

Effectiveness of prevention and management of pressure ulcers, as" a patient safety issues" among bed ridden Patients at King Abdul Aziz University Hospital in Jeddah, Saudi Arabia

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Abstract: Background: Despite implementation of evidence-based pressure ulcer (PU) prevention protocols, patients continue to suffer from these injuries (1). So prevention of the pressure sore has been a nursing concern for many years. Although the prevention of pressure ulcers is a multidisciplinary responsibility, nurses play a major role in preventing it. Most pressure sores are preventable and are caused by faulty care (2). King Abdul-Aziz University Hospital (KAUH) is one of the larger sized governmental hospitals in Jeddah, Saudi Arabia with a total bed capacity of 878. It underwent accreditation process administered by Accreditation Canada from 2007 to 2008. **Aim** of the study is evaluate the effectiveness of prevention and management of pressure ulcers, as" a patient safety issues" among bed ridden Patients at King Abdul Aziz University Hospital in Jeddah, Saudi Arabia. **Setting** : descriptive exploratory with randomized sampling was used which calculated 40 newly admitted patients and 40 nurses who cared for the same patients and carried out in King Abdul-Aziz University Hospitals in Jeddah in Kingdom of Saudi Arabian. **Methods** : three modified tools for data collection were used. First one namely; Braden risk assessment scale. Second one namely: risk assessment tool ,divided into 2 main parts related to Socio-demographic characteristics, Knowledge towards age, sex, level of conscious, length of staying in hospital, date of admission, level of activity, department-----etc. second part is a process of care. Third one namely: observational checklist used to investigate the nurses' role. **Results:** present study finding revealed that no one of studied nurses done a comprehensive skin assessment is which should be performed within 24 hours of admission as providing care for high risk patients; while 80.8% high risk patient given the same care but after patients have bed sore and there is significant differences was noticed. **Conclusion:** The prevalence of pressure sores are developing at factors such as immobility, comatose status and long of stay among bed ridden patients as well as majority of participating nurses were providing care to use blue sheet pad & foam matters(used specially for bed sores) and most of nurses were not applicable to give the patient and family health education about preventive measures of pressure ulcer, and assess with family member who is caring for patients, understanding and ability to perform skin care. **Recommendations:** The present study emphasized on empowering staff nurses to provide preventive pressure ulcer care by identifying risk assessment, planning staff development programs based on staff, organization, and patient needs and monitoring the process to conduct assessment of all new admissions to determine who is susceptible to develop of pressure sores.

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Key words : pressure ulcer , bed ridden patient, care of skin , comatose patient, preventive measures

1. Introduction

Despite implementation of evidence-based pressure ulcer (PU) prevention protocols, patients continue to suffer from these injuries. The total number of hospitalizations with a secondary diagnosis of PU in the United States increased by 80% between 1993 and 2006, and in 2009, the incidence of facility acquired PUs was determined to be 5% on the basis of assessments of more than 92,000 patients. 2 International surveys conducted during the 2001–2008 period indicated an average prevalence of 7.05% (median, 6.8%) (1). So prevention of the pressure sore has been a nursing concern for many years. Although the prevention of pressure ulcers is a multidisciplinary responsibility, nurses play a major role in preventing it. Most pressure sores are preventable and are caused by

faulty care. Pressure ulcers remain a major health problem affecting approximately 3 million adults, the prevalence of pressure ulcer among high risk hospitalized patient has been noted high 38% among patient age 55years patient (2). Majority of the pressure sores began soon after admission, particularly on patients' operation days. 34 percent developed ulcers within the first week, and 24 percent developed ulcers within the second week. 95 percent of pressure ulcers occur in the lower part of the body. Incidence of pressure ulcers is actually higher in acute care hospitals than in nursing homes (3). King Abdul-Aziz University Hospital (KAUH) is one of the larger sized governmental hospitals in Jeddah, Saudi Arabia with a total bed capacity of 878. It underwent accreditation process administered by Accreditation Canada from

2007 to 2008. These are the rate of pressure ulcers developed per 1000 admissions ($p < 0.020$), which decreased, and the total number of the occurrence variance reports ($p < 0.002$)⁽⁴⁾. Therefore the aim of the study is evaluate the effectiveness of prevention and management of pressure ulcers, as "a patient safety issues" among bed ridden Patients at King Abdul Aziz University Hospital in Jeddah, Saudi Arabia.

