



ASSESSMENT OF THE RISK OF DECUBITUS ULCERS USING BRADEN SCALE

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ABSTRACT:

Purpose: Within the behavioral guidelines of hospitalized patients who need compensatory nursing care, an assessment of the risk of decubitus ulcers is recommended to be done at regular intervals, in schedule, and after each altered state. The goal of this research is to apply the BRADEN SCALE for assessment of the risk of decubitus ulcers occurring during a hygienic toilet in sick people who need compensatory nursing care.

Material/Methods: An assessment of the risk of decubitus ulcers via using the Braden scale is applied in 120 hospitalized patients during a hygienic toilet. Treatment of decubitus ulcers I and II degree is being performed when the state of the skin and wounds that have already occurred are being established. For processing, analysis and graphic presentation of the results and data, the statistic program SPSS 20.0 is being used.

Results: It's reported that 50, 83% of the respondents have got quite a risk of decubitus wounds occurring, 26,67% are at great risk, and 14,17% are at moderate risk. Only 8, 33% of all patients tested are at light risk.

Conclusions: In all patients tested, a various degree of decubitus wounds occurrence, is reported. This defines the importance of the nurses' hygienic care and activities for the prevention of decubitus ulcers to occur. If the prevention measures of patients who have gotten in a risk group are not observed, every decubitus wound leads to a continuous stay in the hospital and also additional treatment and tests, which automatically prolong and raise the cost of hospital treatment.

Keyword: Assessment of risk of decubitus wound, Decubitus ulcer, Pressure ulcer, Pressure sore, Decubitus, Dry bathing, Nurse, Braden scale,

INTRODUCTION

The health care of patients who are unable to look after themselves is of significant importance for the overall health process. The complications that arise due to poor hygiene of patients and not observing the preventive measures lead to decubitus wounds occurrence. Each complication prolongs the hospital stay, makes the treatment more expensive, and worsens the patients' health. One of the multiple criteria for health care quality is namely the non-admission of decubitus wounds to occur [1, 2].

A decubitus wound (decubitus, or decubitus ulcer), according to the definition of the American national decubitus consultative commission and the European decubitus consultative commission (NPUAP-EPUAP), is localized skin damage and/or its underlying tissues that most frequently occurs in body areas with less subcutaneous tissue and presence of bone protrusions, as a result of loss of stability or abrasion, or tearing of the skin in areas with abnormally high pressure, or a combination of high pressure and straining. The inspection and assessment of the skin and risk areas (pressure areas), such as heels, scapulae, sacrum, trochanters, elbows and head, is recommended to be done at least once a day. The use of a delicate cleaning agent is desirable, without excessive friction and hot water, and the use of hydrating or antiseptic lotion after bath. No massage on bone protrusions should be performed. The frequency of full or partial bathing must be regarded according to the individual needs and based on the assessment of risk. Avertible environmental risk factors leading to dry skin are cold air and low humidity. Provided that the creation of a program for the depletion of pelvis reservoirs in patients with incontinence does not lead to good control, then absorbent pads and/or diapers that provide quick drying must be used in order to maintain the skin [3].

The patients forced to lie down are liable to change the pose at least every two hours, whereas for those who are chained to their wheel-chair, their pose needs to be changed every hour.

Those sitting on a chair who can change their weight center need to be doing it every 15 minutes. The nurse is obliged to follow this and remind her patients about it. It's appropriate for the change of the pressure point to be done in an individual plan, pre-prepared by the nurse.

The nutrition and hydration need to be consistent with the patient's state, and if necessary, to switch to increased caloric intake, food additives and vitamin and mineral complex. The assessment of nutrition is also made by the nurse, which is based on the initial bodyweight of the patient, the food quality and amount, and the trends of body weight changes.

The preventive care of patients at risk include skin care, proper nutrition, changing the pose of the body, care of the patients' bed, the use of proper help devices – anti-decubitus mattress, pillows, etc.

EPUAP, in its behavioral guidelines of decubitus, recommends the assessment of all the patients at the most risk who have gone to a hospital, to be done at regular intervals, in schedule, and after each altered state. This schedule must be consistent with the patient's individual state and organization of hospital care. In acute states, an initial assessment and pre-assessment at least every 24 hours is recommended, or earlier, if there's a change in the patient's state. For those patients who need long-term care after the initial assessment, it's assessed every week within a month, then after 3 months and every time when the patient's state changes [3].

