

Pre and Post Intervention Knowledge and Confidence Survey

Title: A Randomized Controlled Trial on the Application of Artificial Intelligence (AI) in Skin Assessment for Pressure Injury Prevention and Staging by Critical Care Nurses

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The Use of Artificial Intelligence (AI) for Skin Assessment for Pressure Injury Prevention by Critical Care Nurses: A Randomized Controlled Trial- Pre Intervention

Dear Participant

As part of an important IRB approved research study on the use of Artificial Intelligence (AI) for skin assessment and pressure injury prevention in critical care, we invite you to participate in completing a pre-intervention survey. This survey is a vital part of our research and will help us gather essential baseline information regarding your experiences and perspectives before the intervention.

The purpose of this survey is to gather your thoughts and insights regarding skin assessments and pressure injury prevention in your current healthcare setting. Your responses will help us better understand the challenges and opportunities that exist before introducing AI-based tools in clinical practice.

By completing this survey, you will be contributing to a critical study that aims to improve patient outcomes and nursing practices in the prevention of pressure injuries in the critical care environment. Your feedback will help shape the development and application of AI technology in healthcare.

The survey will take approximately 10-15 minutes to complete. It includes questions about your current approach to pressure injury prevention, your confidence in the process, and your general experiences in caring for at-risk patients.

Please submit your responses by completing the survey below. Participation is voluntary, and all responses will be kept confidential and used solely for the purpose of this study.

If you have any questions or need further clarification, please do not hesitate to contact us at 50190/ 41277

Thank you for considering this important contribution to the study. Your input is invaluable to our research and the future of patient care.

Do you agree to participate in this study?

- Yes
- No

What is your gender ?

- Male
- Female

What is your age?

Please avoid using your date of birth.

What is your highest educational qualification?

- Diploma in Nursing
- Bachelors in nursing
- Masters in nursing
- Post graduate diploma
- Other

What is your work title?

- Staff Nurse 1
- Nurse Clinician
- Assistant Head Nurse

How many years of experience do you have as a registered nurse?

How many years of experience do you have within the ICU setting ?

Are you ICU trained ?

- Yes
- No

Did you attend the HAPI workshop?	<input type="radio"/> Yes <input type="radio"/> No
Do you have any other educational training for skin assessment other than the HAPI workshop?	<input type="radio"/> Yes <input type="radio"/> No
If you answered yes to the question above, please indicate the name of the training completed.	
Which statement is correct?	<input type="radio"/> Malnutrition causes pressure ulcers. <input type="radio"/> A lack of oxygen causes pressure ulcers <input type="radio"/> Moisture causes pressure ulcers
Extremely thin patients are more at risk of developing a pressure ulcer than obese patients	<input type="radio"/> The contact area involved is small and thus the amount of pressure is higher. <input type="radio"/> The pressure is less extensive because the body weight of those patients is lower than the body weight of obese patient. <input type="radio"/> The risk of a vascular disorder is higher for obese patients. This increases the risk of developing a pressure ulcer.
What happens when a patient, sitting in bed in a semi-upright (60 degree) position, slides down?	<input type="radio"/> Pressure increases when the skin sticks to the surface. <input type="radio"/> Friction increases when the skin sticks to the surface. <input type="radio"/> Shearing increases when the skin sticks to the surface
Which statement is correct?	<input type="radio"/> Soap can dehydrate skin and thus the risk of pressure ulcers is increased. <input type="radio"/> Moisture from urine, feces, or wound drainage causes pressure ulcers. <input type="radio"/> Shear is the force which occurs when the body slides and the skin sticks to the surface.
Which statement is correct?	<input type="radio"/> Recent weight loss which has brought a patient below his/her ideal weight, increases the risk of pressure ulcers. <input type="radio"/> Very obese patients using medication decreases the peripheral blood circulation are not at risk of developing pressure ulcers. <input type="radio"/> Poor nutrition and age have no impact on tissue tolerance when the patient has a normal weight.
There is NO relationship between pressure ulcer risk and:	<input type="radio"/> Age <input type="radio"/> Dehydration <input type="radio"/> Hypertension
Which statement is correct?	<input type="radio"/> A pressure ulcer extending down to the fascia is a grade 3 pressure ulcer. <input type="radio"/> A pressure ulcer extending through the underlying fascia is a grade 3 pressure ulcer. <input type="radio"/> A grade 3 pressure ulcer is always preceded by a grade 2 pressure ulcer.

Which statement is correct?

- A blister on a patient's heel is always a pressure ulcer of grade 2.
- All grades (1,2,3, and 4) of pressure ulcers involve loss of skin layers.
- When necrosis occurs, it is a grade 3 or a grade 4 pressure ulcer.

Which statement is correct?

- Friction or shear may occur when moving a patient in bed.
- A superficial lesion, preceded by non-blanchable erythema is probably a friction lesion.
- A kissing ulcer (copy lesion) is caused by pressure and shear.

In a sitting position, pressure ulcers are most likely to develop on:

- Pelvic area, elbow and heel.
- ankle and hip.
- shoulder and heel.