⁽⁵⁾ define the pressure ulcer as an area of soft tissue damage that usually developed in areas where are compressed between bony prominence and external surfaces. ⁽⁶⁾ added that it is result of skin breaks down when constant pressure, or pressure combination with shear or friction, is placed against skin. Fitzgerald⁽⁷⁾ Illustrated the most common bed sore location were the sacrum (a triangular bone at the base of the spine), heels; buttocks; Ears; Scapula; Spinous Process Shoulder; Elbow; Iliac Crest; Sacrum/Coccyx; Ischial Tuberosity; Trochanter; Knee; Malleolus; Heel; and Toes⁽⁸⁾. Pressure ulcers were graded from I to IV: grade I, non-blanchable erythema with intact skin surface; grade II, epithelial damage, abrasion or blister; grade III, damage to the full thickness of the skin without a deep cavity and grade IV, damage to the full thickness of the skin with a deep cavity. While ⁽⁹⁾ mentioned that there are many factors affecting on developing pressure ulcers such as intrinsic risk factors as reduced mobility; sensory impairment; acute illness; level of consciousness; extremes of age; vascular disease; sever chronic or terminal illness; previous history pressure damage; malnutrition and dehydration. ⁽¹⁰⁾, developed comprehensive guidelines for the prediction and prevention of pressure ulcers. This guidelines as risk assessment, skin care, identifying individuals 'at risk', seating, positioning, mechanical loading, patient and staff education by ⁽¹¹⁾. He stated that daily assessment of the skin; objective measurement of every wound; immediate initiation of a treatment protocol; mechanical debridement of all nonviable tissue; establishment of a moist wound-healing environment; nutritional supplementation for malnourished patients; pressure relief for the wound; elimination of drainage and cellulitis; biological therapy for patients whose wounds fail to respond to more traditional therapies; physical therapy; and palliative care. Availability of the described treatment modalities, in combination with early recognition and regular monitoring, ensures rapid healing and minimizes morbidity, mortality, and costs. wherever nurses according to patient safety and quality indicators have great role to protect patients and accomplish their goals of patient safety management. ⁽¹⁾, added that pressure ulcer protocols include admission and ongoing skin assessment plus identification of patients at risk for pressure ulcers using of the validated tools and patient centered written care plans. Also ongoing skin assessment and risk

factors trigger adjustments in the patients by prevention plans is needed. Interventions include ensuring patient repositioning within at least every two hours; managing moisture; providing adequate nutrition and hydration; and minimizing friction and shear. Pressure redistribution surfaces and special heel protection devices may also be provided. An avoidable pressure ulcer can develop when the provider did not do one or more of the following: evaluate the individual's clinical condition and pressure ulcer risk factors; define and implement interventions consistent with individual needs, individual goals, and recognized standards of practice; monitor and evaluate the impact of the interventions; or revise the interventions as appropriate. An unavoidable pressure ulcer can develop even though the provider evaluated the individual's clinical condition and pressure ulcer risk factors; defined and implemented interventions consistent with individual needs, goals, and recognized standards of practice; monitored and evaluated the impact of the interventions; and revised the approaches as appropriate⁽¹²⁾.

Aim Of Study

Preventing pressure sores among bedridden patients by nurses (health care providers) as a safety issues at King Abdul Aziz University Hospital in Jeddah through;

- 1-Identify patient who at risk needing prevention.
- 2-Recognize factors affecting them .
- 3-Investigate the nurses' role in preventing the pressure sore

2. Subjects and Methods

Research design

Exploratory with randomized sampling was used at King Abdul-Aziz University Hospital. evaluate the effectiveness of prevention and management of pressure ulcers, as "a patient safety issues" among bed ridden Patients at King Abdul Aziz University Hospital in Jeddah, Saudi Arabia. Patients who undergoing medical and surgical treatment. These findings are reported here, and assess the relationship between the score of risk assessment scale at admission and the score after developing pressure sore after one week or more.

Setting

The study was conducted at King Abdul-Aziz University Hospital, from medical and surgical wards. The hospital is located at the Jeddah Governorate in Saudi Arabia.