Maintaining skin hygiene is part of the basic nursing care of the patients, who are dependent on compensatory care. The traditional bath with soap and water in the patient's bed causes many inconveniences for both the nurse and the patients themselves. By applying the products for dry bathing, this leads to significant hydration of the skin, revulsion is achieved, and a decrease of pathogenic microorganisms [4, 5].

In order to assess the risk of decubitus ulcers to occur, many European countries use established methodologies, which are proven effective. A minimum number of scientific researches by Bulgarian authors are found from the reviewed publications. In one report, B. Velikova examines the nurse' role in the treatment and prevention of decubitus wounds [6]. Gr. Koleva and D. Georgieva present the importance of assessment of the risk of decubitus via applying the Waterlow scale [7].

The goal of this study is to apply the Braden scale for assessment of the risk of decubitus occurrence during a hygienic toilet to patients who need compensatory nursing care.

MATERIALS AND METHODS:

Results from applying the BRADEN SCALE are being presented in the current scientific report – for assessment of the risk of decubitus occurrence. The scale is standardized and widely used around the world for assessing the risk of decubitus occurrence. The authors have translated it from English to Bulgarian for the goals of the study, whilst they have preserved the original layout of the document. The scale contains six indices: sensor perception; humidity; activity; mobility; food; friction, and lifting. The scale is individual for each patient, and the results from the assessment are registered in a table like points. The total number of points from the pointed indices define the degree of risk, respectively: very high risk <9 points; high risk – 10-12 points; moderate risk – 13-14 points; and low risk – 15-18 points [8].

The experimental deed is held in: Ward of Orthopedics and traumatology; Ward of vascular neurology; Ward of intensive treatment of therapeutic diseases; and Ward of intensive treatment of surgical diseases in the University Hospital Kanev Ltd in Ruse, Bulgaria after written permission from the Principal of the hospital, to perform this research.

The research is being held in the months between May and November 2019. Braden scale is applied on 120

patients with pre-defined criteria of patient selection, which include: hospitalization continuity – more than 48 hours; a state which requires compensatory care; requested and written informed consent for being included in this research.

The informed consent called Hygienic toilet of a patient by the method of dry bathing and assessment of the risk of decubitus occurrence was prepared in accordance with the European ethical codex for the integrity of the scientific reports, and the Law of personal data protection, amended by State gazette, Issue 17 from 26. February 2019.

During the hygienic toilet, an assessment of the risk of decubitus by using the Braden scale is accomplished on all 120 patients. The envisaged experimental activity from the part of dry bathing is achieved with the products of TENA from the series of dry bathing and ZHIVASEPT Gluconate, containing CHG 0,6%, manufactured by Zhivas Ltd-Sofia, and an assessment of the risk of decubitus occurrence is being performed by using a standardized Braden scale. After defining the level of decubitus risk, the necessary protective measures and activities are launched for averting it. Treatment of decubitus wounds I and II degree is performed while assessing the state of the skin and discovered decubitus wounds that have already occurred, and maceration of the skin, and is also performed in the areas that show maceration on the skin. For processing, analysis, and graphic presentation of the results and data, the statistic program SPSS 20.0 is being used – a powerful and contemporary software used in various scientific fields [9-11].

RESULTS:

54 male and 66 female patients are being included in the experimental group. The hospitalized patients are at a predominant age over 60 years old, and the relative share of the seriously ill ones aged 70-80 years old is the highest – 32,50% and 25% of them are over 80 years old.

The adults and elderly people are the predominant part of the tested patients, who are dependent on compensatory nursing care.

An assessment of the risk of decubitus by using the Braden scale is performed on 66,33% (76n) of the tested patients who are being hospitalized in the surgical wards - Ward of Orthopedics and traumatology, and Ward of intensive treatment of surgical diseases. The remaining 36,67% (44n) are being hospitalized in the therapeutic wards - Ward of vascular neurology and Ward of intensive treatment of therapeutic diseases.

The hospitalization continuity has a direct bearing on the risk of decubitus wounds occurrence (table 1).

