

Protocol of nursing care for early detection and prevention of pressure ulcer among critically ill patients

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OBJECTIVES

Pressure ulcers are a common problem across all health care settings and the incidence is one of the quality signs of health centers. The main interventions for pressure ulcer prevention are assessing risk for pressure ulcers, turning and positioning, use of moisture barriers and skin protection, use of specialty beds, nutrition screening, managing incontinence and initiating skin care. The protocol of nursing care provides the intensive care unit staff with a decision-making structure that allows immediate response to patients identified as at high risk for pressure ulcers.

METHODS

Assessment was done for all patients in control and study group to collect baseline data, the protocol of care which include; risk assessment documentation, preventive measures, and interventions Linked to Braden Risk Scores was carried out for each patient in the study group starting from the first day to 15th day of admission for prevention and early detection of critically ill patients who were at risk for ulcer development. Finally, each critically ill patient in both study and control group was reassessed and evaluated for three consecutive periods; 1st, 7th, and 15th day of admission.

Tools of the Study

Tool I: Critically Ill Patient's Assessment tool to assess presence of comorbid diseases, infection, vaso-pressor medications, intubation, condition of bowel and bladder, body weight, body mass index, type of feeding, albumin level, level of consciousness, level of mobility and skin assessment
Tool II: Braden Scale Risk Assessment which consists of six factors used to determine patients at risk for pressure ulcer development
Tool III: Ulcer development observational checklist: used to determine pressure ulcer development and include stages, location, and time of ulcer development

Distribution of studied groups of critically ill patients in relation to severity of Braden scale at 1st, 7th and 15th day of admission.

Severity of Braden scale	Control group (n=20)			Study group (n=20)			χ^2 P		
	1 st day	7 th day	15 th day	1 st day	7 th day	15 th day	1 st day	7 th day	15 th day
	%	%	%	%	%	%	%	%	%
15-18 "mild Risk"	0	5	10	0	0	25	12.0 26 0.00 2*	11.66 70.00 9*	27.28 6 0.000 *
13-14 "moderate Risk"	25	20	0	0	0	65			
10-12 "high Risk"	55	50	20	30	25	0			
9 or less "very high Risk"	20	25	70	70	75	10			

RESULTS

Distribution of items of Braden Scale among the studied sample along the period of the study

Items of Braden scale	Control group (n=20)			Study group (n=20)			χ^2 P			
	1 st day	7 th day	15 th day	1 st day	7 th day	15 th day	1 st day	7 th day	15 th day	
	%	%	%	%	%	%	%	%	%	
1. Sensory perception	Completely limited	70	75	75	95	90	20	4.758 0.190	2.073 0.355	17.599 0.001*
	Very limited	10	5	10	0	5	55			
	Slightly limited	5	0	0	0	0	20			
	No impairment	15	20	15	5	5	5			
2. Moisture	Constantly moist	0	35	30	60	45	5	21.00 0.000*	1.679 0.642	25.865 0.000*
	Very moist	10	25	35	10	25	5			
	Occasionally moist	40	25	30	0	10	5			
	Rarely moist	50	15	5	30	20	85			
3. Physical activity	Bed fast	75	85	90	100	70	55	5.714 0.017*	1.290 0.256	6.144 0.013*
	Chair fast	25	15	10	0	30	45			
4. Mobility	Completely immobile	75	80	80	95	50	20	3.471 0.176	6.154 0.046*	14.450 0.001*
	Very limited	15	15	15	5	50	65			
	Slightly limited	10	5	5	0	0	15			
5. Nutrition	Very poor	10	45	25	75	15	5	19.084 0.000*	7.513 0.023*	22.733 0.000*
	Probably inadequate	70	45	65	10	40	10			
	Adequate	20	10	10	15	45	70			
	Excellent	0	0	0	0	0	15			
6. Friction and shear problems	Need maximum assistance for moving	95	90	95	100	90	100	1.026 0.311	0.000 1.000	1.026 0.311
	Need minimal assistance for moving	5	10	5	0	10	0			

Correlation between age and total score of Braden scale among the studied groups

Severity of Braden scale		Control group (n=3)				Study group (n=17)			
		<40 (n=3)		>40 (n=17)		<40 (n=4)		>40 (n=16)	
		N	%	N	%	N	%	N	%
15-18 "mild Risk"	1 st day	0	0	0	0	0	0	0	0
	7 th day	1	33.3	1	5.9	0	0	0	0
	15 th day	1	33.3	1	5.9	2	50	3	18.8
13-14 "Moderate Risk"	1 st day	2	66.7	3	17.6	0	0	0	0
	7 th day	0	0	1	5.9	0	0	0	0
	15 th day	0	0	0	0	2	50	11	68.8
10-12 "High Risk"	1 st day	0	0	11	64.7	1	25	5	80
	7 th day	1	33.3	5	29.4	1	25	4	25
	15 th day	1	33.3	3	17.6	0	0	0	0
9 or less "Very high Risk"	1 st day	1	33.3	3	17.6	3	75	11	68.8
	7 th day	1	33.3	10	58.8	3	75	12	75
	15 th day	1	33.3	13	76.5	0	0	2	12.5
χ^2 P	1 st day	4.706				0.060			
	7 th day	0.095				0.807			
χ^2 P	7 th day	2.412				0.000			
	15 th day	0.491				1.000			
χ^2 P	15 th day	2.913				1.923			
		0.233				0.382			

CONCLUSIONS

The pressure ulcer risk assessment using the Braden's scale proven that most of ICU patients are at high risk for developing PU.

Pressure ulcer prevention is an important part of nursing care in ICUs. Lack of knowledge, severity of patient's condition, and absence of strict policy serve as barriers towards performing PU prevention.

Developing periodic interventions for ICUs nurses regarding PU prevention is vital. Policy and procedures that support continuous assessment, early detection of high risk patients and evaluation are also required.

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