Subjects

The subjects of this study consisted of a selected number of admitted patients who met the following criteria: both gender; bedridden and stayed more than one week at hospital. Examined for pressure sore within 2 days. Determination of sample size (40) who

were chosen from inpatient departments such as female medical unit, male medical unit and surgical unit . Group of nurses: the study was included staff nurses (40). They were working in the above mentioned setting at king Abdul-Aziz University Hospital. The sample size was estimated as convenience sample.

Ethical Consideration

The study was approved by the appropriate ethics committee. Patients were informed orally and in writing about the study by a member of the scientific team and gave written consent.

Tools Of Data Collection

Three modified tools for data collection were used. First one namely; Braden risk assessment scales (13) The aim of this tool is identifying the high risk patients . Second one namely: risk assessment tool. The main purpose of this tool is to assess newly admitted high risk patient for pressure ulcers on all patients. This tool divided into 2 main parts related to Socio-demographic data such as age, sex, level of conscious, length of staying in hospital, date of admission, level of activity, department-----etc. Second part is a process of care which provided to patient during hospitalization . The researcher recorded this process of care through medical record, patient's file, or any tool used by hospital. Third one namely: observational checklist used to investigate the nurses' role in preventing and management pressure ulcer.

Methods

1-A pilot study conducted on 10 of patients and 10 nurses to identify obstacles applicability and test it. It has also served in estimating the time needed for filling the forms. The purpose of pilot study was:

- 1- To test the applicability of the study tools.
- 2- To estimate any need for addition in the tool.

Otherwise, the ten patients and 10 nurses were then excluded from the sample of research work to assure the stability of answers.

2Performance measure

Performance measures were done by the researcher and used three tools two for patients another one for nurses .these tools selected on the review of the literature and pressure ulcer prevention guidelines. Data sources from the hospital; medical records from physicians or nurses or checklist developed by hospital. The researcher assess the following:1- identification of high risk patient (documentation as medical diagnosis);2- Braden risk assessment scale (13); 3- skin assessment in high risk patient. Use of a pressure-reducing device in bed (documentation that pressure-reducing mattress was placed under patient by nursing staff) 4- Repositioning the patient every two hours (documentation on each shift by nursing staff that repositioning occurred) 5-Nutritional consults in malnourished patients (documentation that nutritional consult was ordered by physician) 6. Number of

hospital-acquired Stage I pressure ulcers (documentation by physician or nursing staff). Last one observational checklist for nurses were observed by researcher during assessment and prevention which done for bedridden patients.

3 Statistical Design:

Collected data was arranged, tabulated and analyzed according to the type of each data.

Scoring system:

Scoring system was ranged from 1 to 3scores 1= for yes, 2= NO and 3 for not applicable.

Statistical analysis:

Data analysis:

Data was collected and entered into a database file. Statistical analysis was performed by using the SPSS 16 computer software statistical package. Data was described by summary tables. For comparing the (pre admission and after admission) with socio-demographic data, Chi-2 or Fisher Exact test was used. Statistical significance was considered at *P*-value <0.05 and highly significance at *P*-value <0.00.

Descriptive statistics:

Numbers and percentages: Used for describing and summarizing qualitative data.

The following statistical measures were used:

Chi square(X²):

Used to test the association between two qualitative variables or compared between two or more proportion.2.**Fisher exact test probability (FETp):**

They are used when X² is not valid (>20%of the expected cell have count less than 5).

3. Results

The high risk patients included in this study were 40 patients from medical and surgical units at King Abdul Aziz University Hospital. The age of the patients ranged from 14 to 90 years, (55.0%) are male; most of them (57.5%) admitted to medical unit, whereas (2.5%) admitted from assisting living; about (87.5 %) from emergency. Their period of time for developing bed sore were (62.5%) at range 5 to ≤ 10). A majority (60.0%) of the patients were complete dependent care, whereas 47.5 % were comatose patients, while (100%) was reported by researcher from the documentation in relation to item risk assessment tool includes a Braden Scale or modified Braden Scale score. Half (50%) of studied sample were not identified on admission as being at risk for pressure ulcer development, most (67.5%) of patients have developed bed sore after admission. Slightly above third of them (32.5%, 32.5%) respectively have first and second stages bed ulcer and only one case (2.5%) has developed third stages bed ulcer. All of the studied sample of nurses (67.5 %) were women, were single , their mean of age was **26.5 years** Min ¼ 20 Max ¼ 32, SD ¼ 2.9)above half of them (52.5%) have

experience year ranged from **(1-3) years** and had about all of them (100 %) nurses had a baccalaureate degree in nursing, who are providing care to patients.