Table 1. Hospitalization day in the ward

Hospitalization day					
		Frequency (n)	Percent	Valid Percent	Cumulative Percent
Valid	Till day 5 of hospitalization	62	51,67	51,67	51,67
	Till day 10 of hospitalization	44	36,67	36,67	88,33
	Till day 15 of hospitalization	11	9,17	9,17	97,5
	More than 15 days of hospitalization	3	2,5	2,5	100
	Total	120	100	100	

The greatest relative part (51,67%) of patients included in the experimental group has been hospitalized for up to 5 days only after assessing the risk of decubitus occurrence on them. Quite small is the share of pa-

tients (2,5%) who have been hospitalized for over 15 days.

The results of the assessments by BRADEN SCALE obtained are shown in Table 2.

Table 2. Results of the assessment of the risk of decubitus occurrence/BRADEN SCALE

BRADEN SCALE – For Predicting Sore Pressure Risk					
		Frequency (n)	Percent	Valid Percent	Cumulative Percent
Valid	Mild risk: Total score 15-18	10	8,33	8,33	8,33
	Moderate risk: Total score 13-14	17	14,17	14,17	22,5
	High risk: Total score 10-12	32	26,67	26,67	49,17
	Severe risk: Total score ≤ 9	61	50,83	50,83	100
	Total	120	100	100	

After applying the Braden scale and assessing the patients on the pre-defined indices and criteria in the scale, it's reported that 50,83% (61n) of the respondents are at very high risk of decubitus, 26,67% (32n) are at high risk,

and 14,17% (17n) are at moderate risk. Only 8,33% (10n) of the tested patients are at lighter risk.

Correlation analysis was performed (table 3).

Table 3. Correlation analysis

Ranks				
Braden scale	Ward	N	Mean Rank	Sum of Ranks
	Ward of treatment of surgical diseases	76	54,69737	4157
	Ward of treatment of therapeutic diseases	44	70,52273	3103
	Total	120		

Correlations					
		Braden scale	Day of hospitalization	Ward	Age
Braden scale	Pearson Correlation	1	-0,08	0,164	,291**
	Sig. (2-tailed)		0,387	0,074	0,001
	N	120	120	120	120
Day of hospitalization	Pearson Correlation	-0,08	1	-,356**	,198*
	Sig. (2-tailed)	0,387		0	0,03
	N	120	120	120	120
Ward	Pearson Correlation	0,164	-,356**	1	-0,17
	Sig. (2-tailed)	0,074	0		0,063
	N	120	120	120	120

Age	Pearson Correlation	,291**	,198*	-0,17	1
	Sig. (2-tailed)	0,001	0,03	0,063	
	N	120	120	120	120
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

A statistically important connection (Sig. =0,001<a=0,05) between the patients' age and risk of decubitus and between the hospitalization continuity and the risk of decubitus occurrence (P=95%) is being reported.

DISCUSSION:

Preventing pressure ulcers is one of the most challenging goals existing for today's nurses. Currently used tools that assess the risk of pressure ulcer development rarely evaluate the accuracy of predictability, especially in older adults [12]. It's clear from the research that a great part of the patients who need compensatory care are adults and elderly people, whose rehabilitation health period is longer and bound by additional complexities, which are common for geriatric patients. Pressure ulcers occur in people who are immobilized or lack sensation, most often seen in association with spinal cord injury, other neurologic dysfunction, or hospitalization [13]

The use of a multipronged approach to prevent healthcare-associated pressure injuries in the surgical population includes assessment of risk, implementation of evi-

dence-based prevention interventions for at-risk patients, and continuation of prevention beyond the perioperative setting to the nursing care unit [14].

The overall knowledge of nurses on PI prevention was lower than the recommended level (60%). Regular training courses and review of pressure injury prevention guidelines can be useful in updating the knowledge of nurses, especially assistant nurses and nursing students, on pressure injury prevention [15].

CONCLUSIONS:

The accomplished co-relational analysis shows that the elderly patients are much more threatened from decubitus occurrence, and also that extended hospitalization leads to a higher risk of decubitus.

In all patients tested, a various degree of decubitus wounds occurrence is reported. This defines the importance of the nurses' hygienic care and activities for the prevention of decubitus wounds to occur. If the prevention measures of patients who have gotten in a risk group are not observed, every decubitus wound leads to continuous.

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