Which statement is correct?

- All patients at risk of pressure ulcers should have a systematic skin inspection once a week.
- The skin of patients seated in a chair who can't move themselves should be inspected every two to three hours.
- The heels of patients who lie on a pressure redistributing surface should be observed minimum a day.

Which statement is correct?

- Risk assessment tools identify all high-risk patients in need of prevention.
- The use of risk assessment scales reduces the cost of prevention.
- A risk assessment scale may not accurately predict risk of developing pressure ulcer and should be combined with clinical judgement.

Which statement is correct?

- The risk of pressure ulcer development should be assessed daily in all nursing home patients.
- Absorbing pads should be placed under the patient to minimize the risk of pressure ulcer development.
- A patient with a history of pressure ulcers runs a higher risk of developing new pressure ulcers

Which statement is correct?

- Malnutrition causes pressure ulcers.
- The use of nutritional supplements can replace expensive preventive measures.
- Optimizing nutrition can improve the patients' general physical condition which may contribute to a reduction of the risk of pressure ulcers.

The sitting position with the lowest contact pressure between the body and the seat is:

- An upright sitting position, with both feet resting on a footrest.
- An upright sitting position, with both feet resting on the floor.
- A backwards sitting position, with both legs resting on a footrest.

Which repositioning scheme reduces pressure ulcer risk the most?

- Supine position- side 90° lateral position- supine position- 90° lateral position- supine position.
- Supine position- side 30° lateral position- side 30° lateral position- supine position.
- Supine position- side 30° lateral position- sitting position- 30° lateral position- supine position.

Which statement is correct?

- Patients who are able to change position should be taught to shift their weight minimum every 60 min while sitting in chair.
- In a side lying position, the patient should be at a 90-degree angle with the bed.
- Shearing forces affect a patient's sacrum maximally when the head of the bed is positioned at 30 degrees.

If a patient is sliding down in a chair, the magnitude of pressure at the seat can be reduced the most by:

- A thick air cushion.
- A donut shaped foam cushion.
- A gel cushion.

For a patient at risk of developing a pressure ulcer, a visco- elastic foam mattress.

- Reduces the pressure sufficiently and does not need to be combined with repositioning.
- Has to be combined with repositioning every 2 h.
- Has to be combined with repositioning every 4 h.

A disadvantage of a water mattress is:

- Shear at the buttocks increases.
- Pressure at the heels increases.
- Spontaneous small body movements are reduced.

When a patient is lying on a pressure reducing foam mattress.

- Elevation of the heels is not necessary.
- Elevation of the heels is important.
- He or she should be checked for "bottoming out" at least twice a day.

Repositioning is an accurate preventive method because

- The magnitude of pressure and shear will be reduced.
- The amount and the duration of pressure and shear will be reduced.
- The duration of pressure and shear will be reduced.

Fewer patients will develop a pressure ulcer if :

- Food supplements are provided.
- The areas at risk are massaged.
- Patients are mobilized.

Which statement is correct?

- Patients at risk lying on a non-pressure reducing foam mattress should be repositioned every two hours.
- Patients at risk lying on an alternating air mattress should be repositioned every 4 h.
- Patients at risk lying on a visco-elastic foam mattress should be repositioned every 2 h.

When a patient is lying on an alternating pressure air mattress, the prevention of heel pressure ulcers includes:

- No specific preventive measures.
- A pressure reducing cushion under the heels.
- A cushion under the lower legs elevating the heels.

If a bedridden patient cannot be repositioned, the most appropriate pressure ulcer prevention is:

- A pressure redistributing foam mattress.
- An alternating pressure air mattress.
- Local treatment of the risk areas with zinc oxide paste.

In the following statements, please rate your confidence in performing the following skin assessment tasks for pressure injury prevention. Use the scale below to indicate your level of confidence.

	1 - Not Confident: I am not confident at all in performing this task.	2 - Slightly Confident: I feel slightly confident but still unsure.	3 - Moderately Confident: I feel reasonably confident but sometimes uncertain.	4 - Confident: I feel confident in performing this task with minimal uncertainty.	5 - Very Confident: I feel completely confident in performing this task without hesitation.
Identifying early signs of pressure injury (e.g., erythema, skin blanching, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assessing skin temperature and moisture levels to identify at-risk areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recognizing different stages of pressure injury, Stage 1 - Stage 4, deep tissue pressure injury, unstageable PI and Mucous membrane PI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using appropriate tools and scales (e.g., Braden Scale) for pressure injury risk assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify factors, which contribute to develop PI -Sensory Perception, Moisture, Activity Mobility, Nutrition, Friction and Shear (Braden Sub Scale)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monitoring changes in skin condition over time (e.g., deterioration, healing progress)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicating findings to the healthcare team (e.g., escalation of care, reporting, collaboration with other team members, documentation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Preventative care include: risk assessment and education, assess skin/tissue for signs of skin damage and pressure injury and preventive skin care-. Manage moisture/incontinence, redistribute pressure and nutrition.

Educating patients and families about skin care and pressure injury prevention

Applying knowledge of skin assessment in practice