Descriptive statistics for process of care for at-risk patients on admission and after one week or more as documented are shown in **Table (2)**. All of the patients (100%) haven't any consulted to wound team on admission while four only of them (10.0%) have consulted to wound team after developed bed ulcer, whereas 7.5% of bed ridden patients have skin inspected daily. Only five (12.5%) patients had massage for pressure areas. With regard to Patient repositioned every 2 hours, two third studied samples received change position, whereas only five bed ridden patient haven't got the same care. Majority of patients (65%) on admission they haven't pressure redistributing device in place within 24 hours of risk identification. 100% of the patients haven't any assessed for nutrition within 24 hours of risk identification by nurse on admission, whereas 10% of them nutrition were assessed after ulcer developed. Further, results showed that only two patients documented barrier cream applied if moisture issues identified as preventive measures on admission, whereas 57.5% of patients have barrier cream applied after developing bed ulcer. Regarding to the last point in the process of care, 100 % of patients were not notified of skin problem.

Table (3) presents relation between socio demographic data of patients and developing bed ulcer. Findings revealed that there is significant deference between period of time for developing bed ulcer and patient having bed sore at mean= 7.76 and $p= 0.021$ whereas there are highly significant differences in relation to Pt.'s Level of activity; Pt.'s level of consciousness; age and sex at $p= 0.000$, While there isn't significant differences between period of time for developing bed ulcer and degree of stages at $p= 0.064$.

Table (4) compare between process of care for high risk patients which recorded before developing bed ulcer and after developing ulcer, compares between the " Yes %" before and after for cases which having bed sore. Findings revealed that no one high risk patient has Consult to wound team as intervention measures before developed bed ulcer, while only four patients were received this intervention after developing bed ulcer. Most of them 69.2% recorded inspect skin daily after develop developing bed ulcer and there is highly significant differences was showed at $p= 0.000$. Twelve high risk patients repositioned every 2 hours and Pressure redistributing device in place within 24 hours of risk identification before developing bed ulcer while 80.8% high risk patient given the same care but after patients have bed sore and there is significant differences was noticed at $p= 0.000$. Reported 88.5% high risk patients have Barrier

Table (1): Descriptive statistics of Patients information

cream applied after patient 'condition become worse there is highly significant differences at $p= 0.000$.

Table (5) show observational checklist for the role of nurses in process of care for high risk patients. finding revealed that no one of studied nurses 100% done of those items during providing care for high risk patients as comprehensive skin assessment is performed within 24 hours of admission; keep the patient's skin dry; use mild clean agent to minimize dryness and irritation if used what it is; use absorbent under pad and topical agent which act as moisture barriers; don't elevate the high risk patient above 20 degree; turn and proper position to the patient at least every 2 hours; Nurse assess nutrition within 24 hours of risk identification; and Assess nutrition includes dietary consult. Furthermore The majority of all participating nurses rated 95 % nurses done in relation to Use blue sheet pad & foam matters(used specially for bed sores). While forty two percent nurses rated done for " Provide orders for special diet within 24 hours after risk identification." As well as two third nurses were not applicable in relation to Give the patient and family health education about preventive measures of bed ulcer, and Assess with family member who is caring for pt. the understanding and ability to perform skin care

4. Discussion

Prevention of pressure ulcer development risk assessment is recommended as the first step in the prevention of pressure on admission & must be re-assessed whenever there is a significant change in the patients' condition as mentioned by **Lindgren et al., Agency for Health Care Policy and Research & European Pressure Ulcer Advisory Panel (EPUAP)** (8, 10,14). This is approved with the present study as risk assessment help to identify patients who developed pressure ulcers & it is coincide with **Agency for Health Care Policy and Research** (15). In addition, **Rosenfeld** (3) explained that a majority of pressure ulcers began soon after admission particularly on patients days which also support the study finding. Also, findings of the Agency for Health care research & quality (AHRQ) revealed that number of hospitalized patients who developed pressure ulcers has increased by more than 80% from 1993 to 2006.

