distributed at the end of the clinical rotation for both groups. The tool had four different domains: 1) Perception of practicum approach (4 items), gaining of pediatric skills (6 items), barriers in proving child care (8 items).

Table 1: Alternative Approach of practicums (15 weeks)

APA approach	TPA
• General Peadiatric wards (5 weeks) • Schools visits (2 weeks) • Health Centre (2 weeks) • Adult male ward (2 weeks) • Paediatric ICU/PCSU(2weeks) • OPD / A& E (2 weeks)	• General Peadiatric wards (13weeks) • Schools visits (1 week) • OPD / A& E (1 week)

Data Analysis: Data were analyzed using SPSS, version 24. One-way ANOVA was conducted to elicit the differences between both groups. Initially, frequencies were calculated, missing cases were excluded from the study.

Results

The results elicited a significant difference between the two groups in the overall clinical rating scores ($p<0.05$ $F= 59.989$, $P=.0002$). The APA group had higher clinical rating scores (M= 14, SD= 2.3) compared to the TPA (M=9, SD=3.6). In addition, 71% of male students in the APA reported high confidence in providing pediatric clinical skills compared to male students in the TPA (33%). Moreover, 89% of the APA group agreed to high extent that Alternative pediatric approach facilitated confidence to become a future pediatric nurse as well as it fostered gaining of knowledge, skills and caring attributes of male nursing students (Figure 1) compared to the TPA (61%) group.

Regarding the barriers that hindered providing child care, equally both groups reported the socio-cultural as the most common factor; 80% of male students perceived that nursing is a female dominated profession that to some extent hindered them from performing child care. The presence of female attendee limited providing care to children in the wards, treated them differently and females generally favored communicating the child's needs to female nurses. In addition, students in the TPA reported feelings of fear & anxiety, low self-esteem in providing care to children in the pediatric wards (77%) compared to APA group (38%).

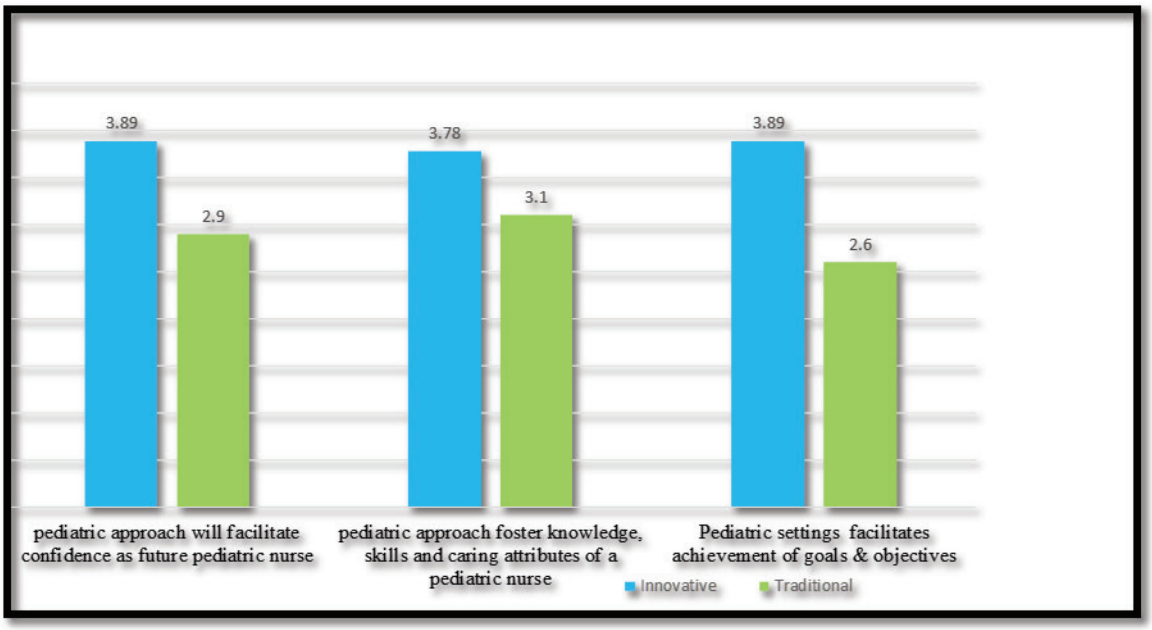


Figure 1: Male students' perception of APA & TPA

Discussion

The study provides a useful insight into the impact of APA on the satisfaction, confidence and improvement of male nursing students' pediatric clinical skills. The finding suggested that the alternative practicum settings for the male students helped changing their perception about caring in pediatric settings, facilitated gaining clinical skills and boosted more confidence in them. To our knowledge, this is the first study in the Middle East that examined the male students' perception on clinical posting in pediatric settings. We found that sociocultural issues and gender bias was the most common factor underlying all issues related to barriers to caring for children in Oman, as reported by male nursing students. The findings are consistent with the earlier studies.[19,20,,22,24,25,26,27] Where they found Gender bias does exist in nursing education and can lead to discrimination against male students; which may effect quality patient care. The male nursing students in the study reported that they were interested to work in critical care areas, and expressed their desire to work in health centers and schools. Almost half of the participants expressed their desire to work in paediatrics, but very challenging in reality due to socio-cultural factor.

Conclusion

The study highlighted the perceptions of male nursing students in providing care for children in the new alternative pediatric settings compared to the traditional approach. The APA facilitated confidence in male nurses, fostered gaining of skills, knowledge and caring attitudes, which are required as a future pediatric nurse. The study implies the need to design an alternative approach for strengthening child health care clinical placements for male nursing students that help contribute preparing diversified workforce. It is essential for policy makers and curriculum planners ensure that courses include some distinct flexible clinical process whereby the clinical learning takes place in a more effective way, providing equal opportunities for both genders in the nursing program, incorporate changes/additions to the curriculum to nurture male nursing students and equip them with the essential practicum skills of pediatric nursing and achieve the course objectives.

Limitations

The study had a small sample size which limits the generalizability of the findings. Data were collected in two different semesters for the two groups; which may have influenced the results. Possibility of study contamination was another limitation of the study. It is recommended to replicate the study with more sample size.

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