

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

NCT Number:

Not Available as yet

Document Date

December 5, 2025

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?	<input type="radio"/> Yes <input type="radio"/> No
What is your gender ?	<input type="radio"/> Male <input type="radio"/> Female
What is your age? Please avoid using your date of birth.	<input type="text"/>
What is your highest educational qualification?	<input type="radio"/> Diploma in Nursing <input type="radio"/> Bachelors in nursing <input type="radio"/> Masters in nursing <input type="radio"/> Post graduate diploma <input type="radio"/> Other
What is your work title?	<input type="radio"/> Staff Nurse 1 <input type="radio"/> Nurse Clinician <input type="radio"/> Assistant Head Nurse
How many years of experience do you have as a registered nurse?	<input type="text"/>
How many years of experience do you have within the ICU setting ?	<input type="text"/>
Are you ICU trained ?	<input type="radio"/> Yes <input type="radio"/> No

Did you attend the HAPI workshop?

- ☐ Yes
☐ No

Do you have any other educational training for skin assessment other than the HAPI workshop?

- ☐ Yes
☐ No

If you answered yes to the question above, please indicate the name of the training completed.

Which statement is correct?

- ☐ Malnutrition causes pressure ulcers.
☐ A lack of oxygen causes pressure ulcers
☐ Moisture causes pressure ulcers

Extremely thin patients are more at risk of developing a pressure ulcer than obese patients

- ☐ The contact area involved is small and thus the amount of pressure is higher.
☐ The pressure is less extensive because the body weight of those patients is lower than the body weight of obese patient.
☐ 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?

- ☐ Pressure increases when the skin sticks to the surface.
☐ Friction increases when the skin sticks to the surface.
☐ Shearing increases when the skin sticks to the surface

Which statement is correct?

- ☐ Soap can dehydrate skin and thus the risk of pressure ulcers is increased.
☐ Moisture from urine, feces, or wound drainage causes pressure ulcers.
☐ Shear is the force which occurs when the body slides and the skin sticks to the surface.

Which statement is correct?

- ☐ Recent weight loss which has brought a patient below his/her ideal weight, increases the risk of pressure ulcers.
☐ Very obese patients using medication decreases the peripheral blood circulation are not at risk of developing pressure ulcers.
☐ 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:

- ☐ Age
☐ Dehydration
☐ Hypertension

Which statement is correct?

- ☐ A pressure ulcer extending down to the fascia is a grade 3 pressure ulcer.
☐ A pressure ulcer extending through the underlying fascia is a grade 3 pressure ulcer.
☐ A grade 3 pressure ulcer is always preceded by a grade 2 pressure ulcer.

Which statement is correct?	<ul style="list-style-type: none"><input type="radio"/> A blister on a patient's heel is always a pressure ulcer of grade 2.<input type="radio"/> All grades (1,2,3, and 4) of pressure ulcers involve loss of skin layers.<input type="radio"/> When necrosis occurs, it is a grade 3 or a grade 4 pressure ulcer.
Which statement is correct?	<ul style="list-style-type: none"><input type="radio"/> Friction or shear may occur when moving a patient in bed.<input type="radio"/> A superficial lesion, preceded by non-blanchable erythema is probably a friction lesion.<input type="radio"/> A kissing ulcer (copy lesion) is caused by pressure and shear.
In a sitting position, pressure ulcers are most likely to develop on:	<ul style="list-style-type: none"><input type="radio"/> Pelvic area, elbow and heel.<input type="radio"/> ankle and hip.<input type="radio"/> shoulder and heel.
Which statement is correct?	<ul style="list-style-type: none"><input type="radio"/> All patients at risk of pressure ulcers should have a systematic skin inspection once a week.<input type="radio"/> The skin of patients seated in a chair who can't move themselves should be inspected every two to three hours.<input type="radio"/> The heels of patients who lie on a pressure redistributing surface should be observed minimum a day.
Which statement is correct?	<ul style="list-style-type: none"><input type="radio"/> Risk assessment tools identify all high-risk patients in need of prevention.<input type="radio"/> The use of risk assessment scales reduces the cost of prevention.<input type="radio"/> A risk assessment scale may not accurately predict risk of developing pressure ulcer and should be combined with clinical judgement.
Which statement is correct?	<ul style="list-style-type: none"><input type="radio"/> The risk of pressure ulcer development should be assessed daily in all nursing home patients.<input type="radio"/> Absorbing pads should be placed under the patient to minimize the risk of pressure ulcer development.<input type="radio"/> A patient with a history of pressure ulcers runs a higher risk of developing new pressure ulcers
Which statement is correct?	<ul style="list-style-type: none"><input type="radio"/> Malnutrition causes pressure ulcers.<input type="radio"/> The use of nutritional supplements can replace expensive preventive measures.<input type="radio"/> 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:	<ul style="list-style-type: none"><input type="radio"/> An upright sitting position, with both feet resting on a footrest.<input type="radio"/> An upright sitting position, with both feet resting on the floor.<input type="radio"/> A backwards sitting position, with both legs resting on a footrest.

Which repositioning scheme reduces pressure ulcer risk the most?	<input type="radio"/> Supine position- side 90_ lateral position- supine position- 90_ lateral position- supine position. <input type="radio"/> Supine position- side 30_ lateral position- side 30_ lateral position- supine position. <input type="radio"/> Supine position- side 30_ lateral position- sitting position- 30_ lateral position- supine position.
Which statement is correct?	<input type="radio"/> Patients who are able to change position should be taught to shift their weight minimum every 60 min while sitting in chair. <input type="radio"/> In a side lying position, the patient should be at a 90-degree angle with the bed. <input type="radio"/> 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:	<input type="radio"/> A thick air cushion. <input type="radio"/> A donut shaped foam cushion. <input type="radio"/> A gel cushion.
For a patient at risk of developing a pressure ulcer, a visco- elastic foam mattress.	<input type="radio"/> Reduces the pressure sufficiently and does not need to be combined with repositioning. <input type="radio"/> Has to be combined with repositioning every 2 h. <input type="radio"/> Has to be combined with repositioning every 4 h.
A disadvantage of a water mattress is:	<input type="radio"/> Shear at the buttocks increases. <input type="radio"/> Pressure at the heels increases. <input type="radio"/> Spontaneous small body movements are reduced.
When a patient is lying on a pressure reducing foam mattress.	<input type="radio"/> Elevation of the heels is not necessary. <input type="radio"/> Elevation of the heels is important. <input type="radio"/> He or she should be checked for "bottoming out" at least twice a day.
Repositioning is an accurate preventive method because	<input type="radio"/> The magnitude of pressure and shear will be reduced. <input type="radio"/> The amount and the duration of pressure and shear will be reduced. <input type="radio"/> The duration of pressure and shear will be reduced.
Fewer patients will develop a pressure ulcer if :	<input type="radio"/> Food supplements are provided. <input type="radio"/> The areas at risk are massaged. <input type="radio"/> Patients are mobilized.
Which statement is correct?	<input type="radio"/> Patients at risk lying on a non-pressure reducing foam matters should be repositioned every two hours. <input type="radio"/> Patients at risk lying on an alternating air mattress should be repositioned every 4 h. <input type="radio"/> 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:	<input type="radio"/> No specific preventive measures. <input type="radio"/> A pressure reducing cushion under the heels. <input type="radio"/> 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.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Educating patients and families about skin care and pressure injury prevention

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Applying knowledge of skin assessment in practice

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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