In respect to age, gender, risk factors and location and number of ulcers found. Our study have reported statistically significant differences between age as a risk factor & development of pressure sores as coincide with (8), recorded that the patients who developed pressure ulcers were significantly older than non-pressure ulcer patients.

Variable	No	%			
Diagnosis					
Brain stroke	5	12.5			
Cancer	13	32.5			
liver disease	5	12.5			
C. O.P.D	4	10.0			
Others	13	32.5			
Total	40	100.0			
Age (Intervals)	No	%			
(14-39)	6	15.0			
(40-59)	10	25.0			
(60-90)	24	60.0			
Total	40	100.0			
Age (values)	Mean	= 57.2			
	S.D.	= 19.2			
	Minimum	= 14			
	Maxima	= 90			
Sex	No	%			
Male	22	55.0			
Female	18	45.0			
Total	40	100.0			
Admitted to		No	%		
Medical		23	57.5		
Surgical		17	42.5		
Total		40	100.0		
Admitted from		No	%		
Emergency		35	87.5		
Home		4	10.0		
assisted living		1	2.5		
Total		40	100.0		
Period of time		No	%		
5 to ≤ 10)		25	62.5		
<10-15)		6	15.0		
(> 15)		9	22.5		
Total		40	100.0		
Pt.'s Level of activity		No	%		
Mobile		0	0		
Complete dependent		24	60.0		
Assistant		16	40.0		
Total		40	100.0		
Pt.'s level of consciousness		No	%		
Consciousness		10	25.0		
Comatose		19	47.5		
Confused		11	27.5		
Total		40	100.0		
Does the risk assessment tool includes a Braden Scale or modified Braden Scale score.	No.	%	No.	%	Total
	yes		No		
	40	100.0	0	00.0	40
patient identified on admission as being at risk for pressure ulcer development.	No.	%	No.	%	Total
	yes		No		
	20	50.0	20	50.0	40
Patients have bed sore.	27	67.5	13	32.5	40
Degree of stages			No	%	
Free			13	32.5	
1 st stage			13	32.5	
2 nd stages			13	32.5	
3 rd stages			1	2.5	
4 th stages			0	0.00	
Total			40	100.0	

Table (2) Describe statistics for process of care for at-risk patients on admission and after one week or more after admission as recorded in patient's records. (.N= 40)

No	Items	For at-risk patients : on admission				After one week or more after admission					
		Yes		No		Yes		No		Cases not developed bed sore	
		No	%	No	%	No	%	No	%	No	%
1	Consult to wound team.	0	0	40	100	4	10.0	22	55.0	14	35.0
2	Skin inspected daily.	3	7.5	37	92.5	18	45.0	8	20.0	14	35.0
3	Massage for pressure areas.	5	12.5	35	87.5	8	20.0	18	45.0	14	35.0
4	Patient repositioned every 2 hours or "up ad lib".	17	42.5	23	57.5	21	52.5	5	12.5	14	35.0
5	Pressure redistributing device in place within 24 hours of risk identification.	14	35.0	26	65.0	21	52.5	5	12.5	14	35.0
6	Nurse assess nutrition within 24 hours of risk identification.(type of food).	0	0	40	100	4	10.0	22	55.0	14	35.0
7	Nurse Provided orders special diet within 24 hours of risk identification.	0	0	40	100	4	10.0	22	55.0	14	35.0
8	Barrier cream applied if moisture issues identified.	2	5.0	38	95.0	23	57.5	3	7.5	14	35.0
9	Patient and family notified of skin problem.	0	0	40	100	0	0	26	65.0	14	35.0

No	Items	Yes		No	
		No	%	No	%
G	Nurse assessed nutrition includes dietary consult.	0	0	40	100
H	Nurse recorded in assessment sheet admit and weekly weight.	0	0	40	100

Wound care

No	Items	Yes		No		Cases not developed bed sore	
		No	%	No	%	No	%
A	Provider order for wound care on the chart within 24 hours of notification.	20	50.0	6	15.0	14	35.0
B	Wound care implemented as ordered.	22	55.0	4	10.0	14	35.0
C	Pressure ulcer assessed for healing, / worsening as ordered.	22	55.0	4	10.0	14	35.0

III- Third Part:

After one week or more after admission:

No	Items	Yes		No		Not having bed ulcer	
		No	%	No	%	No	%
1	Consult to wound team.	4	10.0	22	55.0	14	35.0
2	Skin inspected daily.	18	45.0	8	20.0	14	35.0
3	Massage for pressure areas.	8	20.0	18	45.0	14	35.0
4	Patient repositioned every 2 hours or "up ad lib".	21	52.5	5	12.5	14	35.0
5	Pressure redistributing device in place within 24 hours of risk identification.	21	52.5	5	12.5	14	35.0
6	Nurse assess nutrition within 24 hours of risk identification.(type of food).	4	10.0	22	55.0	14	35.0
7	Nurse Provided orders special diet within 24 hours of risk identification.	4	10.0	22	55.0	14	35.0
8	Barrier cream applied if moisture issues identified.	23	57.5	3	7.5	14	35.0
9	Patient and family notified of skin problem.	0	0	26	65.0	14	35.0

Wound care

No	Items	Yes		No		Missing	
		nb	%	nb	%	nb	%
A	Provider order for wound care on the chart within 24 hours of notification.	20	50.0	6	15.0	14	35.0
B	Wound care implemented as ordered.	22	55.0	4	10.0	14	35.0
C	Pressure ulcer assessed for healing, / worsening as ordered.	22	55.0	4	10.0	14	35.0

Table 3. Presents relation between socio demographic data of patients and developing bed ulcer

Relation between	χ^2	d.f	(p-value)	Contingency coefficient	(p-value)
Period of time. and Patient having bed sore.	7.76	2	0.021	0.403	0.021
Period of time. and Degree of stages.	11.93	6	0.064	0.479	0.064
Pt.'s Level of activity. and Patient having bed sore.	24.69	2	0.000	0.618	*** 0.000
Pt.'s Level of activity and Degree of stages.	26.46	6	0.000	0.631	*** 0.000
Pt.'s level of consciousness. and Patient having bed sore.	21.50	2	0.000	0.591	*** 0.000
Pt.'s level of consciousness. and Degree of stages.	22.86	6	0.001	0.603	*** 0.000
Age (interval) and Patient having bed sore.	11.62	2	0.003	0.475	** 0.003
Age (interval) and Degree of stages.	12.51	6	0.050	0.488	0.050

If the p-value is more than 0.05 this means that there is no significant relation, but if the p-value 0.05 or less this means that there is a significant relation.

Table 4. Compare between process of care for high risk patients which recorded before developing bed ulcer and after developing ulcer , compares between the " Yes %" before and after for cases which having bed sore.

No	Items	Yes				z	(p-value)
		before		after			
		No	%	No	%		
1	Consult to wound team.	0	0.0	4	15.4	*	*
2	Skin inspected daily.	3	11.5	18	69.2	4.24	*** 0.000
3	Massage for pressure areas.	3	11.5	8	30.8	1.68	* 0.047
4	Patient repositioned every 2 hours or "up ad lib".	12	46.2	21	80.8	2.58	* 0.005
5	Pressure redistributing device in place within 24 hours of risk identification.	11	42.3	21	80.8	2.85	*** 0.002
6	Nurse assess nutrition within 24 hours of risk identification.(type of food).	0	0.0	4	15.4	*	*
7	Nurse Provided orders special diet within 24 hours of risk identification.	0	0.0	4	15.4	*	*
8	Barrier cream applied if moisture issues identified.	2	7.7	23	88.5	5.81	*** 0.000
9	Patient and family notified of skin problem.	0	0.0	0	0.0	*	*

p-value is less than 0.05 which means that is significant difference.

Nurse's Observational checklist Tool Table

Variable	Results	Variable	Results
Unit	n % FS = 8 20.0 MS = 8 20.0 FM = 18 45.0 MM = 6 15.0	Marital status	n % Single 27 67.5 Married 13 32.5
Age (values)	Years Mean = 26.5 S.d. = 2.9 Minimum = 20 Maxima = 32	Age (Intervals)	Years n % (20-24) 11 27.5 (25-28) 18 45.0 (29-32) 11 27.5
Experience (values)	Years Mean = 3.7 S.d. = 2.2 Minimum = 1 Maxima = 10	Experience(Intervals)	Years n % (1-3) 21 52.5 (4-6) 15 37.5 (7-10) 4 10.0

Table (5) show observational checklist for the role of nurses in process of care for high risk patients

No	Items	Don		Not done		Not applicable	
		n	%	n	%	n	%
1	Comprehensive skin assessment is performed within 24 hours of admission. Degree of bed sores (1 st , or 2 nd or 3 rd).	0	0	40	100	0	0
2	Keep the patient's skin dry.	0	0	40	100	0	0
3	Use mild clean agent to minimize dryness and irritation if used what it is.	0	0	40	100	0	0
4	Use absorbent under pad and topical agent which act as moisture barriers.	0	0	40	100	0	0
5	Apply appropriate dressing using clean technique.	3	7.5	37	92.5	0	0
6	Use blue sheet pad & foam matters(used specially for bed sores).	38	95.0	2	5.0	0	0
7	Clean the patient who incontinent (urine & feces) frequently.	9	22.5	31	77.5	0	0
8	Massaging bony prominences areas	5	12.5	35	87.5	0	0
9	Don't elevate the high risk patient above 20 degree.	0	0	40	100	0	0
10	Keep the linen dry and wrinkled free.	5	12.5	35	87.5	0	0
11	Turn and proper position to the patient at least every 2 hours	0	0	40	100	0	0
12	Nurse assess nutrition within 24 hours of risk identification	0	0	40	100	0	0
13	Assess nutrition includes dietary consult	0	0	40	100	0	0
14	Provide orders for special diet within 24 hours after risk identification.	17	42.5	23	57.5	0	0
15	Record in assessment sheet and weekly weight.	1	2.5	39	97.5	0	0
16	Give the patient and family health education about preventive measures of bed ulcer	0	0	10	25.0	30	75.0
17	Assess with family member who is caring for pt. the understanding and ability to perform skin care	0	0	10	25.0	30	75.0

On the other hand, ⁽³⁾ reported that pressure ulcer may impact patients in homes, hospitals, assisted living facilities or even people with limited mobility who are living at home. Also, he added that pressure ulcer remain such a common problem impacting patients in all demographics that is supporting finding of present study regards percentage distribution of number of pts developed pressure ulcers at medical & surgical wards at king Abdul- Aziz university hospital.

Whereas there are highly significant differences in relation to Pt.'s Level of activity; Pt.'s level of consciousness; age and sex. While there isn't significant differences between period of time for developing bed ulcer and degree of pressure ulcers. It is important to realize the relation between development of pressure ulcers and the previous mentioned factors of: (Pt.'s Level of activity; Pt.'s level of consciousness; age). This coincide with ⁽⁸⁾ who reported that more patient. More patients who had epidural/spinal analgesia developed pressure ulcers than those who had general anesthesia. This may be explained by their greater age and the fact that they were suffering from diseases affecting their mobility greater than patients having general anaesthesia, leading to prolonged periods of immobilization. In order to provide care for patients who developed pressure ulcers, ⁽¹⁶⁾ emphasized the beneficial of performing regular inspection of the skin especially over bony prominences. Also observe for signs of pressure (changes in skin color [i.e., reddish, or purplish hue], or change in skin temperature [either warmer or cooler] compared to surrounding skin, or change in skin texture such as boggiess or in duration continue to monitor until skin change resolves or notify a health care professional if it does not resolve. However, in the present study all of the patients haven't any consulted to wound team on admission

while four only of them have consulted to wound team after developed bed ulcer. It is found significance difference nursing care provided by nurses and patients' that developed on admission & after 10 days. This finding supported with Rosenfeld (2008) Bed sores can be prevented by conducting daily skin inspections (especially for at risk patients), using pressure reducing mattresses, pressure-release wheelchairs, frequent position changes, minimizing friction, and healthy diet.

Although, the importance of instruction provided by ^(8,14,17) regard nutrition to offer individuals with nutritional and pressure ulcer risks a minimum of 30-35 kcal per kg body weight per day with 1.25-1.5 g/kg/day protein and 1 ml of fluid intake per kcal per day. Also, consult a dietician and correct nutritional deficiencies. Increase protein and calorie intake and A, C, or E vitamin supplements as needed⁽¹⁸⁾. The present study had no any assessment through documentation on admission or consultation to dietary team.

Regarding to grad of pressure ulcer the finding revealed that most of patients have developed bed sore after admission, one third of them have first and second stages pressure ulcer and only one case has third stages pressure ulcer. This findings agreed with ⁽⁸⁾ Eight ulcers (14.5%) progressed during the observation period. These included seven grade I ulcers: five to grade II, one to a grade III, and one to grade IV; one pressure ulcer grade III progressed to grade IV. Thirty ulcers healed during the observation period, and one patient with a grade II ulcer died

Regards, skin daily after developing bed ulcer and there is highly significant differences was showed; repositioned every 2 hours; Pressure redistributing device in place within 24 hours of risk identification before developing bed ulcer and Barrier cream applied after patient 'condition become worse there was highly significant while the same care was given but after

patients have bed ulcer significant differences was noticed, differences. This results similar with by ⁽³⁾, who found that prevention is key because decubitus ulcers are easier to prevent than to treat, and it avoid putting the patient in unnecessary pain and discomfort in addition to being put at risk for serious health complications such as sepsis and even death.

As regards nurses who provide care,. Finding revealed that no one of studied nurses providing care for high risk patients as comprehensive skin assessment is performed within 24 hours of admission; keep the patient's skin dry; use mild clean agent to minimize dryness and irritation if used what it is; use absorbent under pad and topical agent which act as moisture barriers; don't elevate the high risk patient above 20 degree; turn and proper position to the patient at least every 2 hours; Nurse assess nutrition within 24 hours of risk identification; and Assess nutrition includes dietary consult. This finding congruent with ⁽¹²⁾, who stated that most pressure ⁽¹²⁾ most Pressure Ulcers are avoidable; not all Pressure Ulcers are avoidable; there are situations that render Pressure Ulcers development unavoidable, including hemodynamic instability that is worsened with physical movement and inability to maintain nutrition and hydration status and the presence of an advanced directive prohibiting artificial nutrition/hydration; pressure identify the limits of prevention.

Furthermore the majority of all participating nurses were providing care to use blue sheet pad & foam matters(used specially for bed sores). While minimum percent nurses rated for " Provide orders for special diet within 24 hours after risk identification." As well as most of nurses were not applicable in about Given the patient and family health education about preventive measures of bed ulcer, and Assess with family member who is caring for pt. the understanding and ability to perform skin care. This findings are coincides with ⁽¹⁹⁾ It is commonly accepted that the majority of pressure caused by unrelieved external pressure are preventable. In spite of this knowledge, the prevalence of pressure ulcers worldwide remains unacceptably high. Lack of nursing care, in particular, is still seen as one of the primary causes for their development. Pressure ulcers are increasingly used as an indicator of the quality of care.

Conclusions and Recommendations

The study concluded that prevalence of pressure sores are developing at factors such as immobility, over weight and mental status among bed ridden patients as well as majority of participating nurses were providing care to use blue sheet pad & foam matters(used specially for bed sores). While minimum percent nurses rated for " provide orders for special diet within 24 hours after risk identification." As well as most of nurses were not applicable in about given the patient

and family health education about preventive measures of bed ulcer, and assess with family member who is caring for patients, understanding and ability to perform skin care. The educational program for prevention of pressure ulcers should be implemented through evaluating nurses' effectiveness in preventing pressure ulcers as quality assurance standards. In the light of the study findings, the authors recommend the following:

1. Empowering staff nurses to provide preventive pressure ulcer care by identifying risk assessment.
2. Planning staff development programs based on staff, organization, and patient needs.
3. 3- Monitoring the process to conduct assessment of all new admissions to determine who is susceptible to develop of pressure sores.
4. Health care providers should be functioning as a team, the incidence rates of pressure ulcers can decrease. Thus, pressure ulcers and their prevention implementation considered as important goal to provided as safety measures in patient care.

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